Presented.

THE

JOURNAL OF HORTICULTURE,

COTTAGE GARDENER,

AND

HOME FARMER.

A CHRONICLE OF COUNTRY PURSUITS AND COUNTRY LIFE, INCLUDING BEE-KEEPING.

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TO OUR READERS.

"Time travels quickly" was the motto inscribed by a celebrated man on his last Christmas card—the late and widely-mourned Sir Frank Lockwood. Under his gay wisdom was a vein of seriousness, and he lived long enough to discover the great truth above recorded.

Quickly, indeed, do the days and months pass; and especially, perhaps, to those who enjoy them the most, and who are also advanced on their life's journey; nor does time hang heavily even to the young when it is occupied pleasantly, for then it seems to glide away all too soon.

In what pursuit can more pleasure be found of the most wholesome and satisfying nature than in that of gardening—satisfying, yet its votaries never satisfied; those who love the delightful and beneficent art, and pursue it successfully in some of its aspects and according to their means, rejoice in what they are able to accomplish; but their present pleasure is scarcely greater than that which they have in prospect.

The results of many efforts are seen and afford satisfaction, but those of other plans and methods in procedure are not yet developed; the future then is full of interest and hope, quickened day by day as the period of realisation approaches. Should this exceed anticipations, is the ardent amateur or gardener satisfied? No; he is gratified, and resolves to strive for greater achievements.

When the hopes are not fulfilled in the first endeavour, the intellect is stimulated to find the cause of a partial failure, and also to seek a safer course to follow in the future. The student and worker may have made a mistake, but gathers courage and perseveres, as he well may, because, has it not been said that "a man who never made a mistake never made a discovery?"

Another aspect remains to be noticed, namely, it is the rule, which the few exceptions only make the clearer, that those who derive real pleasure in gardening, and are made happier by indulgence in it, desire that others should be made as happy as they; and thus we find various methods resorted to for obtaining new recruits to strengthen the ranks, and endeavours made to guide them along safely by the light of experience.

This is done by personal intercourse, by mutual associations, by exhibitions, and through the agency of the press For nearly fifty years the *Journal of Horticulture*, though not always under the same title, has enjoyed a large share in the distribution of knowledge and information of interest, and also, we would fain hope, of benefit to the gardening community.

We honour the veterans who happily are still with us; we recognise with admiration the ability and zeal of earnest workers in the prime of manhood; we congratulate the probationers on their commendable efforts; and we thank all most cordially, amateurs and professionals, regulars and volunteers, of whatever age or station, at home or abroad, for their valued co-operation in widening the interest in, and sustaining the usefulness of, the medium that has long been, and still remains, a welcome guest in the homes of the wealthy and the workers who derive pleasure or profit from the grand old art of gardening.

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Journal of Horticulture.
THURSDAY, JULY 1, 1897.

JUBILEE REFLECTIONS.

Founders of our Faith.

FOR a brief space, ere the ringing notes of Jubilee cease to vibrate—those notes which have made no uncertain sound in our own domain, as evidenced by the right royal number of the *Journal of Horticulture* of last week, June 24th—it seems a fit and proper thing to turn up the pages of the long past, and give a passing recognition to those who have "allured to brighter worlds and led the way." In doing so, if it does not inspire, it may at least impress our young men with the extent of those herculean tasks which were grappled with in the dark, compared with the light of literature illumining these latter days. That there were giants in those days most will admit, but it is less easy to recognise the extent and the number of the difficulties those pioneers overcame, for we have no present parallel to judge them by.

Three hundred years ago, in 1597, John Gerarde published his "Herbal," thus marking an era in horticultural history, and which appears to be, so far as our own country is concerned, the first record of its kind of any importance which is preserved to us. Truly Gerarde's "Herbal" is apt to be regarded by us as little more than a literary curiosity, but upon reflection due justice may be afforded to the memory of this grand old gardener in weighing his production against contemporaneous works and inventions.

Gerarde was undoubtedly a gardener in every sense of the word, and like various men who have trod the same path through the intervening centuries, and left more brilliant tracks behind them, also studied the art of healing, for his somewhat scant biography tells us that he was a surgeon, as well as, for many years, chief gardener to My Lord of Burghley, who had the best collection of plants in the kingdom, including a great number of exotics, introduced by him—Gerarde. History also tells us that the "Herbal" was brought out at the expense of one J. Norton, who procured from Frankfort the blocks in wood, which were used in the "Herbal" of Tabernæmontanus.

Quaint as these may now appear to us, they must for that time have been highly skilled

productions, it being easy to identify many of his curious descriptions by them. In this, the tricentenary of Gerarde's "Herbal," and whilst this unique Victorian reign is being honoured to the confines of the Empire, though shorn of much of the pomp and pageantry surrounding the Virgin Queen, it is easy to link this humble ray of the long ago with the brilliant scintillations of literary light surrounding the sceptre of our own illustrious Sovereign. All honour then to Gerarde, the pioneer penman of the subject we love.

Stretching far, far back to the fourth century B.C., we may note the earliest known attempt to bring the objects of the vegetable kingdom within the pale of science by that eminent pagan philosopher Aristotle, but no definite results appear to have obtained until comparatively recent times, and these it is not difficult to trace to the study of medicine. Those who studied medicine were led to study plants, which latter, in the most remarkable instances, became the all-absorbing passion of the student's life. But a few of the honoured names associated with our subject can be included here, and those few are chosen more with the object of pointing a moral to young labourers in the great garden of Nature than to adorn a tale whose chapters, as far as we can see, will never be finished.

In 1656 was born Joseph Pitton de Tourneforte, of a noble French family, who at the early age of twenty-one obtained his heart's desire and pursued the study of botany amid many dangers and privations among the Alps and Pyrenees, forming a large collection of plants, and making many important observations. Due recognition awaited him by being appointed assistant professor to M. Fagon, then curator of the Jardin de Roi. In 1688 he made further explorations in Southern and Western Europe, to the further enrichment of the royal gardens, and finally his ripened experience and leisure were devoted to composing several comprehensive works, which marked a distinct advance in the methods of classification employed by his predecessors. De Tourneforte, who died in 1708, furnishes us with a striking example of that love of Nature which led him to early abandon a luxurious life and become her ardent and accomplished pupil. In 1682 Ray proposed the classifying of plants according to the natural system; laying, in fact, the foundations upon which Jussieu, De Candolle, Brown, Lindley, and others, have brought the system to its present perfection.

It is with reverential feelings one now approaches a name holding a unique position in the annals of our subject—if not in the history of the world; this is Linnæus, the Latinised name of Sir Charles Linné, or Von Linné, the son of a Swedish clergyman, born in 1707. To attempt the analysis of a character so diversified, so distinguished in the varied phases of botanist, natural historian, mineralogist, and doctor of medicine, would be impossible; sufficient for our purpose to briefly outline the career of this remarkable man, whose great mental attainments were second only to his untiring application to work, and work carried out in the most methodical manner. The circumstances of his birth may account for that innate love of nature so early developed, the simple charms of the Swedish pastor's garden and the necessitous seclusion in which they lived accounting for that, but the manner in which he went onward and upward to the highest pinnacle of fame a young student could possibly aspire to, marks him as a man of phenomenal mental endowments.

At the age of twenty young Linné left home to enter the university of Lund, and reaped the advantage of being kindly received by Dr. Stolæus, a physician and naturalist. A year after found our hero anxious to pursue his studies in the wider field afforded at Upsala, and here the first pinch of poverty was felt, his father with difficulty being only able to allow him £8 sterling towards this course of his education. Early struggles were to him but the incentive to self-advancement, and he quickly rose to the occasion by gaining a Royal scholarship, and further enhanced his means by private tuition. Recognition could not be denied a man who so early asserted his right to it, and under more favourable circumstances he now commenced the writing and arrangement of those exhaustive works, which, so far as botany is concerned, may, to some extent, have been displaced by simpler methods, but will never fail to excite and command the admiration of all scholars.

One visit only was paid by the learned Swede to England, where some little jealousy seems to have detracted from its pleasure; but by this time his botanical fame had spread through the whole of Europe, although it was not confined to that science alone, for every branch of natural history engaged the attention of this wonderful man.

His early excursions, chiefly on foot, extending over 10 degrees of latitude, and reaching within the arctic circle, are speaking witnesses of that indomitable energy which even privation and hardship were powerless to abate, and the mind of the man is still further shown in that indefatigable zeal which led him into a practical study and examination of the mines of his country, the results of which were no sooner acquired than to be again disseminated in his teachings. We also find him at this time taking out his degree as a doctor of physic (he eventually obtained the post of physician to the Fleet). As well as from his own Sovereign the reputation of Linnæus procured for him honours from all the chief centres of learning in Europe, and at his death in 1778 a general mourning took place at Upsala, whilst the same generous monarch, in his speech from the throne at the State's Assembly, lamented the loss Sweden had sustained in the death of her gifted son.

In the endeavour now to form a just estimate of the character of Linnæus, the impression obtains that his nationality is veiled under his vast labours and manifold accomplishments; that his gifts were for all people, as the results of them will probably endure for all time. His library and herbarium are now in possession of the Linnæan Society of London. To do justice to the memory of a great countryman of our own, whose labours were, perhaps, more in accord with our own work of gardening, and also to include a brief sketch of those eminent French and German scholars who have done a lion's share in scientific horticulture, we may well occupy another short paper.—INVICTA.

(To be concluded.)

FIBROUS ROOTED BEGONIAS.

AT one time these useful Begonias were largely grown for winter flowering. Fashion then changed the order of things, and for several years they almost dropped out of cultivation, only, however, to reappear again in another form of gardening. Some of the varieties were found to be well suited for summer bedding. For this purpose their good qualities were quickly recognised by many, and they now rank among the most popular of summer bedding plants. In this way a great impetus has been given to their culture, with the result that hybridists again turned their attention to them, and have now given us a race of very dwarf varieties extremely useful for planting as edgings to flower beds or borders.

In January last I sowed seeds of Sutton's Miniature, Fairy Queen, Duchess of York, and Reading Snowflake. The plants resulting from these sowings I found of great service in pots throughout the month of May, as they supplied just the kind of material required for use in conjunction with Fern in forming edgings to jardinières, vases, or bowls in carrying out house decorations. I have also several beds of them in the flower garden which are already beginning to make a good display. I have, however, reserved some for growing in pots for autumn flowering. These will be shifted at once into 5-inch pots, have the flowers removed, and be grown in pits throughout the summer, and I look forward to securing a fine batch of dwarf flowering plants of a type none too plentiful during the autumn and early winter months. Now that fibrous Begonias are generally recognised as being good summer bedding plants many cultivators are again growing some of the varieties largely for winter flowering, as they see clearly that on account of their wonderful floriferousness they are well able to hold their own against many modern plants much grown for the same purpose.

Those on the look out for a new feature in winter flowering

plants would do well to make a start at the present time with some of the best varieties of these Begonias. Young plants ready for potting may be obtained very cheaply, and frames or pits recently cleared of bedding plants are just the places to grow them in during the summer months.

I find a simple yet fairly rich compost suits them well. The one I use consists of three parts loam, one leaf soil, and one of well decayed manure, with a little sand and artificial manure added. Although it is a good plan to keep the plants close for a time after being repotted, it is not wise to coddle them afterwards. They ought to be given abundance of air—in fact, such treatment as tuberous Begonias enjoy during the summer; but during autumn and winter their flowering capabilities are not fully demonstrated if kept in a lower temperature than one ranging between 50° and 60°.

The following varieties are some of the very best:—

Argyrostigma gigantea is a strong grower, with large foliage beautifully marked with silver spots. Ascotensis is a grand bloomer, which bears large clusters of pink flowers. Carrieri is fine for winter flowering, flowers white. Fuchsioides is well adapted for covering walls and pillars, and in a suitable temperature flowers freely throughout the year. Attractive pot plants, suitable for decorative purposes, may be had in flower in the depth of winter.

Hybrida floribunda is a grand free-flowering hybrid, bearing coral-coloured flowers. It is one of the few plants which possess the distinction of blooming profusely throughout the year without becoming exhausted; this, too, when grown in comparatively small pots. Hydrocotylifolia is good for winter flowering; the foliage is bronzy. Insignis is free and vigorous; the flowers are of a lilac-pink colour. Knowsleyana is one of the very best for winter flowering; colour light blush.

Nitida is a very strong grower, which produces large clusters of silvery blush flowers in both winter and spring. Nitida alba odorata is similar to the preceding, except in the colour of the flowers, which, as the name implies, are white.

Ricinifolia is a useful variety, having large bronzy green leaves and bold flower stems. Semperflorens gigantea rosea and semperflorens Dr. Chassagny are a pair that should be grown by all for winter flowering, as they are very free and showy. Gloire de Sceaux, a recent introduction, is certainly one of the most beautiful winter-flowering Begonias we have. It is upright in habit of growth, and the soft pink flowers stand well above the bronzy foliage. Those who only require one variety should grow this, which concludes my list.—H. D.

PRECEPT AND PRACTICE.

(*Continued from page* 500, *last vol.*)

THE SCIENCES GENERALLY CONSIDERED.

A GENERAL knowledge of those sciences which are in intimate relationship to gardening must be regarded as essential—indispensable; although such knowledge from its complexity and vast extent will not, probably cannot, in the aggregate extend beyond sound elementary principles except in that direction towards which the individual bias inclines it.

One matter previously touched may now be concluded—viz., natural propagation other than by seeds, for this in a measure enters into our daily practice in some shape or form. What Nature pure and simple does, and can do in this direction, will only briefly detain, although her methods are both interesting and ingenious to supply auxiliary means of perpetuation. The branch depending to the ground—a natural method of layering; root buds; suckers; bulbs, corms, and tuberous roots of all kinds, with their plenary powers of reproduction and multiplication independent of seeds. Such methods, of course, being practically excluded from annuals or biennials, which we find generally endowed with marvellous fecundity of seed-bearing powers. There is here a fine field for observation and experimenting.

Respecting our own work of propagation and the practices of budding, grafting, and inarching, whereby the sturdy wildling or vigorous variety supports and nourishes the finer bred relation, such work must ever present an attractive interest to the young horticulturist, and it is a matter for regret that many are debarred from practising the theories they may be well versed in. Here we find a nursery training conferring privileges which may be excluded from the general routine of a private garden. Some of the most delightful of early days are recalled by memories of budding—Rose budding and fruit tree budding. Two of us, boys, carried the worsted and tied in after the budders, who were, of course, experts, and kept us rigorously to our own share of the business, but the dinner hour was our opportunity, when we inserted buds to our heart's content into every available branch or plant, from a Thorn to a Thistle, and took many surreptitious peeps afterwards at our (un)handiwork.

Since, as a head gardener, I have (and doubtless many of the same status have too) observed a good deal of this boyish practice carried out much on the same lines and in the same stealthy manner—buds and grafts where no buds and grafts should be. But early recollections are accompanied by a good deal of sympathy for those who, having the will, will find the way to amalgamate precept with practice. Our lads of the bothy, whose work does not include anything in the way of budding or grafting, can, if they will, bring these matters into the category of their pleasures, and if the "head" should be startled at finding a Victoria Plum or a Général Jacqueminot Rose springing from the hedgerow it may be overlooked in the knowledge that "boys will be boys," and that the culprit in particular will be a gardener. With many matters, as with these, we may now and again hear the lament that an opportunity has been wanting, with the poor attempt at self-satisfying consolation that it may never be needed. There is no balm in the whole kingdom of gardening for this sore, and if our young readers can conscientiously say that they have no opportunity, and granted that such is a fact, and granted, too, that they want it, then would I say, Create your opportunity, and you will have it.—AN OLD BOY.

(To be continued.)

NON-PRODUCTIVE STRAWBERRIES.

THE remarks that are now being made about Strawberry plants are extremely interesting, and I will relate my experience with them. When Royal Sovereign first came out I sent for six plants. Four of these bore some splendid berries the first season after planting; while two of them, the finest of all, did not even blossom. I propagated a large bed from all the runners I could get, and, being a novice, used all the six plants for that purpose. That accounted, I suppose, for the large number of barren plants in the bed and in another I have made since. Laxton's Noble, under exactly similar circumstances, gave the same result.

In order to settle the matter once for all—to my own satisfaction, at least—I am this season making more accurate experiments. The plants, both fertile and barren, are isolated, so that there will be no danger of taking a wrong runner, as there always is in a large bed. I have noticed, too, that in old plants there are several crowns, of which some are barren and some fertile, and it is difficult to avoid making a mistake with the runners. It is a good plan to pull out in May all the plants and parts of plants that do not blossom.

I am working with Royal Sovereign, Laxton's Latest of All, and Sir J. Paxton; but on a bed of Auguste Nicaise I cannot find a barren plant for experiment. If others will undertake the same interesting work we shall be able to say by this time next year, without the present uncertainty, what percentage of Strawberry plants comes right and wrong from fertile crowns, and what percentage comes wrong and right from barren crowns. Also, if the plants are allowed to stay in their places for a second year, we shall know whether the barren ones become fertile by age.—T. W. B.

THE ROSE ACACIA.

ROBINIA HISPIDA, or, as it is often called, "The Rose Acacia," is a native of the South United States, and makes a valuable addition to any collection of hardy shrubs. Possibly on account of its not being really well known it is rarely met with, except in those places where shrubs are made a speciality of. At Kew several masses are to be found.

The plants grow to a height of 6 or 8 feet, and all the young wood is thickly clothed with reddish brown hairs, which vary in length up to one-third of an inch. As the wood becomes older many of the hairs turn woody and sharp. The pinnate leaves are made up of from eleven to seventeen leaflets, which are ovate in shape, and terminated with a long stiff hair. The flowers vary in colour on different plants from almost white to deep rose. They are produced on slightly drooping racemes four or five together. On the typical plant the flowers are about the size of an ordinary garden Pea, rose coloured, with the side petals of a lighter shade, the calyx, like the young wood, being thickly covered with soft brown hairs.

Of the several varieties that known as Robinia hispida var. inermis is the best. The wood of this is glabrous, the flowers larger, and produced in larger racemes. The growth is not so free as in the type, but it makes much the better plant of the two for a single specimen. When grafted on a short stem small round-headed trees are formed.

To propagate the typical plant the long roots should be cut up into pieces 3 inches in length, the pieces being put singly in thumb pots in sandy loamy soil, and kept in a close case until growth and root action has commenced. In case of the variety mentioned it may be grafted on stocks of R. pseud-acacia, or the young growths may be layered. Between propagating and planting permanently not more than one or two years should pass, as very long roots with little fibre are made, consequently large plants do not move well. Sandy loam with yearly dressings of farmyard manure suits it well.—D. K.

ROSE SHOW FIXTURES FOR 1897.

July 2nd (Friday).—Crystal Palace (N.R.S.).
,, 6th (Tuesday).—Diss.
,, 7th (Wednesday).—Glasgow, Hanley,* Hitchin, Reigate, Leeds,† and Tunbridge Wells.
,, 8th (Thursday).—Bath, Bedford, Farningham, Gloucester, Harrow, Newcastle-on-Tyne,† and Woodbridge.
,, 10th (Saturday).—Manchester, New Brighton.
,, 13th (Tuesday).—Wolverhampton.†
,, 15th (Thursday).—Norwich (N.R.S.) and Helensburgh.
,, 22nd (Thursday).—Halifax and Trentham, Bedale.
,, 23rd (Friday).—Ulverstone.
,, 27th (Tuesday).—Tibshelf.
,, 28th (Wednesday).—Chester.*
,, 31st (Saturday).—Liverpool.*

* Shows lasting two days. † Shows lasting three days.

The above are the only dates that have as yet reached me. I shall be glad to insert in the next list any further fixtures that may be sent me, whether of Rose shows or of horticultural exhibitions where Roses form a leading feature.—EDWARD MAWLEY, *Rosebank, Berkhamsted, Herts.*

ROSE JUDGING—"THE NATURE OF THE BEAST."

IT must be now several years since I put this question in Rose judging before the readers of the *Journal*—Are we to make any allowance for "the nature of the beast" or not? It originally came up at the Crystal Palace. A triplet of Jules Finger (T.) was before the judicial eyes of my fellow judge and myself; the blooms were *passée* in colour and not a pleasing sight. When I expressed my condemnation my coadjutor excused them with the words, "Oh! that is the nature of the beast." That was true enough, but the point was that I did not see there was any reason why the beast should not be condemned for his evil nature.

On Thursday last, when I was judging with a very well-known amateur, whose knowledge of the manners and customs of H.P.'s is second to none, the same point came up again. He would judge each Rose by its *own* standard, instead of by one chosen or ideal one. Thus, perhaps, for instance, while we were pointing the blooms:—"Oh!" said he, "that is Ulrich Brunner; it is not big enough for Ulrich." "But," said I, "we have nothing to do with that; so long as it is in size up to our chosen standard it may be worthy of our highest points, whatever variety it is." "Still," said he, "as Ulrich Brunner it is undersized, and therefore loses points." I did not agree with him, but considered our chosen three-point Rose to be the ideal standard for three points, in size as well as other matters.

It seems to me that a *reductio ad absurdum* may easily be made of my friend's arguments. By his contention Wm. Allen Richardson, or Perle d'Or for the matter of that, may be big enough, if not undersized for the variety. We cannot give them this credit; nor, I imagine, can we detract from the value of a naturally large Rose, if it is large enough for the standard. I shall be glad if rosarians, especially if members of the N R S Committee, will talk this matter over together.—W. R. RAILLEM.

CARNATION SUPPORTS.

"I HAVE a 'patent' method of supporting the flowers of Carnations, and am wishful to make the readers of the Journal a handsome present of it. It is not a 'Jubilee patent,' but merely a device of the very simplest kind which I have adopted for a long time, and which saves endless trouble, for it does away with the old-fashioned and very tedious process of tying. It is simply to take a Willow rod and cut it into the lengths required, sharpen the bottom of each stick by a single cut of the knife, then take the other end and split it open; into this split the flower stem is placed, and is held firm and safe, the other end of the support being, of course, forced into the ground. Nothing could be simpler."

[Thus writes an esteemed correspondent; but in view of what we have to say his name is not published, or his friends might perhaps, in humourous mood, add another. The simple method described so clearly is not a "Jubilee patent," and though it has been in use to our knowledge for thirty years, it may not be the less an invention of our correspondent; and while we have seen hundreds of the home-made supports used, we do not know in how many gardens, they may not be known to numbers of Carnation growers, to whom the hint may be useful. The neatest method of securing Carnations is by the sticks and wire clips used by Mr. R. Sydenham and other growers, and though cheap enough and extensively employed a supply cannot be had by all who might like them for supporting their flowers, and to them the "handsome present" of our correspondent may be useful as a Jubilee gift at Carnation time.]

ROYAL HORTICULTURAL SOCIETY.

DRILL HALL, JUNE 29TH.

THE Drill Hall on the above date presented a very bright and beautiful appearance. Almost the whole of the available space was fully occupied with exhibits appertaining to the Floral Committee. Fruits and vegetables were less numerous. The most conspicuous Orchid exhibit was the silver Flora medal one of Messrs. J. Veitch & Sons, Ltd., which contained many superb flowers. The Rose show held in conjunction will be found reported on another page.

FRUIT COMMITTEE.—Present: J. Cheal, Esq. (in the chair); with Messrs. A. F. Barron, J. H. Veitch, A. Dean, J. A. Laing, G. H. Sage, G. Wythes, H. Balderson, J. Smith, W. H. Divers, G. Norman, and R. Fife.

Mr. G. Kelf, gardener to Mrs. Abbott, South Villa, Regent's Park, sent three boxes of Peaches, including Royal George, Dymond, and Dr. Hogg. The fruits were well coloured, and a credit to the grower. Strawberries from Messrs. Laxton Bros., Bedford, were splendid. The varieties comprised Monarch, Leader, Commodore, Profit, Alma, and Mentmore. The same firm sent a new early Pea named Thomas Laxton.

Mr. J. Hudson, gardener to Leopold de Rothschild, Esq., staged Plums Jefferson, Kirke's, Transparent Gage, and Reine Claude de Comte Attherns, together with Cherries Black Circassian and Bigarreau Napoleon, all the fruits being in first-rate condition. Mr. E. Beckett, gardener to Lord Aldenham, Aldenham House, Elstree, sent Pea Carter's Early Morn, a handsome podded early variety. Messrs. Kelway and Son, Langport, sent an unnamed Longpod Bean and a dish of Peas.

Melons were sent by Mr. A. Bishop, gardener to Dr. L. Burrell, Bury St. Edmunds; Mr. W. Davies, gardener to the Hon. H. E. Butler, Nidd Hall, Yorks; and Mr. C. Martin, Clarence House Gardens, East Cowes, but no award was made.

Mr. G. Wythes, gardener to Earl Percy, Syon House, Brentford, sent Melon Thames Bank and fruiting branches of the Loquat.

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair); with Messrs. J. Fraser, H. B. May, R. Dean, G. Stevens, J. Hudson, J. F. McLeod, C. J. Salter, R. M. Hogg, J. Fraser, W. Bain, J. W. Barr, C. E. Pearson, C. E. Shea, H. J. Jones, H. J. Cutbush, E. Beckett, C. Blick, and H. Turner.

On each side of the entrance to the Hall Messrs. J. Veitch & Sons, Ltd., Chelsea, arranged a semicircular group of Conifers. None of the specimens was of course large, but the quality was splendid. There were well known as well as rare species and varieties, attracting a considerable amount of attention. The same firm also staged a collection of Sweet Peas, comprising all the leading varieties (gold medal). Messrs. W. Cutbush & Son, Highgate, staged a large group of Malmaison and border Carnations in fine condition (silver Flora medal). Hardy flowers in extensive variety came from Messrs. J. Cheal & Sons, Crawley. There were Violas, Poppies, Potentillas, and many others (silver Banksian medal).

Messrs. Barr & Son, King Street, Covent Garden, sent a large collection of hardy flowers, amongst which the most noticeable were Delphiniums, Potentillas, Calliopsis, Iris Kæmpferi, Campanulas, Hemerocallis, and Phloxes (silver Banksian medal). The hardy flowers from Mr. M. Pritchard's, Christchurch, Hants, were in considerable variety, and of high quality (silver Banksian medal). The small group of Roses staged by Mr. G. Baskett, gardener to Lord Penzance, Eashing Park, Godalming, comprised both single and double forms. Four boxes of Roses came from Mr. W. Rumsey, Waltham Cross. The most conspicuous variety was the new Mrs. Rumsey, with its lovely soft pink flowers (silver Banksian medal).

Very bright was the exhibit from Messrs. Kelway & Son, Langport. It contained Delphiniums, Cannas, Gaillardias, Iris Kæmpferi, and others (silver Banksian medal). Mr. H. B. May, Upper Edmonton, arranged a handsome collection of Adiantums in extensive variety (silver-gilt Banksian medal). Begonias, both single and double, from Messrs. H. Cannell & Sons, Swanley, were of good quality, and contained several varieties of more than average merit (silver Banksian medal). Pansies, Violas, and Sweet Peas comprised the exhibit of Messrs. Dobbie & Co., Rothesay. The sprays of Violas made a very effective display alone, the Sweet Peas losing in effectiveness through being rather packed in the receptacles (silver Flora medal).

The plants of Malmaison Carnations from Mr. J. F. McLeod, gardener to J. P Morgan, Esq., Dover House, Roehampton, were superb. The foliage was stout and perfectly free from disease, while the flowers were large, richly coloured, and delightfully fragrant (silver-gilt Flora medal). Messrs. W. Paul & Son, Waltham Cross, sent an interesting collection of Roses both in pots and cut. There were several varieties that have been introduced by this firm during the Victorian era, besides others that are very rarely seen (silver Banksian medal).

Messrs. R. Wallace & Co., Colchester, sent hardy flowers of splendid quality. Liliums, Irises, and Calochorti, with Hemerocallis aurantiaca major, were very conspicuous (silver Flora medal). Mr. Foster, Brockhampton Nurseries, Havant, staged a collection of Sweet Peas in variety (silver Banksian medal). P. Purnell, Esq., Woodlands, Streatham, sent a small group of Carnations; and Mr. W. Wells, Earlswood, a few Chrysanthemums.

One of the handsomest exhibits in the Hall was that of Messrs. F. Sander & Co., St. Albans. The group comprised splendidly grown plants of Anthuriums, Watsonia Ardernei, Nephrolepis bostoniensis, Caladium albanense, Streptocarpuses, Encephalartos gracilis, together

with a few Orchids of great merit (silver-gilt Banksian medal). Messrs. J. Veitch & Sons sent baskets of Indigofera decora alba, Escallonia Phillipiana, Cytisus nigricans, Robinia hispida, Diervilla sessilifolia, and Calycanthus lævigatus, together with a box of Rhododendron javanico-jasminiflorum hybrids.

CERTIFICATES AND AWARDS OF MERIT.

Adiantum fasciculatum (H. B. May).—A graceful form, with rather thin, tall-growing fronds (first-class certificate).

Begonia Lady Pearson (J. Laing & Sons).—A beautiful double variety, with pure scarlet flowers (award of merit).

Calochortus clavatus (R. Wallace & Co. and C. J. Van Tubergen, jun.).—A very beautiful flower, the colour is rich yellow (award of merit).

Carnation Haidee (C. Blick). — A fine deep heliotrope coloured variety, of splendid substance (award of merit).

Carnation Hampden (C. Blick.)—A lovely rosy buff variety, with medium sized flowers (award of merit).

Cypripedium Mrs. E. V. Lowe (H. Low & Co.).—A chastely coloured form with white petals spotted with crimson. The dorsal sepal is green at the base, spotted brown, and with a broad white margin. The pouch is pale greenish white (award of merit).

Lælio-Cattleya Eudora superba (J. Veitch & Sons).—This is a form that is in all respects an improvement on the type. The colour is superb (first-class certificate).

Pink Albino (J. Lamb).—A fragrant white variety, with smooth petals (an award of merit).

Rose Kaiserin Augusta Victoria (Paul & Son).—This Rose is now too well known to need any description (award of merit).

Rose Madame A. Chatenay (Paul & Son).—A lovely Hybrid Tea. The colour is pale salmon rose flushed with very pale buff (award of merit).

Rose Marquise Litta (W. Paul & Son).—A fine rich rose coloured Hybrid Tea (award of merit).

Rose Souvenir de President Carnot (Paul & Son).—A superb Hybrid Tea, with blooms of beautiful shape. The colour is very delicate rosy white (award of merit).

Strawberry Mentmore (Laxton Bros.).—A handsome Strawberry, resulting from a cross between Noble and British Queen. The colour is very deep and the flavour fair (award of merit).

Thuia gigantea aurea (J. Veitch & Sons).—A superb golden formed variety of the well-known type (first-class certificate).

FRUIT CROPS IN IRELAND.

THE very sharp weather we had during the months of April and May left the prospect of a good fruit crop in this part of Ireland far from good. Apricots except where protected are a failure ; Pears, Cherries and Plums a light crop, Morello Cherries especially. Apples on walls have set well, Ribston Pippins carrying a heavy crop. In the open Pear and Plum trees have very few fruits on them, some having none, although all flowered abundantly. Damsons are a complete failure, Apples are irregular, some trees being heavily laden, and others having very few fruits on them. Outside Figs are a heavy crop, and very early.

Small fruits, with the exception of Gooseberries, are a very heavy crop. I never saw Strawberries and Raspberries so promising, the rain for the past three weeks having done them much good ; the berries of the Strawberry are very large on account of it. Royal Sovereign, Noble, and John Ruskin were ripe the same time (June 16th) on a south border, Leader a few days later. Others which do well and will ripen in the order named are Sensation, Lord Suffield, Empress of India, Auguste Nicaise, Monarch, President, Bothwell Bank, Sir J. Paxton, Dr. Hogg, Scarlet Queen, and Latest of All. The last named is only in flower (June 20th) in the open border. It grows strongly and produces runners freely, though several complaints have been heard about it in those respects.

Currants are a heavy crop, the bunches being extra long. Gooseberries are a light crop in most gardens. Under glass all fruits look promising. —W. T., *Tullamore*.

A VISIT TO SUTTON'S.

ARRIVING at Reading on the eve of the Royal Counties Agricultural Show, and being too late to secure a comfortable bed, I naturally did not feel inclined to linger on the couch in the smoking room any longer than necessary, so having performed my toilette set out to visit Messrs. Sutton's nurseries by way of a constitutional previous to visiting the show.

One of the first things that attracted my attention was the magnificent show of Gloxinias, which were grandly flowered, and which do the firm so much credit. A very beautiful variety is the pure white Her Majesty. Duke and Duchess of York and Sutton's Purple are grand varieties, and stand out very distinctly in a collection. The "French" strain of spotted varieties has been much improved by this firm, and many novelties of sterling merit are to be seen.

But I must also say a few words about the Begonias, Streptocarpus, and Calceolarias. Begonias are very largely grown, long ranges of houses and frames are filled by thousands of plants looking in the best possible condition. The flowering houses contained many charming varieties of doubles and singles, of erect dwarf habit, and sturdy growth. The double named varieties were certainly amongst the finest I have seen. The single varieties were scarcely so forward, but those commencing to flower clearly prove that they were first rate. Streptocarpus were grandly flowered and in good variety ; the blues, lilacs and reds prove that it is a strain of excellence, the curious Streptocarpus Wendlandi being quite at home, and I think will prove wonderfully useful for grouping purposes.

Calceolarias are very largely grown for seed. The strain contains many beautiful colours, and is very dwarf, compact, and of strong constitution. Cloth of Gold interspersed amongst them had a telling effect. I did not see one poor variety. Time fails me to enlarge upon what I saw at Messrs. Sutton's, but I will warrant anyone who contemplates a visit that he will be quite satisfied that he has used the time to good account.—H. PBOSSER, *The Knoll Gardens, Wimborne*.

HOYA BELLA.

ONE of the most charming little plants for the stove is Hoya bella. It is a diminutive and delicate counterpart of the well-known Hoya

FIG. 1.—HOYA BELLA.

carnosa, and like its equally pretty relative, H. Paxtoni, is much better suited than the old species for a shelf near the glass in the stove, as they are both dwarf and compact in habit, with small umbels of flowers. These two species have long been great favourites with me, as they produce a charming display of flowers, and I find they are, when well grown, invariably admired. Similar treatment suits them both—namely, a compost of peat, sand, and finely broken charcoal, the pots being thoroughly drained. A warm position is required where the plants can be fully exposed to the light, otherwise they are liable to become sickly and unsatisfactory.

H. bella (fig. 1) has been in cultivation many years, and might be expected to be in almost every collection of plants ; but such is by no means the case, for I know many gardens of more than ordinary pretensions where it is not grown, and why this should be I entirely fail to understand. This neglect of a beautiful plant is strange, for when its delicate wax-like white flowers with their rich purple central rays are fully expanded the plant is unrivalled except by its near relative, H. Paxtoni. The neat trusses of flowers are invaluable for cutting when something particularly choice is required.—R. THOMSON.

Notes & Gleanings

EVENTS OF THE WEEK.—The shows that are to be held during the coming week are very numerous, and Roses will be in evidence in all parts of the country. Rosarians will be most interested in the N.R.S. Metropolitan Show at the Crystal Palace on Friday, which promises to be of much excellence. Other fixtures will be found in the list on page 4.

—— WEATHER IN LONDON.—The Diamond Jubilee celebrations were, as all the world now knows, carried out in what is recognised as Queen's weather. On Thursday evening a thunderstorm passed over London, being much heavier in some parts than in others. Friday and Saturday were fine again, while on Sunday morning rain fell heavily for about two hours, the afternoon and evening being fine. Small rain was in the wind on Monday morning, but the afternoon was clear. Slight showers fell in the evening, and again on Tuesday morning. Wednesday was fine.

—— GARDENING APPOINTMENT.—Mr. John Ricketts, late foreman to Miss Gretton, Bladon House Gardens, Burton-on-Trent, has been appointed head gardener to J. P. Jackson, Esq., Stubben Edge Gardens, Ashover, near Chesterfield.

—— NEWCASTLE SUMMER FLOWER SHOW.—This Show will be held in the Recreation Ground on Thursday, Friday, and Saturday, 8th, 9th, and 10th July. Very valuable prizes are offered for Roses, including a special Victorian prize, and for table decorations and bouquets. To nurserymen who put up stands not for competition the Society offer their gold, silver, and bronze medals. Besides bands the Society have been fortunate in obtaining the Army Gymnastic Staff to give displays each afternon and evening.

—— EMPLOYÉS' ANNUAL EXCURSION.—The weather was all that could be desired on Monday last, when the employés of Messrs. John Sharpe & Son, of the Royal Seed Establishment, Bardney, took their departure by the nine o'clock train en route for Sutton-on-Sea, where they had been kindly invited by Mr. W. H. Sharpe to spend the day, accompanied by the "Bardney Brass Band," which is upheld by the firm, who added greatly to the day's pleasure by playing lively airs in grand style at interva's. On arrival at Sutton the party had a splendid dinner, after which the Vicar, who accompanied the party, in a short speech proposed the health of the firm, which was drunk with great enthusiasm. A march was then made to the beach, where cricket, donkey riding, and other seaside pastimes were indulged in freely, enjoyment being the order of the day, no expense being spared by the firm to add to the enjoyment. Tea was provided at four o'clock, after which the party returned to Bardney, after having spent the happiest day that anyone could wish for.

—— TO REGULATE THE SALE OF FRUIT.—Reform is in sight in the marketing of fresh fruits in Chicago so far as size of package and quality are concerned. A new city ordinance is now in force which covers the situation quite fully. It is substantially as follows: It is against the new law to offer for sale any basket, box, barrel, or other package of fruit or vegetables which is not of uniform quality and size throughout. Packages of Peaches, Apples, Quinces, Potatoes, Pears, Berries, Plums, Beans, Onions, Peas and all other kinds of fruit, except Grapes and Bananas, shall contain quarts, pecks or bushels and multiples of same, and the entire contents in each package must be distinctly marked on the outside. Section 2 of the ordinance says: All Grapes which shall be sold in any basket, box, or other package or parcel containing a definite quantity shall be sold in one pound or multiples thereof, and the quantity in each and every package shall be distinctly marked on each package so that the same can be easily read by the purchaser. It remains to be seen whether this means in actual practice that the Grape shippers of New York, Ohio and Michigan must put exactly 9 lbs. in a 9 lb. basket, and so mark the outside. The penalty section of the law provides that whoever sells any package which does not run uniform in quality throughout or is short in weight or measure shall upon conviction be fined from 10 dols. to 25 dols. for each offence. Coloured netting cannot be used over baskets of Peaches and Grapes.—("American Agriculturist.")

—— PROPOSED NEW PUBLIC GARDENS.—Prizes have been offered for the best designs for laying out public pleasure grounds at Yeovil (Somerset) and at Crediton (Devon). At Yeovil there were nine competitors. In both cases the first prize has been awarded to Messrs. R. Veitch & Son, Exeter, for designs prepared by their landscape gardener, Mr. F. W. Meyer.

—— CHRYSANTHEMUMS MRS. AIRDRIE AND DUCHESS OF FIFE.—Will anyone who has grown these two varieties give their opinion as to their similarity? I believe they are the same, although no one seems to have made any remark upon them. Have any of the special classification committee grown the two varieties? If so, they must have noticed they were the same in habit, foliage, size of flower, and colour. Intending exhibitors must be careful about staging the two varieties as distinct.—W. WELLS.

—— ROBERT HOGG MEMORIAL MEDAL.—At a meeting of some leading horticulturists held at the Horticultural Club on Tuesday, the 15th ult., it was determined that a die for a medal in memory of the late Dr. Robert Hogg should be cast and presented to the Royal Horticultural Society, who will from time to time issue a medal for fruit to be called the "Robert Hogg Memorial Medal." A committee was formed, of which Mr. Harry J. Veitch consented to be the Chairman, and Mr. Harrison Weir kindly undertook to make a design for the obverse of the medal. Subscriptions will be solicited to defray the expense, not to exceed 1 guinea, while smaller subscriptions will be asked for. A circular will shortly be issued, and in the meantime any person wishing to join may send their subscriptions either to Mr. Veitch or to the Rev. H. H. Dombrain.

—— OUR HOLIDAY NUMBER.—Just as everything had to stand aside last week in London for the great Royal procession and not soon-to-be-forgotten Diamond Jubilee celebration, so had what may be termed the usual work-a-day contributions to this Journal, and even the reports of some shows, for matter of a different kind. We took care that no inconvenience was caused to inquirers on subjects of urgency, as they were answered by post. We are glad to know that the change of literary fare for the week proved so universally acceptable, and though we cannot publish several commendatory letters we have received on the subject, we thank the writers of them all the same. Mr. Arnott desires to say that he is "unfortunately" not (as some readers seem to have assumed he was) the author of the matter preceding "Balmoral," intimating at the same time that he would like to know the writers, and to see Mr. D'Ombrain.

—— JUBILEE POETRY.—We have had numbers of verses sent to us of one kind or another relative to the above event, the best being the following from "Sixty Years a Queen," by Mr. W. Baylor Hartland, Cork:—

"All London put by toil to-day—
Old Sol came forth with pride;
The rich, the poor, 'neath buntings gay,
Were marshalled side by side.
Refrains of music filled the air,
Caught up by hosts unseen—
The same old song—the same old prayer—
That prayer!—God save the Queen!!!"

The lines have the merit of conveying truth. It is a bold thing to prophesy as to what "Old Sol will do" (for the lines were written some time before June 22nd); but it is a fact that the sun "came forth" exactly at 11.15, the time of departure of the Queen at Buckingham Palace.

—— NOTES FROM THE ISLE OF WIGHT.—The thirteenth annual Rose Show and Exhibition of cut blooms was held in connection with the Ryde Horticultural and Exhibitions Association on Tuesday, June 15th. The Exhibition was opened by the Mayor of Ryde, who stated that the entries were not so numerous as in previous years, which was accounted for by the lateness of the season. The day was beautifully fine and the attendance very large, over £40 being taken at the gates. The principal prizewinners were Messrs. F. Cant, J. O. Brook, T. L. Winthrop, B. Ladhams, Mrs. E. C. Murray, Mrs. Morritt, Miss G. Carter, and the Rev. J. Shearme. Splendid collections of wild flowers were staged by Mrs. C. Kent, Miss L. Kent, and Mr. V. Kent, over 150 varieties being in the first prize stand. Mr. B. Ladhams of Shirley staged a magnificent collection of hardy perennials, which were greatly admired. The Isle of Wight Rose Society held its exhibition on Friday, June 18th, in conjunction with the National Rose Show at Portsmouth. Many of the usual exhibitors in the Island were conspicuous by their absence.—S. H.

CORNUS KOUSIA.

It cannot be said ("M. G. R.") that this shrub is very frequently seen, notwithstanding its great beauty. The leaves, which are oval in shape and rich green in colour, are luxuriant and attractive, while the pure white Trillium-like flowers are certain to elicit admiration. C. Kousia is figured and described by Siebold in his "Flora Japonica," I., page 30, t. 16, under the name of Benthamia japonica. The genus Benthamia has long since been very properly merged into Cornus, and the present name may have in some measure obscured its origin. According to Siebold it is a dense bushy shrub about the height of a man, growing wild on the mountains of Kinsin and Nippon in Japan, from 2000 to 4000 feet elevation, flowering in May and June. Its affinity with the Himalayan Cornus (Benthamia) fragifera is very manifest. Bushes such as those described above as growing in Japan could not have otherwise than a picturesque effect when clothed with the pearly white flowers as shown in our illustration (fig. 2, page 9). We believe Messrs. J. Veitch & Sons were the introducers of this plant.

HORTICULTURAL SHOWS.

YORK.—June 16th, 17th, and 18th.

The thirty-ninth annual show of the above Society was held in the Bootham Asylum Grounds. The show of this year will be long remembered hy the Gala Committee and the exhibitors, as the experience of the opening day was unique in the history of this Society, and it is to be hoped in all other kindred societies. With the barometer gradually falling the day previous, and rain early in the morning of the 16th, it was feared the opening day would he a wet one. Instead of rain, however, a strong gale sprang up, and with disastrous results. The whole of the vast marquees in which the exhibits were placed, covering it is estimated about 3 acres of ground, were blown down, the poles snapped in twain, and the canvas in many places was torn into rihbons. By two o'clock the gale had completed its terrible havoc. The one containing the fruit and table decorations was the first to go. Some of the exhibitors got their fruit out, but much would he spoilt. The tent in which the valuable collections of Orchids were staged was the next to go, many of the plants being overturned and hroken; the tents now left forming three sides of a square, these soon sharing the same fate. The one in which the groups were arranged presented the most lamentahle scene, the short poles being lifted from the ground and dashed against the plants, sending them in all directions. The tent containing the specimen stove and greenhouse plants stood the test the longest. Most of the large and valuahle specimens were safely transferred to the vans. The usual gathering of membhers of the Committee, Judges, and invited guests had to be ahandoned.

Of the many good shows held, this promised to be one of the best. It will be remembered that last year the Committee of the Royal Horticultural Society visited the show. No doubt this brought a larger number of exhibitors, especially from the trade. It was thought that it might not be so good this year. The schedule, however, contained several new classes, and had the weather been favourable, this would no doubt have proved the best show ever held in the Cathedral City. The groups were arranged on each side of the entrance tent, leaving an opening up the centre, from which the large cone of specimen stove and greenhouse plants in the next tent could be seen. There were only five exhibitors in this class. The arrangement of the groups was quite up to their usual standard of excellence. At no other show are the groups arranged to produce so good effect as they are at York.

Messrs. J. Cypher and Mr. W. Vause, Leamington, were the only exhibitors in the class for ten stove or greenhouse plants in hloom and six ornamental fine-foliage or variegated plants. Two good groups of Carnations in pots were set up by Messrs. Laing & Mather, and Messrs. W. Cuthush and Son. One of the principal features of the show was a class for a collection of Orchids in bloom arranged for effect, occupying space not exceeding 150 square feet, Palms, Ferns, and foliage plants being allowed, for which a first prize of £20 and the Society's gold medal was offered, given to commemorate the sixtieth year of the reign of H M. the Queen. There were many valuable plants in these collections, Messrs. J. Cypher and Mr. John Rohson, Bowdon Nurseries, Altrincham, being the exhibitors. There were several other classes for Orchids, for which substantial prizes were offered. The Show Pelargoniums were a grand sight, good specimens and better flowered than some years. Collections of Roses in pots were good. The exhihitors in this class were Messrs. W. Jackson & Co., Mr. G. Cottam, and Mr. H. Pyhus. The cut Roses were not quite so good as last year, and the number of entries less.

A new class was for a decorated table of ripe fruit, not to exceed fourteen dishes and not less than ten dishes, plants in pots allowed, flowers and foliage to be in glass epergnes, prizes of £15, £12, £8, and £5 were offered. Sir J. W. Pease, Bart., M.P., the Duke of St. Albans, the Earl of Harrington, and Mr. Jas. Sinclair were the exhibitors. There were classes for six kinds of fruit and four kinds respectively—in all fourteen classes for fruit. Prizes as usual were offered hy Messrs. Sutton & Sons and Messrs. Wehh & Sons for collections of vegetahles, which brought several competitors.

The gale commenced its work of destruction just before the time for judging, so of course no prizes were awarded. It was hinted that the show would be closed; hut a meeting of the Committee was held under the presidency of the Lord Mayor, and it was resolved that the exhibits should he removed, hut that the Gala, so far as possihle, should proceed, the admission to the field heing reduced to half price, as no flower show could be held. The loss wlll be heavy both to the Committee and the exhihitors. It is to be hoped it will not prevent the latter from staging at future shows.

PORTSMOUTH.—June 18th.

In the Victoria Park, which is most conveniently situated to the railway station, the annual Southern Provincial Exhibition of the National Rose Society was held, and considering the backward state of Roses was of much excellence. If the hlooms generally were not large, they were exceptionally clean, shapely, and bright in colour, combining the salient qualities of the flower. The garden Roses were no douht the feature of the Show, demonstrating so ahly the value they possess for floral decoration. The variety, too, of form and colour in this section is most charming, from the pure single Sweet Briar to the compact and neat button-like blossoms so freely displayed. The Isle of Wight Rose Society held its meeting in conjunction with the parent Society, an arrangement that seemed to be quite a happy combination, as hoth apparently benefited hy the association. The arrangements were of the best, under the ahle guidance of the Hon. Secretaries, the Rev. H. H. D'Omhrain and Mr. E. Mawley. Captain Ramsay, Fareham, the Hon. Secretary to the Local Committee, exerted himself to make the Show what it was—a success.

The centre of interest lay in the principal class for forty-eight distinct varieties, one truss of each. Mr. B. R. Cant was some distance ahead of his three opponents, securing the coveted award with medium-sized handsome blooms, heautifully staged. Especially worthy of mention were Madame Gabriel Luizet, Ulrich Brunner, Marchioness of Downshire, Marie Baumann, Captain Hayward, and Kaiserin Augusta Victoria. With smaller, yet bright, blooms Messrs. D. Prior & Sons, Colchester, secured the second award. The third prize was taken hy Mr. G. Mount, Canterbury. In this class Messrs. F. Cant & Co., Colchester, were unfortunately disqualified through including a sport from Susanne Marie Rodocanachi, not yet in commerce, and thus contrary to rule 7, which is a recently added one.

Although the entries in the class for twenty-four distinct varieties were limited to three, they made a pleasing display. The post of honour was occupied hy Messrs. Curtis, Sanford & Co., Torquay, with medium-sized, richly coloured examples of popular varieties. The second prize was secured by Messrs. Burrell & Co., Cambridge; Mr. G. Prince winning third place. Five exhibitors ventured for the prizes in the class for triplets, in twenty-four varieties. Mr. B. Cant followed up his previous success hy easily winning from Messrs. Curtis, Sanford & Co. the premier award with a really fine stand of shapely specimens. Messrs. D. Prior & Sons were third.

Tea and Noisette varieties were well staged. Mr. G. Prince, Oxford, won first honour in the class for twenty-four distinct single trusses. The hlooms were even, clean, and tastefully set up. Golden Gate, Comtesse de Nadaillac, The Bride, alha rosea, Cleopatra, Innocente Pirola, and Maréchal Niel were noticeable for their excellent quality. Messrs. D. Prior & Sons and Messrs. F. Cant & Co. were second and third respectively. Mr. John Mattock, New Headington, Oxford, won for one dozen single trusses with creditable examples. Messrs. Curtis, Sanford & Co. second; Messrs. G. Cooling & Sons, Bath, third. For twelve blooms, any one H.P., Messrs. Prior & Son, with Lady Mary Fitzwilliam, easily took the winning card. For Mrs. Sharman Crawford Mr. B. Cant was awarded second prize; Messrs. Curtis, Sanford and Co. third.

Interest centred in the amateurs' division in the class for twelve distinct single trusses, the first prize being the "Ramsay" cup, value 10 guineas, given hy Captain Ramsay. Mr. Mease, gardener to Alfred Tate, Esq., Downside, Leatherhead, won easily with heautiful hlooms, including Madame Watteville, Ruhens, Caroline Kuster, Hon. E. Gifford, and Jeanie Dickson. Mr. R. E. West, Reigate, was second. For two dozen blooms, distinct, there was but one entry—Rev. J. H. Pemherton, Havering. This, however, was so thoroughly deserving that the first prize was awarded. Mr. R. E. West, with neat highly coloured blossoms, secured the leading award for eighteen distinct; Mr. F. W. Campion, Reigate, second. Mr. West in the triplets, six varieties, again was distinguished by having the premier award made in his favour. Mr. Campion and the Rev. J. H. Pemherton were equal second.

For the "Prince" Memorial cup there was keen competition, eighteen distinct hlooms heing the number required. A. Hill Gray, Esq., Bath, secured this coveted award with medium size hlooms, clean and good. Mr. Campion was again second. Dr. Seaton, Bitterne, won for six distinct; Mr. West second; Miss G. Carter, Ryde, third.

The competition in the open classes was hrisk. Five staged twelve distinct triplets. Mr. Prince was first with commendahle examples, Mr. B. Cant second. Mr. Prince was also successful for twelve any variety Tea or Noisette, with handsome examples of Princess of Wales.

Garden Roses made a magnificent display. For thirty-six distinct varieties, open to nurserymen, three competed. Messrs. G. Cooling and Sons, Bath, were an easy first with one of the hest exhibits ever seen. Not only were the varieties wisely chosen, hut their arrangement left little to be desired. Messrs. Paul & Son, Cheshunt, were second with a commendable collection, and Mr. C. Turner, Slough, third. For nurserymen another class was made for eighteen bunches. Here the leading

award fell to Messrs. F. Cant & Co. with a grand collection. Mr. J. Mattock was an exceedingly close second.

Amateurs contributed worthily to this part of the exhibition. For eighteen bunches, distinct varieties, Mr. Mease was easily first with a grand display; Mr. A. Chandler, Haslemere, second. Rev. J. H. Pemberton staged a really fine collection in the class for twelve bunches. For six bunches Mr. Campion won easily. Silver medals were awarded for the best Tea or Noisette in both sections, a like award being made for H.P.'s. In the amateurs' section Mr. Mease secured both with superb blooms of Madame de Watteville and Mrs. J. Laing. Mr. Prince with Comtesse de Nadaillac secured a like award for the champion bloom in the Tea or Noisette section.

In conjunction with the N.R.S. the Isle of Wight Rose Society held their annual exhibition, which was most satisfactory to both societies. The blooms staged by exhibitors for this Society's prizes were distinctly creditable. The principal prizewinners were the Rev. Dr. Morgan, Wootton; Rev. J. Spittal, Ryde; Mrs. E. Croft Murray, Ryde; Mrs. J. O. Brook, Ryde; and Lady Mary Gordon, Shorwell. Mrs. S. Marshall, Southsea, took first prize in the three classes devoted to table decorations, epergne of Roses, and a vase or bowl of Roses. In all classes the exhibits possessed much merit. Mr. B. Ladhams, Shirley, Southampton, staged a fine collection of hardy herbaceous plants, as also did Mr. Pritchard, Christchurch.

A few particulars respecting the show held by the National Rose Society at Portsmouth on the 18th inst. may be of interest, as it took place at an earlier date than any previous exhibition of the Society. The total number of blooms staged in competition was 1660, or a smaller number than at any other N.R.S. show yet held. In this calculation no account is taken of the beautiful display of garden Roses at this or previous shows. There were in all thirty-seven exhibitors, who came from the following counties:—Devon, Dorset, Somerset, Hants (including the Isle of Wight), Kent, Surrey, Essex, Bucks, Herts, Oxford, and Cambridge. Owing to the coolness of the previous night and the stormy character of the exhibition day the blooms stood remarkably well, and were, as a rule, as fresh late in the afternoon as when staged in the morning.—E. M., *Berkhamsted*.

RICHMOND.—JUNE 23RD.

ON the above date, in the well-known Old Deer Park, the Richmond Horticultural Society held its annual Show. As was expected, it was not up to several of its predecessors, the competition in some of the classes being very poor. However, quality was not lacking in any particular department, though some of the Roses and cut flowers would have been better away. We were glad to see that the Committee had provided a small tent for the sale of fruits and flowers in aid of the funds of the Gardeners' Royal Benevolent Institution, and we trust it would prove a great success. Where such a course is possible it would be a graceful act on the part of societies to provide similar accommodation to swell the Fund which benefits the needy ones amongst their supporters. Some splendid fruit and flowers were kindly given by Andrew Pears, Esq, J.P., as well as by several exhibitors. We mention below the prizewinners in a few of the classes.

The classes for Roses were not particularly numerous, but the flowers staged were, all things taken into consideration, highly creditable. In the classes for forty-eight and twenty-four trebles, respectively, the premier awards were taken by Mr. B. R. Cant, Colchester, who showed in his well known style. Several of the flowers were of superb quality. Messrs. D. Prior & Son, Colchester, were second in each case. For twelve trebles Messrs. G. Prince, Oxford, B. R. Cant, and D. Prior & Son were the successful competitors in the order named.

Mr. B. R. Cant was a splendid first for twelve of any one H.P. with Mrs. J. Laing; Messrs. D. Prior & Son being second; and Dr. Budd, Bath, third. For twelve Teas, Messrs. D. Prior & Son were first with Souvenir de S. A. Prince; Mr. G. Prince, with Comtesse de Nadaillac in beautiful form, being second.

In the amateurs' class for twenty-four single trusses Dr. Budd was first; P. Burnand, Esq., Reigate, second; and R. E. West, Esq., Reigate, third, each showing some good blooms. Dr. Budd was again first for twelve distinct, followed by Mr. C. Warwick, gardener to J. P. Kitchen, Esq., Hampton; and P. Burnand, Esq. In the remainder of the Rose classes quality was not particularly conspicuous.

Mr. W. Farr, gardener to A. Pears, Esq., Isleworth, staged handsomely in the class for six exotic Ferns. His plants showed splendid culture. Mr. C. Want, gardener to Sir F. Wigan, East Sheen, was second; and Mr. T. Smith, gardener to W. H. Odlin, Esq., Isleworth, third. Mr. Charles Turner, Royal Nurseries, Slough, was the only exhibitor of six Show and Decorative Pelargoniums, receiving the first prize; as also did he for six Fancy Pelargoniums. Mr. G. Watts, gardener to H. Little, Esq., Twickenham, was to the front with six Ivy-leaf varieties and for six Zonals. In each of these classes high quality was very conspicuous.

Mr. H. E. Fordham, the Nurseries, Twickenham, was an easy first for a group of flowering and foliage plants arranged for effect in a space not exceeding 100 square feet. The arrangement of Orchids, Gloxinias, Liliums, Gypsophila, Hydrangeas, and Carnations, with Ferns, Caladiums, and Palms was superb. Mr. Gibson, gardener to E. H. Watts, Esq., Chiswick, was second, and Mr. W. Vause, Leamington, third. For a smaller group Mr. C. Want was first, and Mr. J. Portbury, Putney Heath, second.

The last named exhibitor was to the front with a group of Begonias, followed by Mr. Johnson, gardener to D. H. Scott, Esq., The Old Palace, Richmond. Specimen plants, both flowering and foliage, were well shown by Messrs. W. Vause, C. Want, and W. Farr. Mr. C. Howard, gardener to H. Little, Esq., Twickenham, was first for six Orchids in bloom, with splendid specimens, followed by Mr. W. H. Young, Orchid grower to Sir F. Wigan.

Fruits and vegetables were shown in considerable numbers, and were, as a whole, of excellent quality. In the vegetable section for Messrs. Sutton & Sons' prizes, Messrs. C. J. Waite, J. Gibson, and J. Smith staged in excellent form Peas, Potatoes, and Cauliflowers, each being conspicuously good. Messrs. C. J. Waite and J. Gibson staged with the same splendid quality in Messrs. J. Carter & Co.'s classes. For fruit the most successful contributors were Messrs. W. Ford, gardener to W. H. Ellis, Esq., Hounslow; W. Tidy, gardener to W. D'Arcy, Esq., Stanmore Hall; T. Osman, Chertsey; C. Want; J. Grey, Bodorgan, North Wales; H. Blake, gardener to the Earl of Onslow, Clandon Park, Guildford; G. Parker, Isleworth; J. Goody, Twickenham; and Mr. A. Menton, gardener to J. B. Hilditch, Esq., Richmond. Grapes and Strawberries were particularly well shown.

Miscellaneous exhibits were of excellent quality, and staged in considerable numbers; indeed, had it not been for these the tents would have looked thin in many places. Both nurserymen and private gardeners contributed. Mr. G. Wythes, gardener to Earl Percy, Syon House, Brentford, arranged a semicircular group, including well-grown plants of Liliums, Ixoras, Cattleyas, Odontoglossums, Aërides, Cymbidiums, Hydrangeas, Palms, Caladiums, Crotons, Ferns, and Nepenthes. Mr. W. H. Holah, nurseryman, Richmond, had an effective exhibit of miscellaneous flowering and foliage plants, amongst which half-standard Fuchsias were conspicuous. Messrs. J. Peed & Sons, Norwood, had a charming exhibit of Carnations, and Messrs. W. Fromow & Son, Chiswick, one of such plants as Palms, Asparagus, Crotons, Ferns, Acers, Gloxinias, and Ferns. Messrs. W. Cutbush & Sons, Highgate, sent Malmaison Carnations of good quality, and Mr. H. E. Fordham, Twickenham, had a beautiful group of Gloxinias, amongst which Gypsophila and Ferns were intermingled.

The group of Begonias from Messrs. J. Laing & Sons, Forest Hill, contained plants of excellent quality admirably arranged; and the same may be said of the Malmaison Carnations of Mr. J. F. McLeod, gardener to J. Morgan, Esq., Dover House, Roehampton.

Messrs. J. Carter & Co., High Holborn, had an exhibit very similar to the one staged by them at the Temple Show, and it again attracted attention. Mr. W. Thompson, nurseryman, Richmond, sent a number of plants, including Liliums, Spiræas, Caladiums, Crotons, and Ferns; while Mr. Pentrey, gardener to A. J. Howard, Esq., Isleworth, sent Carnations. The Agri-Horticultural Association sent an exhibit of vegetables and plants.

CRYSTAL PALACE.—JUNE 23RD AND 24TH.

IN commemoration of the great event of the week provision was made by the directors of the Crystal Palace for a Victorian era flower show in their noble building on the dates above named. A sum of £350 was placed at the disposal of the Judges to allocate in twenty-six classes, subject to the exhibits being meritorious. Some of the prizes were very good indeed, and none of them such as to discourage competition. It was not through any shortcomings in that direction that so many of the classes were not filled nor the space set apart occupied, but simply because the show could only under the circumstances be little more than local.

When this show was announced it was felt by many persons to be a bold venture, considering the great strain imposed on so many gardeners and nurserymen in preparation for the rejoicings of the day preceding, yet the Orchids exhibited found their way from the north of London, Pelargoniums and Roses from Slough, a grand assortment of Coniferæ from the Coombe Wood Nurseries of Messrs. J. Veitch & Sons, Ltd., Cannas from Cheshunt and Swanley, and the most meritorious cut flowers of hardy herbaceous plants from Colchester.

To take, as indicative of the slackness, the first two classes in the schedule, though we find six prizes offered for tuberous Begonias, the highest £12 and the aggregate amount £29, only a solitary collection was staged—an imposing one, it is true, and containing splendid varieties, but there was nothing to which the five other prizes could be awarded. Yet though there was such a lack of competition, with no entries at all in some of the classes, and practically illimitable space, still the tables of cut flowers were so densely packed and crowded as to produce very much of a jumble.

As it would be of no particular interest to go through the schedule and enumerate the prizewinners in the stereotyped way, it must suffice to say that Messrs. John Peed & Sons were the only exhibitors of Caladiums and Gloxinias, securing first prizes. W. C. Walker, Esq. (Mr. G. Cragg, gardener), Winchmore Hill, N., the only amateur exhibitor of Orchids, a charming first prize collection; Messrs. Lewis & Co., Southgate, being equally alone in the nurserymen's class with a good first prize group. Mr. Turner was also alone in his glory with Show and Fancy Pelargoniums and Roses, for which he was adjudged the prizes.

In the hardy herbaceous cut flower classes Messrs. Wallace & Co. Colchester, outdistanced all competitors with an extremely beautiful collection of Liliums, Spanish Irises, and translucent Mariposa Lilies (Calochorti), than which it is difficult to imagine any flowers more beautiful in vases. Messrs. Paul & Son, Cheshunt, had the first prize for Cannas, a dwarf bright group; and Messrs. H. Cannell & Sons a

silver medal for a splendid collection; Mr. W. Howe, gardener to Henry Tate, Esq., being adjudged the prizes for Crotons and Ferns.

There were several non-competitive exhibits, notably Messrs. Veitch and Sons' Conifers, one of the finest collections of choice and beautiful kinds ever seen; and quite the finest group of Carnations of the season from Martin R. Smith, Esq. (Mr. C. Blick, gardener), including beautiful new varieties. These two exhibits were the features of the show, and gold medals were worthily awarded for them.

Silver medals were recommended to Mr. R. Gülzow, Melbourne Nurseries, Bexley Heath, for group of Orchids; Messrs. G. Jackman and Son, The Nurseries, Woking, for group of Clematis; Messrs. W. Fromow and Sons, Sutton Court Nurseries, Chiswick, for group of Japanese Maples; Messrs. Young & Co., The Nurseries, Stevenage, for hardy flowers; Mrs. M. Hodgkins, 35, Woodland Road, Upper Norwood, for table decorations; and Mr. Foster, Brockhampton Nurseries, Havant, for Sweet Peas.

Mr. G. Castelton, the new Garden Superintendent, who was most attentive and courteous to all, has thus had a comparatively small show to begin with, because of the trying and entirely abnormal circumstances under which it was held; but there seems no reason why it should not grow into a large one if it should be decided to hold shows in honour of "Victoria Day" in future years.

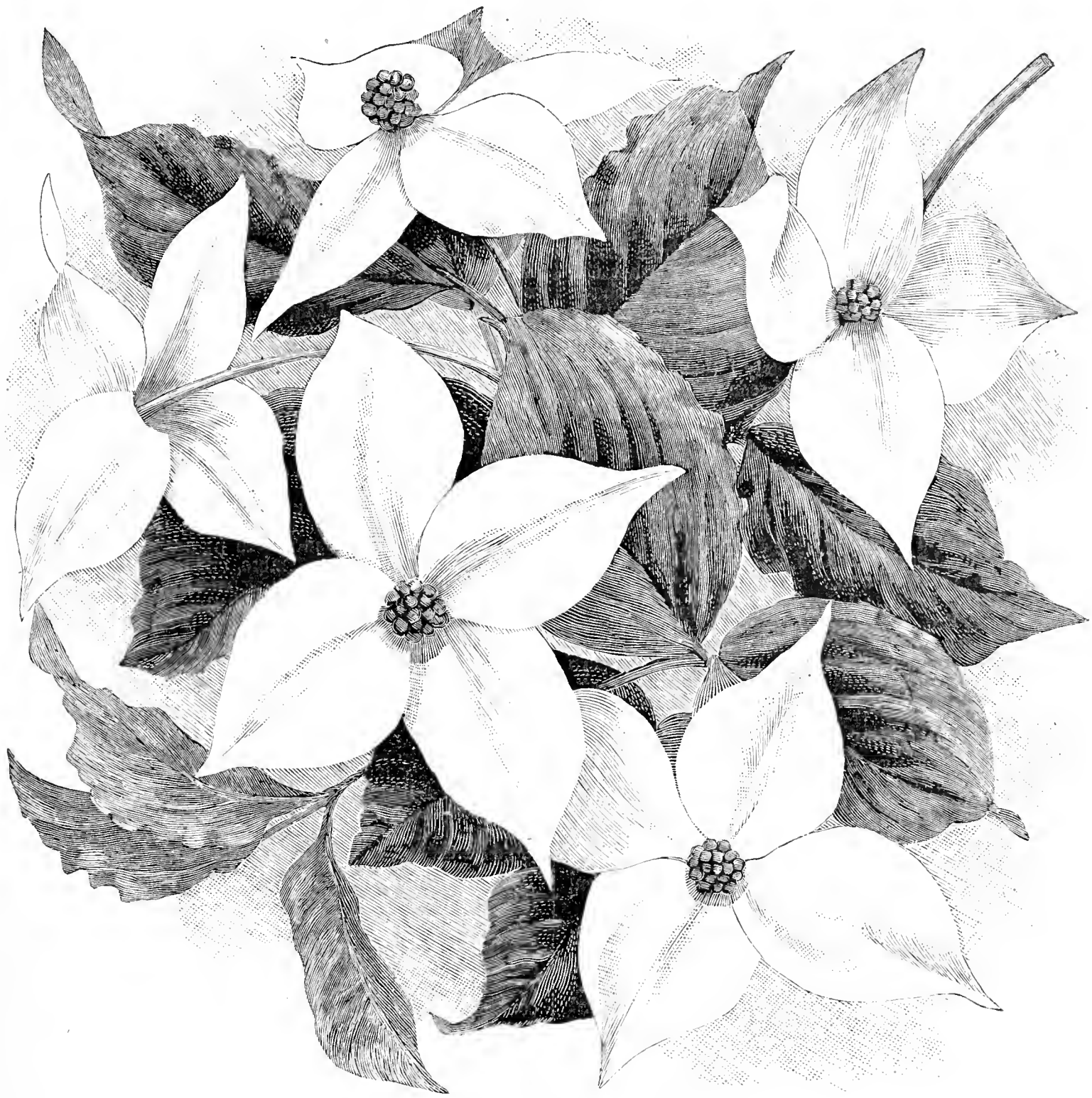

FIG. 2.—CORNUS KOUSIA (*page* 7).

COLCHESTER.—JUNE 24TH.

THE summer show of the Colchester Rose and Horticultural Society was held in the grounds of Mr. C. E. Green, East Hill House. There was a fair amount of competition, and the quality of the blooms staged was good, considering the season. For thirty-six Mr. B. R. Cant was first, his blooms being young and strong, and able to stand the great heat which prevailed. Among his best were La France, Alphonse Soupert, Maréchal Niel, Madame de Watteville, Ernest Metz (finely coloured), and Jean Ducher. Messrs. Harkness were second, Lady Mary Fitzwilliam and White Lady being perhaps the best. Messrs. Prior were third; a very fine specimen of Mrs. John Laing (which easily took the medal over all other Roses in this division), Xavier Olibo, and S. M. Rodocanachi being the best in their box.

In twelve Teas (nurserymen) Mr. B. R. Cant was again first, showing Madame Cusin, Cleopatra, and Anna Olivier well; Messrs. Prince second, with Anna Olivier, Comtesse de Nadaillac, and Souvenir d'un Ami; and Messrs. Prior third, showing Maman Cochet and Marie van Houtte in good condition.

In the amateur classes Mr. R. E. West of Reigate was first for twenty-four, showing a fair specimen of Margaret Dickson; Mr. J. Gurney Fowler second, and Mr. P. Burnand of Reigate third. The standard throughout here was very low. For the Mayor's prize, twelve Roses, Mr. Orpen was first, Kaiserin Augusta Victoria and Madame Hoste being the most noticeable in his stand; Rev. J. H. Pemberton second, winning the medal with a fine example of Caroline Testout; and Mr. Burnand third.

For six Roses of a sort Mr. H. P. Landon was first with Madame Hoste, Rev. A. C. Johnson second with Gustave Piganeau, and Rev. A. Foster-Melliar third with Lady Mary Fitzwilliam. For twelve Teas Mr. Orpen was first, Mr. Foster-Melliar second, and Mr. Berners third, the standard of excellence ruling low. In twelve Roses Mr. A. C. Johnson was first, showing a nice specimen of Gustave Piganeau, and Mr. Page Roberts second. In six Teas Mr. Page Roberts was first, gaining the medal with a grandly shaped specimen of Anna Olivier, without, however, a trace of terra cotta tint, and easily mistakeable for Madame Hoste; H. P. Landon second, and Mr. Johnson third.

In garden Roses Messrs. Prior were first in the nurserymen's class, and Mr. A. C. Green of Great Horkesley second. The latter being apparently a new Rose professional in the Colchester district, it seems as

if the trade were booming, but all were sorry indeed to hear that Mr. Wm. Prior was in bad health, for he is deservedly popular amongst the Rose growing fraternity.

Mr. Orpen was first in the amateurs' class for garden Roses, many well preserved single Roses being a feature in his stand, the Mayor (Mr. H. Egerton Green) second, and Mr. Pemberton third. Mr. Orpen was also first for a collection of single Roses, and it was again remarkable how well the petals stood the heat.

In herbaceous flowers Messrs. Harkness were first and Mr. Jacobi of Ipswich second in the nurserymen's class, Lady North first and Mr. Orpen second among amateurs. Messrs. Wallace showed some samples of their splendid Calochorti and Lilies, a large-flowered yellow Calochortus, called Clavatus, being a new species.

Colchester is now also famous for Asparagus, and great interest was taken in the competition for a cup offered by Mr. Monro of Covent Garden. This was won by Mr. R. T. Daniell of Donyland, and I willingly lingered to hear the comments of experts upon these wonderful great hunches, where (to my ignorant eyes) the premium is given to the handle, and the business end is reduced to small proportions. Two or three men told me the white was the best part; but when asked if they began to eat at the butt end, they rather climbed down from that assertion. Another man said you could eat as far as the pink colour went, and no opinion seemed to be so unpopular as my own, that I did not want to see any colour but green in my Asparagus.

About two o'clock, when the rosarian company had just arrived at the grounds of the noted trade growers, a very heavy thunderstorm, or rather, as it seemed, two or three meeting in one, broke over Colchester. Myland Church spire, within 200 or 300 yards of where several of us were sitting in Mr. B. R. Cant's house, was ripped open from nearly the top to the bottom. Knowing from previous experience what the Rose fields would be like after such a tremendous rain, I rather chose, when the storm was over, to investigate the vagaries of the lightning stroke which, in this case, seemed strangely to have neglected metal in its downward course, and deliberately (what a word for lightning!) chosen stone and wood in perference. Ultimately I thought I would do down and see what the Roses looked like, and soon returned with, as one of the company remarked, enough of the famous soil on my boots to grow a good Marie Baumann.—W. R. RAILLEM.

WESTMINSTER.—JUNE 29TH.

THIS Show was held in the Drill Hall at the usual fortnightly meeting, on the above date. There was competition in each of the classes, and in some of the boxes flowers of superb quality were noticed. With commendable and exceptional generosity C. J. Grahame, Esq., Leatherhead, gave £10 towards the prizes offered.

In the classes for twenty-four distinct single trusses, Mr. C. J. Salter, gardener to T. B. Haywood, Esq., Woodhatch Lodge, Reigate, was placed first. His blooms were even, some being of good quality, while others were weak. C. J. Grahame, Esq., in the second position, had a superb stand, containing only one or two weak blooms, with about a dozen perfect ones. The pointing in these two exhibits must have been very close. The Rev. J. H. Pemberton, Havering-atte-Bower, was third. There were five competitors in this class.

Three competitors brought twelve distinct single trusses. O. G. Orpen, Esq., Hillside, West Bergholt, Colchester, was first with Marquis Litta, Horace Vernet, Her Majesty, Gustave Piganeau, Susanne Marie Rodocanachi, Captain Haywood, Madame Eugéne Verdier, K. A. Victoria, Mrs. W. J. Grant, Fisher Holmes, Madame Gabriel Luizet, and Marie Verdier. The Rev. A. Foster-Melliar, Sproughton Rectory, Ipswich, was a fair second; and R. H. Langton, Esq., Raymead, Hendon, third.

For six distinct single trusses, G. W. Cook, Esq., Torrington Park, N., was first; the Rev. A. Page Roberts, Scole, Norfolk, second; and J. Christian, Esq., 3, Norman Villas, Highgate, third. C. J. Grahame, Esq., for nine single trusses, one variety, sent Kaiserin Augusta Victoria in superb form, and received the premier award, followed by Mr. C. J. Salter with Mrs. J. Laing, and the Rev. A. Page Roberts with Madame Gabriel Luizet. Kaiserin Augusta Victoria won for O. G. Orpen, Esq., the first prize for six of one variety. R. H. Langton, Esq., with La France was second; and G. W. Cook, Esq., with Mrs. J. Laing, third.

In the class for twenty-four Teas, distinct, there were four competitors, of whom O. G. Orpen, Esq., was a good first. His flowers were of fine shape, clean, and splendidly coloured. Hardly a weak bloom was to be seen in the box. The second position was secured by C. J. Grahame, Esq.; and the third by Mr. C. J. Salter.

The Rev. Hugh A. Berners, Harkstead Rectory, Ipswich, was first for twelve Teas, with Medea, Catherine Mermet, Ernest Metz, Souvenir de S. A. Prince, Madame Hoste, Edith Gifford, Cleopatra, Comtesse de Nadaillac, Jean Ducher, Anna Ollivier, and The Bride. The Rev. A. Foster-Melliar was a capital second, and the Rev. J. H. Pemberton third.

For six Teas, distinct, the Rev. A. Page Roberts was first, and R. H. Langton, Esq., second. For nine single trusses of one variety C. J. Grahame, Esq., was a decided first, with beautifully coloured examples of Madame Cusin, O. G. Orpen, Esq., with Anna Ollivier was second, and H. P. Machin, Esq., third. R. H. Langton, Esq., with the Hon. Edith Gifford, went to the front for six Teas of one variety, followed by the Rev. A. Foster-Melliar with Souvenir d'Elise, and the Rev. H. A. Berners with Anna Ollivier.

SCHOOL GARDENS.

I WAS pleased to see "A. D.'s" remarks under the above heading on page 511 in your issue of the 10th ult., and will give you an opposite state of things. Here in Birkenhead, a town with over 120,000 inhabitants (about half of whom belong to the labouring classes), I have provided four large pasture fields for allotments, each of which is situated in a different part of the town, and in close proximity to Board and other public schools. The land has been measured, pegged out for allotments, and enclosed with suitable fencing, also gates provided with locks and keys, water service laid down, good cartways and footwalks made, and whatever was necessary for the security and convenience of the allotment holders has been done.

Not a single allotment has been applied for, either by the School Board or the managers of any of the elementary schools, for the purpose of instructing the boys in "Cottage Gardening," but the allotments are freely taken up artisans and others, who are in every way satisfied with their plots.

There are generally two sides to a question, and your readers can now look at this question from both sides. Perhaps "A. D." will tell me where I may get the information respecting the grants he speaks of to schools giving the boys instruction in "Cottage Gardening;" then I will bring the question before the notice of the School Board and managers in Birkenhead, and get their views on the question, and at a future time let you know the results.—T. D. S.

CARNATIONS AT ICKWORTH.

AT Ickworth Park, Bury St. Edmunds, there is just now a very fine display of Carnations, many new varieties and all the cream of the older sorts being well represented. All are conspicuous for fine robust health and freedom from splitting of the calyx, but the newer ones of Mr. Martin Smith's raising stand out as a distinct advance on the older varieties.

A lovely flaked yellow is Mrs. Robert Sydenham, the blossoms large and full, of grand outline and clear cut segments, such as Carnation lovers delight in. Gift has large flowers with a yellow ground, and flaked with light crimson, while a beautiful soft scarlet self is named Isle. Miss Jekyll is an advance on Germania, the habit being all that could be desired, and of splendid constitution.

Cardinal Wolsey is like a greatly improved Atalanta, but judging by the plants not a very good breeder. Mrs. Ivo Bligh and Elsie are two lovely selfs of a delicate salmon rose, the latter the deeper coloured of the two, while blossoms of the purest white are found in the chaste varieties Deal, Mrs. Eric Hambro, and the older Niphetos. Mayma is a distinct fawn self, Vashti a splendid yellow and crimson flake, while Mephisto is of deeper colour and better form than the now well known Uriah Pike. The plants are one and all in excellent order, full of flower, and by their healthy appearance and tasteful arrangement reflect great credit on Mr. K. Coster, the energetic gardener.—DIANTHUS.

BRIEF NOTES ON ALPINE FLOWERS.

(*Continued from page* 439.)

LINUM ALPINUM.

THIS neat little alpine plant, although both pretty and not at all an expensive flower to purchase, is not very often seen; it is still more seldom seen in bloom, which is unfortunate, as its bright blue flowers, large for the size of the plant, are very pleasing. The foliage is also very attractive, so that a plant in full bloom is generally admired. This Alpine Flax appears to like full exposure to the sun, with a good supply of moisture at the roots in summer, but to be comparatively dry in winter. The two last requirements are not easily secured in the same position, and I find it best to plant in gritty soil on a level terrace of a sunny rockery, and to give water rather freely in spring and summer. It seems hardy enough, but its shy blooming qualities in some gardens counterbalance to a great extent its other qualifications.

ARMERIA LAUCHEANA.

This is apparently only a variety of the common Sea Pink or Thrift, which adorns with its thousands of pink blooms many of our sea coasts. It differs from the ordinary form by reason of its dwarfer habit and its deep colouration. No better variety could be selected for contrast with the white variety of A. vulgaris known as alba. If planted on the rockery it is well suited to a variety of positions. On flat terraces it does well, but may also be used for covering up joints between the stones. It is of a deep—almost crimson—colour, and looks well when covered with bloom in June. In this garden it flowers more freely than the white form of the ordinary Thrift. Armeria Laucheana is not difficult to procure from nurseries, and is moderately priced in the catalogues. It is readily increased by division.

ONOSMA ECHIOIDES.

This favourite plant is more commonly known as O. tauricum, a name not likely to be readily superseded by the older name of Linnæus. It is a little difficult to understand why a considerable number seem to fail with it in face of the general advice to give a slight protection from excessive rains in winter. However this may be, many complain of losing it, possibly owing to the want of the precaution mentioned. In some gardens where it has a dry position, sheltered from excessive rains, the safeguard of overhead covering is not even necessary, but nearly all would be wise to be at the little trouble required rather than

run the risk of losing a pretty plant. The rough leaves hold moisture long, and sleet and snow appear very injurious to the plant. Even if shabby looking in early spring it often recovers, and those who think it is beyond recovery may find a week or two of fine weather make a great difference in the look of their plants.

Those who are acquainted with its drooping, almond scented yellow blooms (fig. 3), so distinct from most other flowers of the season by reason of their shape or colour, will not readily be without it in their gardens. A dry soil with full exposure to the sun is to be preferred. It may be increased by cuttings, which root more readily if taken off with a heel of old wood and put in pots of light soil surfaced with sand and placed in a close frame until rooted.

CASSINIA FULVIDA.

The inclusion of shrubs suitable for the rock garden is quite within the scope of these articles, so that no apology is required for speaking of this very distinct-looking plant of shrubby nature. It is occasionally seen under the name of Diplopappus chrysophyllus, but the name at the head of this note is the correct one. If left to itself it becomes rather too large for many rock gardens, but is so amenable to pruning operations that this can hardly be called a fault. It is so readily kept in bounds that a bush several years old may be kept under 2 feet high. It looks very pleasing with its light yellow branches, the same colour also distinguishing the under surface of the leaves, the upper being a dark green. The unopened buds are also yellowish, but the small flowers in flat heads are white. I grow it for the sake of its general aspect, and not for its flowers.

I am not quite certain of its native habitat, but think it comes from New Zealand. It appears hardy in many gardens in England and Scotland, and here has never suffered in my garden from the most severe winters we have had for several years. It is easily propagated by cuttings taken off with a heel and placed in pots.—ALPINUS.

(To be continued.)

GRAPE APPLEY TOWERS.

NEW varieties of Grapes placed in commerce are few as compared with other kinds of fruit, so that when a first-class Grape like the above does appear I am surprised more is not heard of it. In the variety Appley Towers we have a Grape good for market and exhibition. It was awarded, I believe, a first-class certificate by Royal Horticultural Society, and sent out in the spring of 1894 with Lady Hutt, a white Grape of good flavour, but small in bunch and berry.

Appley Towers is a Grape of noble appearance; bunch large, sometimes shouldered, especially on canes which have been inarched on some other variety. This year bunches on a Vine planted in 1894 appear as if they will weigh between 3 lbs. and 4 lbs. each; others inarched two years ago on Black Hamburgh, Golden Queen, and Black Prince are equally fine, especially on the latter. The berries are large, the size of Gros Colman; oval in shape, half way between Madresfield Court and Gros Maroc, not so round as the latter, and borne on stiff footstalks. The colour is an intense black, with a fine grey bloom when finished, like Black Prince.

The fruit hangs well, the berries never losing colour; bunches coloured now (June 20th) will hang till December, but the Grapes are in the best during late autumn. Early in the year they become gritty, but the flavour is very good. Like Gros Colman, Appley Towers will finish a heavy crop of fruit well, so ought to make a good market Grape. The only objection to this is the Vine being such a grower as to require a wide space between the rods, 4½ feet being little enough. Like Alicante in a young stage, the laterals must be tied down carefully, as they are very brittle and easily rolled out of the sockets.—W. T.

THE YOUNG GARDENERS' DOMAIN.

CUCUMBER CULTURE.

ALTHOUGH the Cucumber is classed as a vegetable, it invariably comes under the fruit foreman's charge in large establishments. It is grown in very large quantities in market nurseries, in fact in some of them the Cucumber season is the market grower's harvest. Span-roofed houses are preferred for Cucumbers, for though they do equally well in lean-to houses and frames, the same number of plants cannot be grown in them as in a span-roofed house or pit of equal length and width.

The seed is best sown singly in 3-inch pots, at different periods, according to the time required for the plants to bear fruit. Cover the pots with a piece of glass or paper, and place in a temperature about 75°. When the seedlings appear remove the covering, and afford all necessary light for keeping them sturdy.

The next thing will be to make a hotbed of litter and leaves, treading it firmly. A stake or two may be placed in the bed so that you can tell when the highest temperature is reached. When this point has been passed, and the bed begun to cool down, a layer of turves may be placed on the bed, and upon these small mounds 3 or 4 feet apart. The compost for these mounds should be turfy loam, broken into small lumps, with a little dried cow manure or spent Mushroom bed material added.

When the temperature of the bed has cooled sufficiently to be safe the plants are inserted, and shaded for a few days. Fix a wire trellis to the roof, and train the plants on the top side. By this method the shoots do not require so much tying, and are not dragged out of position by the weight of the fruit. Place the trellis far enough from the glass to prevent the leaves coming in contact with it.

Shading.—Some growers do not shade their plants, but allow them full exposure to the sun from the time they are planted, whilst others shade them rather heavily. I have seen excellent crops of Cucumbers under both methods; but the first is rather dangerous, for if the surface soil, owing to the sun shining on it, becomes dry the plants will flag and the leaves scorch. With the heavy shading system the plants are too long before they fruit, and much time is thus wasted. The practice that I have seen answer the best is to shade the plants very lightly and admit no air, unless on a very hot day, then only a "crack." By this method two crops can be had in the time that one can be obtained by the heavy shading and full ventilating system.

Watering and Syringing.—During the spring and summer months Cucumbers require copious supplies of water, both at the roots and in the atmosphere. Occasional applications of liquid manure are beneficial when the plants are bearing fruit. Some growers add a little soot water, to give the foliage a rich green appearance, but this is not a wise practice, as it is apt to cause the Cucumbers to be bitter. Syringe the plants twice daily—viz, morning and afternoon—getting well under the leaves, so that filth may be kept down. Syringing must be done early in the morning, so that the leaves get dry before the sun has power

FIG. 3.—ONOSMA TAURICUM.

upon them, or it will cause them to scorch. Too dry an atmosphere often causes Cucumbers to come crooked, and to prevent this the paths of the house are damped several times during the day.—ELVEDEN.

(To be continued.)

THE MEANS AND MODES OF PROPAGATING PLANTS.

IN a state of nature all plants, be they what they may, are propagated from seed, and most seeds are covered with a hard shell or envelope, which protects them from external injury, and within that envelope lies the embryo plant. All seeds in this latent state contain an organ or germ, which under favourable circumstances shoots upwards—the plumule—and becomes the stem of the plant; another, called the radicle, seeks its place in the soil, and becomes the root. The seed lobes yield nourishment to the young plant in its first stages of growth.

Moisture, heat, and air are necessary conditions for the development of all growth from seeds, and most of them require in addition concealment from the light. These conditions are found in the open texture of well-pulverised garden soil, through which water percolates freely and air follows, each yielding their quota of oxygen, hydrogen, or carbon in a gaseous state for the support of the plant. Leaves are the first outward sign of germination, and are next to the roots the most important organs of a plant. The seed leaves, as the lobes which first appear above the ground are termed, are of vital importance, and if destroyed prematurely the young plant rarely recovers.

Germination is the natural process by which the embryo of the seed, placed in favourable circumstances, throws off its shell or covering, and in course of time becomes a vegetable, resembling that from which the

seed was obtained. From the time that the acorn of the Oak is placed in circumstances favourable to its germination it absorbs moisture and swells, the root or radicle is elongated, and the shell or envelope is broken. The root issues by the fissure, and directs itself downwards into the earth ; the plumule erects itself, and becomes the stem ; while the cotyledons furnish food to the young plant until the first leaves develop, and the spongioles of the roots are capable of receiving nourishment from the earth. In plants with a soft covering, as the Bean, the radicle is directed to the outside of the seed ; it is the rudiment of the root, and this is the first part which develops itself in germinating. The plumule, on the contrary, ascends towards the centre of the grain and becomes the stem, while the two cotyledons remain in the soil between the root and stem, yielding nourishment to the young plant until the root can perform that office.

Much time is lost by following this mode of propagation, except in the case of annuals. The seed does not always produce a plant identical with the parent. No true double flower produces seeds, and several herbaceous plants with which our gardens are furnished fail to ripen their seeds in our climate. The observation of this led to other methods of multiplying, for besides the roots, properly so called, which attach themselves to the soil and draw from it the principal nourishment of the plant, each branch conceals under its outward covering a bundle of tissue which, under favourable circumstances, develops roots, and becomes the basis of an independent plant identical with that from which it sprang. Many plants have also a crown with buds or eyes, each capable of propagating its species. Every plant with roots of this description may be divided into as many portions as there are eyes, taking care that a few fibres are attached to the root, and each bud thus secured will become an independent plant.—C. W. M.

(To be continued.)

Practice with Science.

Lovers of flowering plants in perusing treatises on their cultivation may frequently come upon a caution to keep the structures in which newly potted plants, or freshly inserted cuttings and offsets, are placed closed for a period. Here we have a subject for a logician. That scientific principles are the foundation of practice we shall try to prove.

Roots are organs, sensitive to heat, cold, touch, exposure, excess or sparseness of supply of building matter, feeling acutely the most delicate help or hindrance to their work. We are convinced of this in considering that by negligence in over or under-watering, feeding, potting, or thoughtlessness in even *one* cultural item we irretrievably lose beauty, and retain only objects for pity.

The sensitiveness to heat by the renewal in spring of growth in tap roots, tubers, rhizomes—which are virtually ennobled roots—demonstrates the fact with these forms. Does not the balmy sweet air of spring, which we then admit to our houses, dispel the drowsy artificially heated atmosphere, and itself seethe around the pots and through the balls of soil, stimulating with new vigour the sleepy plants? When solar heat becomes stronger, growth gyrates almost eagerly, showing the appreciation for heat by the roots and co-builders. Regarding chills and exposure to roots we can comprehend how the functions are hindered, probably destroyed. Robe a man in cold wet garments, and if not actively employed what result do we expect? Debility of body. The food supply and circulation by roots to the stems and leaves is checked by suddenly giving cold water, causing languid and erratic growth. Dryness implies analogous results.

Overfeeding or loading a soil too heavily with nutritive material "sickens" it. It would little matter if indeed it were gorged, provided no roots were there to be "killed by kindness." This is the great evil in overpotting or manuring. The absorption of matter takes place by the process of "osmosis"—viz., the watery fluid with its elements by affinity for the thicker cell contents permeates the outer membrane and cell walls of the radicle or root tip, to act with this cell matter. Now, according to this hypothesis, the roots are unable to stop the supply, even though it be in excess. The flow continues and the cells flush full, are, in fact, choked.

The whole system of the plant is overloaded, like a person who has eaten too well, and whose heart flags under the pressure it must bear. So likewise the plant becomes insipid and flaccid. It can neither exhale or inhale freely, if at all, because of turgidity in the cells, and becomes disagreeably burdened. The chlorophyll and other necessary matter seems rarified, possibly kept too diluted, and being supplied with too acidulous "sap," through the soil being purely acidulous and non-alkaline, it may be poisoned ; and so the plant if uncorrected dies an unnatural death. Summing up, then, like any jury, the conclusions we have drawn, we see how very careful we must be in growing plants artificially to grow them well.

It is to save the strain of a severe check to growth that we keep our structures closed after potting. We allow the leaves and their helpers to work easier while working harder than ordinarily. In the warm air, kept comparatively stationary, the stomates open wide, and breathe deeper and quicker, absorbing liquid and gaseous aids, and freeing the unneeded elements. Rapid evaporation, too, is stopped ; a quiet tone of vitality is insured, and time for the roots to recover and penetrate anew. This with cuttings and offsets is principally applicable, though the other detrimental causes reach them likewise. This article has been written for criticism by "Domain" writers, it having occurred to me how often we do things in practice without reasoning why, or whether it may be proper. If my reasoning be correct it proves the value of science in our practice.—A Young Scot.

HARDY FRUIT GARDEN.

Summer Pruning Fruit Trees.—The summer pruning of restricted trees and bushes ought to be commenced, carrying on the operation at intervals. This method of gradual removal is rational, and guards against the possibility of serious checks being given. Any undesirable shoots, such as those ill placed or weakly, may be cut out entirely, leaving the best and most foreright in position. If the shoots are crowded thin them out. A rank growth of shoots, crowding one into the other, compete for the light available, with the result that many of them grow to an inordinate length for the purpose of reaching the light. Likewise, when undue shade predominates, it proves inimical to those shorter growths originating from the base, and showing a tendency to become fruit buds. Also, a fair share of light and air is prevented reaching the fruit, which retards its development.

Judicious summer pruning, or shortening the longest shoots to a limited number of fully formed leaves at the base, gives at once a check to exuberance of growth, and directs the energies of the trees into the buds and leaves remaining.

Plums and Sweet Cherries.—These fruits are chiefly confined to the restricted form when grown on walls. It is then that summer pruning is most required, so that growths which cannot be laid in are prevented extending and robbing the buds at the base of needful support. The summer shoots are usually pinched when the third largest leaf from the base is fully developed in size. Crowded shoots may be cut out entirely. Further pinching becomes necessary, and should be carried out, when fresh growths have started from the upper bud or buds of the shortened shoots. This ought not to be done, however, before the first formed leaf has attained to a fair size. Subsequent sub-lateral growths treat in the same manner—that is, pinching to one leaf as formed.

Some modification of this system of close pinching can be adopted, chiefly in cases where there are vacant places that require to be furnished. For this purpose select well-placed shoots of vigorous, but not sappy development. Train them in at full length. In the course of the season they, with the exposure to light and air, ripen thoroughly. The following season fruit buds are formed, and probably some of them may be sufficiently matured this season to fruit next. In any case, however, they ought to fruit freely the third season. This method of management is mainly supplemental to a supply of main branches furnished with spurs. The chief object should be to avoid overcrowding, or the bearing capacity of the trees may be jeopardised.

Morello Cherries.—The treatment accorded to these is different. The trees bear the best crops on the one-year-old wood ; therefore, it is best to train in a fair number situated in good positions all over the trees. These shoots require no shortening, simply securing them in the direction wanted. The superfluous shoots—useless, weak, or exhausted portions—must be pruned out as occasion offers. Finally the bearing shoots of the present season should be removed, and the reserved growths for the following year secured in their place.

In some cases Morello Cherries are grown on more restricted forms, the trees having main branches about a foot apart. Spurs have been formed by pinching and stopping foreright and side shoots. Summer pruning must be resorted to with these, stopping the growths it is necessary to restrict at the third leaf, subsequent extensions from the shortened shoot at the first leaf. The buds below will become well nourished, and from them the fruit is produced the next season. Prolific results, however, do not follow this method to the same extent as the former.

Gooseberries.—When Gooseberry bushes are confined to several main branches, and these only allowed to bear the fruit, summer pruning of the side shoots is essential in order to admit light and air to the basal leaves, which perform the functions of nourishing the buds. Shorten these shoots to two pairs of leaves. The leading shoot on each branch may remain without stopping, especially if extension is required.

The more general system of treatment adopted with Gooseberries is simply to thin out the bushes, allowing them to carry plenty of young, well-ripened shoots, which bear freely. This thinning and regulating may be carried out during summer immediately the bushes are cleared of fruit. Attend well to the lower parts and the centres of the bushes, also clear away sappy growths and suckers from the base. The free admission of light and air for the ripening of the wood must be the main point, pruning more fully in winter.

Red and White Currants.—Shorten the side growths from the main branches to the second pair of leaves from the base. The summer pruning of Currants effects two purposes. The fruit is assisted in ripening by the free circulation of air and more exposure to light, and the concentration of vigour in the basal buds.

Black Currants.—Bearing almost exclusively on young wood, summer pruning is only necessary in so far as thinning out crowded shoots and old growths to make room for strong and young wood.

FRUIT FORCING.

Vines.—*Early Vines.*—When the fruit has been cut, syringe the foliage well in order to preserve it as long as possible in a healthy state, for after the leaves fall early second growth not unfrequently sets in when they ought to be resting. A moderate extension of the laterals will usually prevent premature ripening of the foliage, and will not do any harm, but irregularities of growth, and particularly gross ones, should be checked by pinching or be entirely removed. Admit air to the fullest possible extent, and maintain moderate moisture in the border, particularly at the surface, so as to keep the roots there instead of allowing it to become dry, and so causing them to descend in quest of moisture. Weakly Vines may have liquid manure occasionally, which will help them to retain the foliage, and assist in plumping the buds and storing nutritive matter in the adjacent wood.

Grapes Ripening —Afford plenty of air directly the Grapes begin colouring, with a little fire heat to insure a circulation of air constantly and prevent the deposition of moisture on the berries during the night and in dull periods, which is one of the chief causes of "spot." Maintain, however, a fair amount of atmospheric moisture to insure the proper swelling of the berries and the preservation of the foliage in health. Allow the temperature to fall to 65° at night, otherwise securing a temperature by artificial means of 70° to 75°, and 80° to 85° through the day for Black Hamburghs and similar varieties with sun heat. Muscats should have a night temperature of 65° to 70°, 75° to 80° by day from fire heat, and 85° to 90° with sun heat. Supply water or liquid manure thoroughly to the inside borders, enough to reach the drainage, and a light mulching will keep the surface moist. Outside borders must be watered if dry weather prevail, always giving enough water or liquid manure to moisten the soil down to the drainage.

Grapes Stoning.—Ventilate early, so as to allow the moisture to evaporate and the atmosphere to gradually warm in order to avoid scorching, and a gentle warmth in the pipes with a little air constantly is the best safeguard against scalding of the berries. This, with free ventilation by day, and not closing early at this critical period, will usually ward off the moisture that heated on the berries causes them to scorch. As the liability to scald does not extend over a period of more than a fortnight or three weeks, give particular attention in the late stages of stoning to the ventilation. In bright weather succeeding a dull and cold period there is most danger of scorching, and with the modern system of large panes of glass there is absolute necessity at such times for a slight shade from bright sun, especially for Muscat of Alexandria. A double thickness of herring nets over the roof-lights is very beneficial, and affords all the shade required.

Vines Swelling their Crops.—A genial condition of the atmosphere, secured by gentle warmth in the hot-water pipes and sprinkling the paths and borders in the morning and afternoon, particularly the latter at closing time, is essential for the swelling of the berries and health of the foliage. The border being mulched with a little short, rather lumpy stable manure, about an inch thickness sufficing, and this sprinkled occasionally, will give off some ammonia to the atmosphere, and nutriment be washed down to the roots at the waterings. If a little sweetened material be added from time to time, the supply of ammonia vapour and of liquid nourishment will be regular and never so excessive as to injure the foliage. If not convenient to use stable manure the neat drainings of stables or cow houses may be diluted with six times the bulk of water, and this used for sprinkling at closing time, about 3 gallons sufficing for a square rod of border. Avoid a close atmosphere, particularly in dull weather. A little ventilation at the top of the house constantly will make all safe, but it is desirable to close the house in the afternoon, damping well at the same time, allowing the temperature to rise to 90° or 95°, and after six o'clock provide a little ventilation at the top of the house, as it will prevent excessive deposition of moisture through the night. This will to some extent safeguard the foliage against scorching should the sun act powerfully upon the house before the ventilation is increased, which it ought to be as soon as the sun reaches the structure; indeed, it is the best preventive of scorching and scalding. A night temperature of 65°, and a genial warmth of 70° to 75° by day, will be sufficient by artificial means to keep the Grapes steadily progressing in dull weather. Increase the ventilation from 70° to 75°, allowing it to advance to 80° or 85°, and close so as to raise it to 90° or 95°. Permit a steady growth in the laterals, but never allow large extensions which must afterwards be removed or considerably reduced. Do not allow the laterals to interfere with the principal leaves, for upon the free access of light and air depends their elaborating power, and the more these assimilate the crude material the healthier the Vines are, and the more food stored in the Vines for the succeeding crop. It is also essential to the formation of the coming Grapes in embryo in the buds.

Supply sufficient waterings or liquid manure as required, or afford surface dressings, and water them in after having made the border thoroughly moist. Outside borders must not be neglected, but have copious waterings where the rainfall is deficient. Mulch the borders lightly, heavy coatings do more harm than good. A little stable manure, 1 to 1½ inch thick, will lessen evaporation, and from its lumpy nature not deprive the soil of the beneficial action of air, warmth, and the moisture of dew and rain.

Cucumbers.—A few seeds may now be sown for late summer and early autumn produce. The plants from this sowing will afford much finer fruit in late summer than plants that have been in bearing a considerable time, as old plants generally produce knobbed (seeded) fruits towards the end of the season, and are neither so handsome nor useful as straight seedless fruits. The seedlings will be fit to plant in about a month, and succeed admirably in frames with a little bottom heat, such as may be afforded by any partially spent manure, mixed with a little fresh, but not raw, stable litter. It is needless to say that the plants succeed in houses, and give a supply to a late period of the year where there is sufficient heating power.

Plants in Full Bearing.—In order to keep up a regular succession of fruit, attention must be given to thinning exhausted growths, removing bad leaves, stopping, tying, and regulating, so as to keep up a successional growth of bearing wood. Add a little fresh soil to the surface of the bed from time to time with a light mulching of sweetened horse droppings or cow manure, the latter dried and broken up. Syringe at closing time, and maintain a good moisture all day by damping the floors in the morning, noon, and early in the evening. Avoid too much moisture in dull weather, as it makes the growths soft and the foliage more liable to injury on a bright period ensuing. After a few days of dull moist weather it is advisable to shade, and keep the house rather close on the return of bright weather. Supply liquid manure copiously once or twice a week, but it will not materially benefit plants sparsely furnished with roots and defective in foliage. What such plants want is fresh soil or surface dressings of lumpy material. Close early, say at 85°, and advance to 90° or 95°, and only employ fire heat to maintain a night temperature of 60° to 65°.

THE BEE-KEEPER.

SEASONABLE NOTES.

BEE-KEEPERS are close observers of the weather, as it is an important factor in honey production. The cold winds experienced throughout the spring have been the cause of dwindling in many colonies. In some apiaries the majority of the stocks were at least a fortnight later than usual in being supered; but, as the weather has turned out since, it will probably not be detrimental to those stocks that were weak at the end of April if they were headed by young fertile queens. As the weather remained so cold and changeable, supers would have had the effect of lowering the temperature of the brood nest.

The much-needed rain having come, bee-keepers were looking forward to a higher temperature with bright sunshine which would enable the bees to obtain a surplus from the fast opening flowers. On the 12th and 13th ult. it seemed as if their hopes were to be realised, as they were ideal bee days, the temperature being high and the sun shining brightly from an almost cloudless sky. Bees worked with a will as if they intended making up for loss of time. A rapid change, however, came over the scene, for within twenty-four hours a perfect hurricane raged throughout the country, doing a great amount of damage. Large trees were uprooted, roofs and coverings were taken off the hives, and in some instances the latter were overturned. Bees again clustered closely in the body of their hive. In several instances I observed drone brood being turned out of the hive, a sure sign that the bees were taking a gloomy view of the sudden change in the weather. This was followed by a low temperature and rain, the latter doing much good to the growing crops.

The White Clover being now in full bloom, and just at the height of the honey flow, bee-keepers' hopes were nearly at zero when there came a rapid rise in the temperature, and on Jubilee morning the sun burst out in all its glory. It was perfect bee-weather, and raised the hopes of all loyal subjects who in various ways did honour to our beloved Queen in this the sixtieth year of her reign.

The following day was equally fine, a high temperature and bright sunshine prevailing throughout the day. Bees have worked from early morning to late at night. It is only when a high temperature prevails they will collect honey late in the evening. All stocks being now in good condition, honey has been stored at a rapid rate. It is several years since I have seen so much surplus stored in the short space of two days as on this occasion. May it prove a good omen for the remainder of the season.

REARING YOUNG QUEENS.

In our anxiety to obtain as much honey as possible, I fear we are often negligent of queen rearing. Now is the time to rear young queens, for if they are hatched within the next two or three weeks they invariably do well, and as it is a very simple matter to rear and afterwards introduce young queens after they are fertilised there can be no excuse for not carrying out the operation on proper lines.

It may, perhaps, be of interest to state how it is done in my apiary, where if the plan were not successful in providing a hardy race of good workers, which in favourable seasons will store a

handsome surplus of honey, I should not practise it. I always obtain my honey, both extracted and in the comb, from colonies headed by queens hatched the previous year. If they are not crowded to overflowing with bees, when the honey flow comes I add bees and brood from other stocks that are intended for queen rearing. When sufficient colonies are arranged in this manner attention is devoted to queen rearing. This is done from fairly strong colonies, and it is advisable not to destroy the old queens until the required number of young ones are hatched, have become fertilised, and are laying.

When the bees are on the wing in the middle of a fine day is the best time to commence operations. Examine each frame as it is removed until the queen is found, place the frame of brood and all the adhering bees with the queen in an empty hive, and close up with a frame of fully drawn-out combs on each side. If there does not appear to be sufficient bees to cover the brood, shake others into the hive from another comb, place the hive a few yards away from its original stand; now divide the remaining frames and bees into two or three nucleus hives, according to the number of bees remaining, allowing them to stand a couple of feet on either side of the original stand, and young queens will be raised.

Instead of dividing the stock at once after the removal of the queen, it is a good plan to obtain a frame from another stock that has eggs laid within the previous twenty-four hours, cover the whole up warm, and queen cells will be commenced at once. These will be sealed over in about eight days, the young queens appearing on the sixteenth day. Three or four days after the cells are sealed over divide the stock into as many colonies as there are queen cells. If there are not sufficient bees add frames of hatching brood and bees from other stocks. This may be continued until there are young queens enough and to spare. If there are several sealed up queen cells on a comb they may all but one be removed with a knife. Cut out a couple of inches of comb with the cell, which must not be damaged, remove a small piece of comb from the one in which it is to be introduced, and place the queen cell in its natural position, pointing downward, in its place.

If a strong stock should by chance swarm naturally, instead of returning them place them in a hive with fully drawn-out combs or foundation, and if the weather is favourable they will at once store a surplus. A few days afterwards examine the colony from which the swarm came, and form nucleus hives from it, as a dozen or more queen cells will probably be found there, and this is an excellent way of obtaining young queens.—AN ENGLISH BEE-KEEPER.

TO CORRESPONDENTS

*** All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," *8, Rose Hill Road, Wandsworth, London, S.W.* It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects, through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Malmaison Carnation (*W. H. S.*).—The Malmaison bloom you send is a very good one, but we doubt very much whether it is sufficiently distinct from existing varieties to warrant your putting it on the market. Why not send a specimen to Veitch's, or to Mr. Douglas, for their opinion?

Coleuses and Eelworms (*G. P.*).—We presume you have seen the eelworms through a microscope. If you have seen small worms with the naked eye they are not eelworms, and may perhaps be expelled with limewater. For checking eelworms Little's soluble phenyle is very efficacious, but Condy's fluid, which is easier to procure, diluted to a pale rose colour, has been found of great assistance.

Cornus Kousia (*M. G. R.*).—We think you will find the information relative to this plant on page 7 of service. An illustration is given in elucidation of the text.

Soluble Phenyle *versus* **Crude Carbolic Acid** (*W. S.*).—Yes, there is a very important difference between Little's soluble phenyle and crude carbolic acid—namely, the first has the formula C_6H_5, and possesses all the good properties of the latter, but is non-poisonous, soluble to the fullest extent; and while effective as a germicide, eelwormicide, and miticide, acts as a fertiliser. Crude carbolic acid has the formula C_6H_6O—that for the chemist, who says they are the same, is very corrosive, dangerous to handle, as it burns the skin, a powerful poison, only moderately soluble in water, and though an excellent disinfectant where vegetation of a useful kind is not concerned, acts as a plant poison at the time of application, and for a considerable while afterwards, besides not being so effective as an eelwormicide. We have proved these things by carefully conducted experiments, and are satisfied that Little's soluble phenyle is the proper substance to use for preventing and destroying eelworms infesting Cucumbers, Melons and Tomatoes.

Plum Trees Dying Off when Seven to Eight Years Old (*W. S.*)—We have only found two fungoid diseases that cause Plum trees to go off in the manner you describe:—1. A sort of dry canker on the stem similar to that of the Apple tree, but without an excrescence or swelling, the affected part being somewhat shrunken and depressed, due to the destruction of the bark. This is caused by a fungus closely allied to the Apple tree canker fungus (Nectria ditissima), which Mr. Abbey first found on Diamond Plum trees in 1870, and for distinction named Nectria ditissima var. prunaria. Trees affected by it usually die in the spring, as the fungus grows during the autumn and winter, and succeeding in girdling the stem or branch the part above the point infested dies, sometimes without and at others shortly after the leaves come out. 2 A drying up of the bark round the stem or branch, with or without a slight exudation of gum, collapse in this case taking place after the trees come into leaf, and generally in June. It is caused by the brown rot fungus (Monilia fructigena), a very common, but little suspected parasite, and the most malignant to stone fruits in this country. Of course we cannot say what your trees are affected with in the absence of specimens, which should have been sent, but the case appears very like one or other of these mentioned. As for an analysis of the soil, we do not think it would help you materially, as more depends on staple and other cultural matter than can be disclosed by an analysis of the soil. Still it might be useful, but unless taken at more than one depth of soil would, in our opinion, be worse than worthless—that is, money wasted.

Diseased Tomato Fruit (*Tomato*)—The "spot" commencing at the eye of the fruit and extending over the surface so as to form a large depressed blotch, the skin in some being separated from the flesh and giving a sort of scorched or blister-like appearance, has no connection whatever with management, as sometimes asserted, and as you have an example of after giving "every attention, and the fires never been out, warming the pipes every night with ventilation at top and side lights opening into other houses out altogether." The cause solely and absolutely of the "spot" is the growth of the mycelial hyphæ of a fungus in the tissues of the fruit, which descends by the central axis and pushes ramifications into seed receptacles, and destroys all it can penetrate. It is the hyphæ developed from the germ tube of a germinated spore of Diplocladium solani var. tomati, and its ultimate condition Fusarium solani var. tomati. This, however, may be, and commonly is, as regards the fruits, suppressed; but resting spores form in the integuments of some seeds, and these go over with the plant in embryo grow and produce "sleeping disease" in due course. The Diplocladium stage is regarded as saprophytic, but it, all the same, gives rise to "black stripe" and other forms of disease in the fruit, some going so far as to say that it cannot injure sound Tomatoes. All that is mere guesswork, as the fungus pursues its course like any other parasite. It sometimes attacks the fruit during setting and the embryonic fruits turn black. That is said to be non-setting, and its cause damp, moisture having settled on the fructifying organs and destroyed them. In other cases the disease does not appear until the fruit has swelled considerably, sometimes not till near ripening, and the cause in these instances is also regarded as damp—a sort of "scalding." The preventive, therefore, is more air, not only top air but side ventilation, and with that the fruit will not turn black striped or spotted. But though useful it is not always effectual in preventing the spores of the fungus germinating, as vigorous plants will damp in flower and moisture settle at the eye or heel of the fruit, and then it is all over. The fungus will do what it can, and the plant resist to the best of its power, so that the malady may for a time appear arrested, some part of the fruit remaining sound. There is much to be said both ways for this very disastrous complaint, some drowning it and others drying the atmosphere so that it cannot grow. Its very existence depends on organised matter, and to use it moisture must be present. We know no more, except that it has a particular liking for vigorous plants, and that means excess of nitrogen. Water at the roots will wash it (nitrogen) away, and dryness in the atmosphere dissipate the superfluous moisture. Something more rational is needed—namely, an adjustment of the mineral to the nitrogenic elements, so as in the first instance to secure a sturdy plant setting fruit freely and afterwards feed as required. Your soil appears a rich warp, and would be improved by a dressing of basic slag phosphate—say 7 lbs. per rod. There is a fair amount of lime in the soil, evidently added, and could not do other than good. The fungus may have developed from hyphæ pushed by the resting spores in the soil or decayed matter, such as fibre

or vegetable matter in manure. At any rate, the fruits are infested with the mycelial hyphæ of that fungus, and its resting spores will go over with some of seeds, and the plants from them will have "drooping," "sleepy," or "sudden collapse" disease, which ascends, but in your case the fungal hyphæ passes from the eye into the fruit. It is difficult to account for fungi not appearing for years and then becoming malignant. The only thing we can advise is the use of basic slag phosphate, with some mineral superphosphate—say 2 ozs. per square yard, so as to act quickly, getting more lime and phosphoric acid into the plant and fruit, together with side ventilation as well as top, it not being sufficient to have one without the other. If you were to apply a light dressing of some anti-fungoid preparation in powder it would be an advantage, using a bellows apparatus. We sincerely sympathise with you, and very much regret not being able to give better advice.

Hop Leaves Browned (*W. P.*).—The leaves are in bad condition from the attacks of something, but we were unable to discover any insect or remains of any, otherwise the appearance resembles that resulting from an attack of the hop cuckoo fly, frog fly or jumper (Euacanthus interruptus.) Equally unfruitful of result was an examination for fungoid affection. We consider the mischief had been caused by the "jumpers," which have departed on your applying the insecticide Indeed, they are not easy to catch at work, but they are now plentiful on Elm trees, and their sucking must be highly injurious, as wherever they puncture a leaf the spot spreads considerably. The "cuckoos" deposit their eggs on the rootstock, and the young "jumpers" commence feeding on leaves nearest the ground upwards and follow on from the beginning of May, the older leaves appearing the worst, but that is because they show the full effects of the attacks. We found the best thing to prevent attack was lightly spraying over the crowns or stocks with soluble petroleum when growth commenced in the spring, following it up at about fortnightly intervals.

Apple Trees with Straight Down Rootstocks (*J. B.*). — It is difficult to deal with trees that have the stems deeply buried and the roots practically beyond the reach of control. We have not carried out the system you propose on fruit trees, not having the misfortune to come across any in such case as you describe; but we have had young forest trees similar to deal with, and found ringing the stem about 6 inches below the then surface answer perfectly, the descending current causing a callus to form from the upper edge of the bark, and roots to be emitted plentifully. Thus in the course of two or three years the sickly trees recovered, and had abundance of roots near the surface. We should not hesitate to act in a similar manner with your trees. We should not make the ring more than 6 inches from the surface, and not more than three parts round the stem in the first instance; but the other part you may notch—straight cut on the upper side, and sloping one upwards to it, so as to arrest the downward current to a great extent without actually preventing the ascent of the sap by ringing all round at once. If the ringing were carried out now in a careful manner it is likely that you would not only secure a callus and some new roots by autumn, but also so arrest the sap in its downward course as to concentrate the assimilated matter on the buds, and induce the formation of blossoming ones. Thus you may be able to secure some fruit next year, at least the chances lie in that direction, nothing bringing overluxuriant trees into a state of fertility sooner than the concentration of the juices on the buds, as is the case in ringing judiciously performed.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*D. W.*).—The correct name of the Orchid you send is Lælia lobata. (*O. P. S.*).—1, Polystichum aculeatum; 2, Microlepia hirta cristata; 3, Nephrodium setigerum. (*C. F. A.*).—Euphorbia Lathyrus, the Caper Spurge. (*A. A. B.*).—1, Limnanthes Douglasi; 2, Lychnis coronaria; 3, Linaria reticulata var.; 4, Œnothera Lamarckiana; 5, Lychnis chalcedonica.

COVENT GARDEN MARKET.—June 30th.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	0 0	to 0 0	Lemons, case	11 0	to 14 0
Filberts and Cobs, 100 lbs.	0 0	0 0	St. Michael's Pines, each	3 0	8 0
Grapes, lb....	1 6	2 6	Strawberries, per lb.... ...	0 3	1 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100	0 0	to 0.0	Mustard and Cress, punnet	0 2	to 0 4
Beans, ½ sieve	0 0	0 0	Onions, bushel	3 6	4 0
Beet, Red, doz	1 0	0 0	Parsley, doz. bnchs	2 0	3 0
Carrots, bunch	0 3	0 4	Parsnips, doz	1 0	0 0
Cauliflowers, doz.	2 0	3 0	Potatoes, cwt.	2 0	4 0
Celery, bundle	1 0	0 0	Salsafy, bundle	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Seakale, basket...	1 6	1 9
Cucumbers...	0 4	0 8	Scorzonera, bundle	1 6	0 0
Endive, doz.	1 3	1 6	Shallots, lb.	0 3	0 0
Herbs, bunch	0 3	0 0	Spinach, pad	0 0	0 4
Leeks, bunch	0 2	0 0	Sprouts, ½ sieve	1 6	1 9
Lettuce, doz.	1 3	0 0	Tomatoes, lb.	0 4	0 0
Mushrooms, lb.	0 6	0 8	Turnips, bunch	0 3	0 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var. doz. ...	6 0	to 36 0	Fuchsias, doz.	4 0	to 8 0
Aspidistra, doz....	18 0	36 0	Hydrangeas, doz.	8 0	10 0
Aspidistra, specimen ...	5 0	10 6	Lilium Harrisi, doz.... ...	12 0	18 0
Calceolarias, doz.	3 0	6 0	Lobelias, doz.	3 0	5 0
Coleus, doz.	4 0	6 0	Lycopodiums, doz.	3 0	4 0
Dracæna, var., doz.	12 0	30 0	Marguerite Daisy, doz. ...	6 0	9 0
Dracæna, viridis, doz. ...	9 0	18 0	Mignonette, doz.	4 0	6 0
Erica, var., doz....	9 0	18 0	Myrtles, doz.	6 0	9 0
Euonymus, var., dozen ...	6 0	18 0	Palms, in var., each... ...	1 0	15 0
Evergreens, var., doz. ...	4 0	18 0	,, specimens	21 0	63 0
Ferns, var., doz.	4 0	18 0	Pelargoniums, doz.	8 0	12 0
Ferns, small, 100	5 0	8 0	,, Scarlet, doz.	3 0	5 0
Ficus elastica, each	1 0	7 0	Rhodanthe, doz.	4 0	6 0
Foliage plants, var., each	1 0	5 0	Spiræa, doz.	6 0	9 0

Bedding plants and roots for the garden in boxes, and in great variety.

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchid Blooms in variety.

	s. d.	s. d.		s. d.	s. d.
Anemones, doz. bnchs. ...	1 6	to 3 0	Myosotis, doz. bunches ...	1 6	to 2 0
Arum Lilies, 12 blooms ...	2 0	4 0	Narciss (var.), doz. bnchs.	2 0	4 0
Asparagus Fern, bunch ...	2 0	3 6	Orchids, var. doz. blooms.	1 6	12 0
Bouvardias, bunch	0 4	0 6	Pæony (English), Pink, doz. bnchs.	6 0	9 0
Carnations, 12 blooms ...	1 0	3 0	Pæony (English), Red, doz. bnchs.	4 0	5 0
Cornflower, doz. bnchs. ...	2 0	3 0	Pæony (Freuch), bunch ...	0 6	0 9
Eucharis, doz.	3 0	4 0	Pelargoniums, 12 bnchs. ...	4 0	8 0
Gardenias, doz....	2 0	4 0	Pinks, doz. bnchs.	2 0	4 0
Geranium, scarlet, doz. bnchs.	4 0	6 0	Pyrethrum, doz. bnchs	1 6	3 0
Gladioli, doz. bnchs. ...	4 0	8 0	Roses (indoor), doz.... ...	0 6	1 0
Iris (var.), doz. bnchs. ...	4 0	0 0	,, Tea, white, doz. ...	1 0	2 0
Lilac, White (French), bunch	3 6	4 0	,, Yellow, doz. (Niels)	1 6	4 0
Lilium longiflorum, 12 blooms	2 0	4 0	,, Red, doz. blooms ...	1 0	3 0
Lily of the Valley, 12 sprays	1 0	2 0	,, Safrano (English) doz.	1 0	2 0
Maidenhair Fern, doz. bnchs.	4 0	8 0	,, Pink, doz....	3 0	5 0
Marguerites, 12 bnchs. ...	2 0	3 0	,, outdoor, doz. bnchs.	4 0	9 0
Mignonette, doz. bnchs. ...	2 0	4 0	Smilax, bunch	2 0	4 0
			Tuberoses, 12 blooms ...	1 0	1 6

THE DIFFICULTIES OF DAIRY FARMING.

The British dairy farmer is constantly being taunted with the fact that he is allowing foreign countries to drive him out of the market by supplying a better article at a lower price. That the B.D F. is in fault it would be foolish to deny, but the question is then raised as to whether he is so much to blame as his manifold advisers think. Any of us who know the British farmer in his home see plainly enough that he is a man of great suspicion, and rather obstinate. Taken as a body, there is no spirit of co-operation existing. He looks askance at his neighbour, doubts his ways and methods, and above all, he sincerely hates any scheme which would allow of outsiders getting any data to go upon as to his financial standing—indeed, in many cases he would rather come to grief, relying on his own resources, than by the help of co-operation stem the flowing tide.

Farmers are too self-contained; their habits, manner of life, and old customs stick to them so tenaciously that it will take more than a generation to broaden their views and enlarge their sympathies. A great deal of this spirit has arisen from diversity of holdings, landlords' restrictions, and the severe competition in better days for every bit of land worth having, and the plethora of farm pupils (save the mark), who, incapable of taking up any other decent business, have been pitchforked into farming, with little or no knowledge and a fair amount of capital, which they soon dissipate.

In the dairy trade the milk-selling branch would be much benefited by co-operation. Large customers can dictate to the railway companies with more chance of attention than single individuals. Putting aside the question of adulteration as beneath our notice, it is a known fact that milk supplied by two or three farms is not of uniform character. In the first place, the feeding

properties of one farm may be vastly superior; secondly, one man may be a better judge of milking stock; in a third the milk itself, though possibly poorer in quality, may be better prepared for market. Now, till the quality is uniform there could be no possibility of agreement in any way.

Just the same with the butter. Made in small quantities it is sure to be very different in quality and texture, and in exceptional seasons of drought, such as 1893-95, the supply is most irregular. As long as trade is good there is a great demand for milk in the large towns—in fact, the great proportion of our cows are supplying the milk trade alone, and we must import butter and cheese. Then comes a time of trade depression, milk is thrown on the farmer's hands, and must, being a most perishable article, be turned at once into marketable goods.

If this surplus of milk could be manufactured at a creamery into a uniform article it would be good and easily saleable, though possibly inferior to what is made in first-class dairies that have all the modern appliances. The cost of a creamery is large, and it could not be maintained on a small scale at all, and unless the farmers can be satisfied with the price allowed for the milk the thing would be a failnre.

Now, the much-vaunted Danish factories allow 3½d. per gallon, with skim milk returned, the average price of butter being 8$\frac{4}{9}$d. per lb. Now, this would not satisfy the Englishman, for at the Sudbury creamery the prices have been 6$\frac{1}{40}$d. per gallon, and this has not proved remunerative to the producer. It is not that he grasps at an enormous profit; he only asks for just a living margin, and this he does not get. Taking an average cow, which will supply 500 gallons per annnm, at 3½d. per gallon, or 5d. per day, how can that cow be fed and tended for that amount? We cannot do it in England.

Our Swedish Minister, Hon. Hugh Gough, mentions a dairy in Sweden where twenty-five farmers work 2807 acres of land. They produce 182,819 gallons of milk per annum, or 64 gallons to the acre; this at 4d. per gallon would realise £1 1s. 4d. per acre, and out of this comes rent, taxes, working expenses, and farmer's profit!

How is it done? We cannot do it here. We are indebted to an excellent article of Lord Vernon's in "Nineteenth Century" of February for these facts and figures, and we will quote him further, *re* Derbyshire. He speaks of sixty-two farms in that county with a total acreage of 4561 acres, 3988 of which are grass, the remaining 573 acres arable. This farm or farms carry 1020 cows, which supplied 545,120 gallons of milk per annum. This is equal to 121 gallons per acre, or double the quantity on the same area in Sweden.

Now, then, as to expenses. Imperial and local taxation rates, 2s. in £; land tax, 1s. per acre; income tax, 6d.; and tithe charge of 3s 6d. per acre would amount to £1716. We find no mention of taxation in Denmark or Sweden, but we may fairly conclude these charges will hardly equal ours, with our costly machinery of county and district supervision.

Then comes the labour bill. In our dairy districts the wage is about 15s. per week with house and garden, 18s. without; and each man can do ten cows, so the labour bill for 1020 cows would be something like £91—16s. per week, or £4732 per annum. Now in Denmark men from fifteen to thirty years of age are content with £10 to £14 per annum, with board and lodging; older married men earn from 10d. to 2s. per day according to time of year, with food found. Therefore the wages would average 10s. 6d. per week, or the sum total of £2782 per annum, as against the English £4732.

As regards their living it is comfortable according to Continental ideas. Are those ideas English? We fancy not. The English farmer's average price for milk does not exceed 6d. per gallon; the consumer pays at least one and half times as much. If the producer and consumer could be brought into nearer touch the consumer would get his milk cheaper, and probably would take more of it. If railways could see their way to lessening the carriage of feeding stuffs more cows could be kept, more hands employed, and more land cultivated.

Where the holdings are small factories for butter and cheese would be very desirable. The raw material (milk) would be made up to the best advantage with the best possible "plant," and under the best possible supervision. Everything would be scrupulously clean, and every new invention (labour saving) would be taken up and adapted at once. The farmer would then be free to give his time fully to the best management of his stock, would sell his milk direct to the factory, have no bad debts, and uniformity in price all the year round.

Where the majority of holdings are large, as is the case generally in England, there has not been much inducement to provide factories, each farmer preferring to do all his own work, and with his greater capital he has been able to do it fairly well.

WORK ON THE HOME FARM.

Turnip drilling is nearly complete. Mangolds and early Turnips are growing fast, and require constant attention with both hand and horse hoe. We have nearly finished cleaning the Potatoes, and are now sowing the top-dressing and earthing up immediately. We are using 3 cwt. of superphosphate, and 2 cwt. of sulphate of ammonia, sown by hand separately.

Wheats are growing very well, they have had just the rain they want, and this heat is exactly the thing to suit them now; the ear is just leaving the blade, and promises to be strong. Everything points to a good Wheat crop where the plant is good, unfortunately a good plant is the exception rather than the rule.

Hay, or rather Clover, making is now becoming general, many pieces being cut and the subdued rattle of the mower being often heard. The Jubilee perhaps spurred farmers on to get their Clover before the 22nd. We fear that crops cut now must be light, the recent rains having not had time to effect much improvement in weight. How little we hear of ensilage nowadays, a dry summer suitable for hay-making appears to have driven it out of mind as well as out of sight.

Roots being all sown, and hay carting the only serious horse labour between now and harvest, we can give our horses, or at least a portion of them, a six-weeks run and rest. As grass is beneficial to the system of any animal, so also to a horse is great benefit to be derived from it, particularly if a good rest from both hard corn and hard work can be allowed. There is not only the saving of the corn to be considered, but an abstinence from corn, always more or less heating, is most beneficial in cooling the system.

It is a good plan to turn carthorses right away on as low lying cool a pasture as is available, and let them stay there until they are required for the leading of the corn.

METEOROLOGICAL OBSERVATIONS

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet

DATE. 1897. June.	9 A.M. Barometer at 32°, and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of soil at 1 foot.	IN THE DAY. Shade Temperature. Max.	IN THE DAY. Shade Temperature. Min.	IN THE DAY. Radiation Temperature. In Sun.	IN THE DAY. Radiation Temperature. On Grass.	Rain.
	Inches.	deg.	deg.		deg.	deg.	deg	deg	deg.	Inches
Sunday .. . 13	30·161	75·0	63·2	N.E.	61·4	83·3	54·8	125·6	50·2	—
Monday 14	29·998	70·0	62·9	N.W.	63·4	74·4	58·0	123·8	52·8	—
Tuesday 15	30·283	64·2	53·9	W.	62·9	74·0	51·1	120·9	46·1	—
Wednesday 16	29·756	59·2	54 9	S.W.	62·3	65·7	55 6	118·1	51·1	0·031
Thursday .. 17	29·904	56·1	47·8	N.W.	60·2	65·3	44·7	121·9	39 9	0·274
Friday 18	29·499	60·8	57·9	S.W.	6 ·2	65·0	48·9	108·8	47·7	0·057
Saturday .. 19	29·994	54·4	47·7	N.W.	57·2	63 8	45·8	114·1	40·8	0·2 6
	29·935	62·8	55·5		61·1	70·3	51·3	119·0	46·9	0·568
Sunday 20	29·705	57·8	52 8	S.W.	53·0	62·6	49·1	100·9	48·0	—
Monday 21	30·109	62·2	57·0	W.	57·2	75·1	47·9	124·7	43·4	—
Tuesday 22	30·246	65·6	60·9	S.W.	60·6	76·6	61·2	119·7	55·2	—
Wednesday 23	30·115	74·1	62·6	E.	62 6	84·1	58·1	127·4	52 6	—
Thursday .. 24	29 901	79 6	70·1	S.W.	64 4	87 8	58·8	125·8	53·2	0·255
Friday 25	30·058	57 6	56·7	N.E.	63·9	63·7	55·1	72·0	56·2	0·011
Saturday .. 26	30·069	59·6	57·8	N.E.	61·6	74·0	54·7	116·4	55·2	—
	30·029	65·2	59·7		61·2	75·1	55·0	112·4	51·8	0·266

REMARKS.

13th.—A perfect summer day.
14th.—Overcast early; frequent sun, tempered by cloud and breeze, after 9 A.M.
15th.—Fine and pleasant, but frequently cloudy.
16th.—High wind all day; showers at times till 11 A.M., bright sunshine after.
17th.—Generally sunny, with fresh breeze, but cloudy intervals; overcast night, with slight showers.
18th.—Steady rain from 1.30 to 5 A.M.; generally overcast and windy, with short, sharp showers.
19th.—Generally overcast, but occasional sun; rain at 8.30 P.M. to midnight.
Much cooler at the end of the week than at the beginning, so that on the whole it was one of average temperature.
20th.—Generally overcast, with some sun at times.
21st.—Alternate cloud and sunshine, hot at times.
22nd.—Overcast till 11 A.M., generally sunny after; solar halo at 5 P.M.
23rd.—Hot and fine, but rather hazy and close in morning.
24th.—Cloudy and close early; slight shower of large drops at 9.30 A.M., and brighter after; sudden squall at 2.6 P.M., and thunderstorm from 3 to 6.16 P.M.
25th.—Overcast throughout; drizzle in evening.
26th.—Drizzle early, and overcast till 11 A.M.; generally sunny from noon.
A fine warm week, with about the average rainfall.—G. J. SYMONS.

Journal of Horticulture.
THURSDAY, JULY 8, 1897.

HONOURS IN HORTICULTURE.

AS was intimated some time ago, the Council of the Royal Horticultural Society decided, in commemoration of the sixty years of her Most Gracious Majesty's reign, to strike a new medal, to be called "The Victoria Medal of Honour in Horticulture," to be awarded solely *honoris causâ* in the domain of horticulture. It appears the Council decided to award not more than sixty of these medals during the present year, a further award only to be made on the death of one of the existing holders, in order that the number of living Victoria medallists may never at any time exceed sixty, who must be subjects of her Majesty at home or in the colonies. The essential condition is undoubtedly a just one—namely, that the recipients must be actual subjects of the Queen, and the limitation to sixty is equally appropriate as corresponding with the number of years of the great reign hereby commemorated.

The *Journal of Horticulture* gave to the project a frank welcome at the outset. The event, which horticulturists so strongly desired to celebrate, was felt to be so unique that a flower show alone, however great, with medals to exhibitors, would not, even if practicable, adequately meet the occasion, and do sufficient honour to an event the like of which has never before occurred, and in all probability will not occur again in a thousand years.

Exhibitors of garden produce have done splendid work, and well deserve the honours they have won; and they are not deprived of the opportunity of winning more by this memorable departure of the Royal Horticultural Society—on the contrary, special opportunities are provided for them at the forthcoming Royal commemorative show at Shrewsbury.

It has also to be noted that though the Council of the Royal Horticultural Society has taken a broad statesmanlike view of the subject which had to be considered, and gone beyond the domain of exhibitors, these as a body have in no sense been excluded. This is apparent, for it can be seen at a glance that a full proportion of the first "Victoria medallists" have been, and some still are, prominent exhibitors, and have won high honours in the competitive arena.

Than the most intelligent and most successful exhibitors at shows, there are no persons more

cognisant of the fact that, outside the question of showing, there are men who have in various ways and over long years of endeavour done something worthy of recognition in placing the great art of horticulture on the firm basis on which it stands to-day.

Its present status could not have been attained in the absence of generous patronage, scientific research, the devotion of explorers, the skill of hybridisers, the enterprise of zealous men, quiet experimental work in the garden and the laboratory, and midnight labour at the desk. One section alone, and any section, could have done comparatively little in bringing gardening into its present condition. It is by the combination of effort on the part of many men in diverse ways that Britain stands at the head of all the world in horticulture. Yet the fact is indisputable that those men who have striven to share, each in his own sphere, in advancing the cause of gardening, have had no incentives to urge them on beyond the calls of duty, and until now no special public recognition of their services from high official source. The Royal Horticultural Society has found a way to bestow a token of honour in commemoration of the greatest historic event of the century, and has honoured itself in doing so.

That the honours have fallen where everyone would desire is a question that need not be discussed. It must suffice to say that there is not wanting evidence that extraordinary pains have been taken to ascertain the views of a large number of horticulturists on the question of allocation. If we mistake not, the decisions are based on a plebiscite—a vote of the House of Commons, so to say, collated by the House of Lords—the Council of the R.H.S. If we were inclined to criticise the final decision, we should begin by saying that the Council has not been over-generous to its own members. True, there are some three or four of the body who are honoured, but the majority, certainly, if not every one of them, must, we should think, have been voted as recipients of the medal if they had no seat at the board.

The list of the first sixty gentlemen on whom the distinction has been conferred we publish in alphabetical order precisely as received. It will be perceived that the list is widely representative, as composed of patrons and workers, botanists and other scientists, authors, orchidists, raisers of new plants, rosarians and other florists, fruitists, an eminent landscape gardener, nurserymen, seed merchants, a great Covent Garden Market salesman, market growers, and not least in numbers practical gardeners.

ORIGINAL VICTORIA MEDALLISTS.

Burbidge, F. W.
Bunyard, G.
Barron, A. F.
Baker, J. G., Kew
Balfour, Professor, Edinboro'
Boxall, Wm.
Cookson, Norman
Coleman, William, Eastnor
Culverwell, W., Bedale
Douglas, J.
Dyer, W. T., Thiselton
Dunn, Malcolm
D'Ombrain, Rev. H.
Dickson, G., Chester
Engleheart, Rev. G. H.
Ellacombe, Canon
Foster, Professor M.
Hooker, Sir J. D.
Henslow, Professor
Hudson, J., Gunnersbury
Heal, J., at Veitch's
Horner, Rev. F. D.
Haywood, T. B.
Kay, Peter
Lawrence, Sir Trevor
Laing, John
Llewelyn, Sir J. T. D.
Masters, Dr.
Moore, F. W., Glasnevin
McIndoe, James
Marshall, W.
Milner, H. E.
Molyneux, Edwin
Monro, G., Covent Garden
Moore, Chas., Sydney
Maries, C.
Nicholson, G.
O'Brien, I.
Paul, G.
Paul, W.
Rivers, T. F.
Robinson, W., *The Garden*
Rochford, T. H., Broxbourne
Rothschild, Hon. Walter
Schröder, Baron
Sander, F.
Seden, J., at Veitch's
Sutton, Arthur
Sherwood, N. N.
The Very Rev. The Dean of Rochester
Thomas, Owen
Thomson, D., Drumlanrig
Thompson, W., Ipswich
Veitch, H. J.
Wilks, Rev. W.
Wolley-Dod, Rev. C.
Wright, J., *Journal of Horticulture*
Wythes, G., Syon
Wilson, G. F.
Ward, Professor Marshall

That the honour will be appreciated by every one of the recipients there can be no doubt, and not the less so since the medal has been struck with her Majesty's express sanction and approval, and being "solely *honoris causâ*" will, of course, not be used by the recipients for any trade advertisements or such like purposes; but each recipient is authorised to put V.M.H. (Victoria Medal of Honour) after his name, as indicative of the highest distinction that can be conferred in the horticultural world.

HARDY FLOWER NOTES.

As we enter the garden we are welcomed with the song of the flowers, as their perfume has so well been termed. It comes to us sweet as the carolling of that lark which, afar off, sings in the heavens its morning song. Each movement of the air brings with it fresh fragrance exhaled from the flowers. It comes from the Pinks now so sweet with their perfume and so delightful in their beauty. It comes from the Rose, though a little later the queen of flowers will yield us more of her delicious odours. It comes from the Honeysuckle—the emblem of faithfulness—which hangs over the wall and clambers up the Hawthorn tree. This song of the flowers—a wordless, inaudible melody—touches us with its sweetness, and endears to us the flowers which give it birth. That Rose, that Pink, that Honeysuckle, have within their petals the quality which is to the flower what talent is to the manly and the beautiful, an added virtue, the crown of all. Of the Rose others can better tell; others can better reveal its loveliness, its graces, its fragrance.

The Pink has fewer worshippers, and these, like the writer, are more eclectic in their tastes, owning allegiance to no particular flower, but seeking to draw pleasure from many, yet its fragrant and beautiful flowers have made it a favourite in long past years. It is one of Jove's flowers—a Dianthus—and though eclipsed by the sister flower—the Carnation—should never be absent from the garden's bounds. With me, on account of old associations, the old white garden Pink will ever be a sacred flower, but the newer varieties are none the less admired. The large old plant of Mrs. Sinkins, which for several years has grown bigger and bigger in one of my borders, is larger than ever this year, and has more flowers than ever before. Many a sacrifice has it to offer to the Lares and Penates in the shape of cut blooms. Some day it will die of old age, but we hope that day may be far distant, and that younger plants may then be able to supply enough of the odorous flowers. Some of the new Pinks raised by Mr. Ladhams and others are of the highest merit in the garden.

Following use and wont it will not do, however, to write at large of the Pink, and one may aptly speak of one of the genus to which it belongs. This is Dianthus superbus, the Fringed Pink, which, by reason of its generally short-lived nature, is not so often seen in gardens as it ought to be. This is not because of its delicacy or inability to stand cold, but probably because of its less truly perennial habit. It is said to be a perennial in light, dry soils, but experience in my garden and elsewhere does not bear this out. Last year I saw it in Ireland planted in a small bog in a rock garden, where it would not be crowded with other plants, and where its seed would fall and be likely to germinate readily.

It had been planted there by an experienced cultivator of such plants, and one is quite prepared to find such a method of cultivating this pretty Pink prove successful. It does not appear to be very widely known among growers of hardy flowers, so that this note may do some service in bringing to their notice a flower of distinct appearance. The blooms begin to appear about midsummer. They may be called rose-coloured, and have the petals cut up by deep divisions, which go deeper than the centre of the petal. The flowers are feathery, and are produced on many-flowered stems 10 to 18 inches high. The leaves are narrow and bright green. The Fringed Pink is easily raised from seed, which may be sown in spring in pots or pans, or in the open ground.

Not many of the Irises have fragrant flowers, but their beauty of form and bright colouring make them ever attractive. This is emphatically the month of Irises, when the different Flag, or German, English, and Spanish varieties give the garden much of its summer glory. But even these, numerous as are their varieties, form only a portion of the richness of the material for gardening offered by the Irises. There are many very beautiful species which are at once easy to cultivate in the garden, and full of elegance and grace in habit and colour. Among these is Iris Douglasiana, a Californian species, not much known, and not so easily procured as some.

I was reminded that I had never mentioned it in the Journal by the arrival of a cut bloom from a plant received under this name by a good friend of mine, who has a large collection of hardy flowers. It proved to be the form of I. Douglasiana known as the "Santa Cruz variety," which has whitish falls, a yellow keel, and claret purple veins.

I have had for some time in my garden a plant as Iris Douglasiana, without having much opportunity of verifying the name from living specimens, but it seems correctly named, and is, as I write, in full bloom. Mr. J. G. Baker gives the type as having the falls "pale lilac, with darker lilac veins." This is exactly the colour of my specimen, but I learn from another source that in California the species varies in colouring, and that purple, lilac, pink, rose, and yellow forms are to be found. It belongs to the Apogon or beardless section, and has linear leaves from 1 to 2 feet long, with the flowers produced on stems from 6 to 12 inches long. It grows here in a dryish border of sandy soil, and has been quite hardy for several years.

Lest it should be forgotten later in the season one would like to say something about a dwarf-habited Poppy which, through the kindness of one of our most learned growers of hardy flowers, was sent me last year. This is "Mr. J. Carrington Ley's Hybrid Poppy." It is an acquisition, but I have puzzled myself over its parentage. It is like a dwarf small-flowered Papaver bracteatum, perhaps the richest coloured of the great perennial Poppies, but is without the leafy bract at the base of that variety of P. orientale. It may be a cross between P. bracteatum and the ordinary P. orientale. I observe in the Kew "Hand List of Herbaceous Plants" that there is grown there a hybrid of P. rupifragum and P. orientale, but there is nothing to indicate its appearance. From Rev. C. Wolley Dod I have hybrids of P. rupifragum closely resembling that species.

It may arise from my own slowness of observation, but it seems to me that neither of these "hybrid" Poppies presents conclusive evidence of hybrid origin, further than that Mr. Carrington Ley's one may have come from P. orientale and P. o. bracteatum, which is only considered at Kew a variety of the former. However this may be, Mr. Carrington Ley's Poppy is a valuable little plant. It is of dwarf habit and neat in its way, growing only about a foot and a half high in the light soil of this garden. But I have said enough on such a question, and let me close with a look at the flowers in bloom as I write.

There are, besides those spoken of, Mulleins, Potentillas, Geums, Pyrethrums, majestic Delphiniums, tall and dwarf Campanulas, Lupines, Sea Hollies with spiny flowers; Foxgloves, into which the humble bee loves to enter; Snapdragons, Irises in many kinds and colours, Rock and Sun Roses, annual and perennial Poppies in great profusion, and a host of others. Untold wealth of beauty indeed, tempting us to sit in the Rose-covered summer house and dream the day away, sallying forth now and then to wander among the flowers. Unprofitable in some ways it might be, but in others not in vain.—S. Arnott.

LIGHT AND ITS INFLUENCES.

We are mostly aware how indispensable are air, heat, and moisture to the development of plant life, but how intimately the agency of light is connected with that operation is not matter of such common knowledge.

By light we mean the diffusion of solar rays, which are always in a greater or lesser degree illumining the earth. This emanation by means of rays is attended by two results—viz., heat and light, which further effect a great chemical change. Whether these three be different manifestations of one grand principle or three distinct ones, science has hardly yet satisfactorily determined. Thus it is possible, for instance, to receive heat and throw back light, or admit the light and obstruct the heat, and it is also possible to produce chemical effects which neither heat nor light combined or singly can produce. The chemical influence of sunbeams, which we call actinism, may act on substances unaffected by heat or light. Assuming, then, that solar radiation comprises three different sets of rays, let us point out some of the most obvious effects of light and actinism on plant life.

The germination of seed is the change of the inert embryo into a living plant, effected jointly by heat, light, and moisture. Light is destructive to this process, for it is only in darkness that vigorous germination is induced. But while the sun's rays retard the vivification of the embryo, the actinic rays forward it. Southern aspects are always clothed with more elaborate and developed plants than northern sites, and this results from the greater light the former enjoy. The north may be as verdant, but it will never be so flowery as the south exposure.

It would appear, therefore, that actinism is a more subtle force than air, heat, light, or electricity in the development of vital energy. When a sunbeam falls on a leaf it induces a change of colour. The green hue so prevalent in healthy vegetation depends entirely upon light. Grow a Potato in a dark cellar, and observe how any feeble ray of light which enters attracts it. It may have grown for months to the extent of some feet, and yet no trace of green is visible until it has come within the influence of solar light, which in even a few hours will give it its natural hue.

In America the operation of light in colouring leaves is seen in a grand and striking manner. Over the vast forests clouds often spread for days, interrupting the rays of the sun. It was noted on one occasion when the sun had not shone for three weeks, the leaves of trees had reached their full size, but were pale. One morning the sun broke through the clouds, and as a result in the afternoon of the same day the whole forest exhibited its natural summer dress. It is not to be inferred, however, that continual solar light is a normal condition. On the contrary, plants require a period of repose from that activity which actinism ever excites.

Our home vegetation springs, grows, and ripens slowly under alternate conditions, requiring several months for its proper development; but in Arctic regions, under continual light, plants start suddenly into existence, and go through their life in a few weeks. Dr. Lindley truly says that diurnal changes of light and darkness are necessary for the well-being of plants, for if they were always kept in light they would be ever decomposing a great constituent—carbonic acid—and would consequently become stunted, and there would be no trees, as is actually the case in the Polar regions.

Grown in darkness their tissues become lengthy and weak; no carbonic acid decomposes, no parts acquire solidarity and vigour, and they soon die. But under natural circumstances plants which in the day become exhausted by the decomposition of their carbonic gas repair their strength at night by inhaling oxygen copiously, so forming a new supply, and absorb moisture from earth and air without losing any portion of it. It will be seen, therefore, how important is actinic light by its effects on inanimate objects as well as animate ones. Organic life is thrown into motion by its influence, vitality is revivified in seeds, and even inert matter changes its colours and properties.—Wm. Norman Brown.

HORTICULTURAL HISTORY NOTES.

The Apothecaries' Garden, Chelsea.

Those speculators who are constantly on the look-out for eligible building sites about the London suburbs, have often cast longing eyes on the old "Physic Garden" at Chelsea, and have, indeed, made various efforts to get this ground converted to other uses, which would involve the destruction or removal of most of the plants now growing there. It seems a pity that this small space cannot be kept intact and maintained as long as possible in its present condition. I would hardly advocate its being thrown open to everybody, which might not be advisable. A small charge could be made to visitors. Really there are strong reasons for its preservation; this garden should be of great interest to members of the medical profession, to botanists, and all lovers of those fragments of a bygone London which yet remain. We may say, besides, that the place may be considered to have for several reasons special associations with our Royal Family. Certainly it has been an important means of advancing British horticulture during the Georgian era, if not since. Therefore the Diamond Jubilee of Queen Victoria suggests itself as a very suitable time to secure this historic space against future attacks. About 1875 the now defunct Metropolitan Board of Works endeavoured to acquire the garden, intending to dedicate it to the people of London, but the scheme failed. It may be possible for the London County Council, aided by some of the wealthy residents in Chelsea and neighbourhood, to accomplish what was then left undone before it is too late.

The early experiments of the Apothecaries' Company in the direction of horticulture seem to have been made somewhere about Westminster, but the exact locality of their first garden is unknown; probably it was somewhere near Millbank, for in the Stuart days there were many gardens along the Thames between Westminster and Chelsea. Part, indeed, of the old "Pest House" fields, now absorbed into South Belgravia, was open ground till after her Majesty's accession, supplying vegetables and fruit to the adjacent suburbs. Mention is made by Evelyn of a medical garden existing here during the Protectorate; this may have been the same plot which the Society of Apothecaries, in 1676, were holding of a

Mrs. Gape, expecting shortly to remove their plants to Chelsea. Several things might have induced them to select this locality for their garden, one near the Old Swan Tavern, a house well known in the seventeenth century, and very conveniently situate on the river's bank. Chelsea, too, then a "village of palaces," had already a repute of being a favourable spot for plant growing, for several of its mansions had extensive gardens in which foreign species had been introduced. To the east of the Apothecaries' garden, at no great distance, were the grounds of the Earl of Ranelagh, a nobleman who was reputed to have done much for the advancement of horticulture in the reign of the third William. Bowack says that "the plots, borders, and walks were curiously kept and elegantly designed;" the greenhouses also had few rivals at that time. Swift, however, with his wonted bitterness, calls Ranelagh "the vainest old fool he ever saw," perhaps rightly.

We can trace the history of this three acres of land, or about that, to the reign of Charles I., when they were conveyed to Edward Cheyne by Sir A. Gorges, being then an open field. In 1673 Charles Cheyne let the ground on lease to the Society of Apothecaries for £5 yearly; the next year it was walled round and partly planted with herbs. It was not the oldest botanic garden in England, as some have stated; several preceded it, such as Gerard's and Tradescant's, also near the metropolis. John Watts, a botanist, who had helped on the enterprise from the first, became curator and manager in 1680. Only five years after Evelyn records a visit he paid the garden, when he saw hosts of novelties, especially many rare annuals. By this curator one of the earliest stoves was constructed, heated by pipes—for the first greenhouses had open fireplaces. Petiver was chosen in 1709 as demonstrator of plants, his extensive collection of natural history objects afterwards passing to Sir Hans Sloane by purchase, and now forming part of the British Museum.

But the grand turning point in the history of these gardens was the generous action of the above baronet, who had acquired Chelsea Manor from the Cheyne family. Had it not been for this they would not probably have had their long-continued existence and usefulness. For the merely nominal rent of £5 he gave the Company right to hold the ground in perpetuity as a medical or botanic garden. There was one important condition—that the Company should transmit yearly to the Royal Society fifty specimens of new plants grown by them until the number of 2000 had been reached. This delivery commenced in August, 1722, and ended in July, 1774, the total of 2250 being made. It was all the more noble of Sir Hans to do this because he had been at issue with the apothecaries, who had angrily opposed an excellent scheme of his for the formation of free dispensaries to benefit the poor. Could they do otherwise than raise a statue to their honoured friend, which Rysbrach completed in 1737, and which yet stands, much dilapidated by the wear of many summers and winters? Doubtless the baronet was, through his numerous correspondents, often the means of bringing scarce or exotic species to the gardens.

The illustrious Linnæus visited the Chelsea Garden in 1736, and he notes that he was permitted to take away numerous specimens; afterwards he wrote high praise of Miller, and others engaged there, with whom he corresponded. Apparently the grounds were a frequent resort of visitors from all parts of England, and from abroad; seeds or plants were also obtainable sometimes by outsiders. Charles Hatton, in a letter, mentions that he brought away two pots of Passion Flower, and Horace Walpole went there to get seed of the Tea Plant. But the Society never made any large profit from the gardens, and, indeed, has spent a good deal year by year upon them to the advancement of botany and horticulture. Ever since 1837, when Dr. Lindley first called attention to the fact, the increase of houses and factories has been unfavourable to the plants generally, the air being thereby somewhat polluted. The embanking of that part of the river added a little land to the Physic Garden, but it caused the death of an unusually fine specimen of the Oriental Plane.

Amongst those who have had the Chelsea Garden in charge probably Miller is entitled to the place of pre-eminence. Some foreigners, we are told, called him the "Prince of English Gardeners." He rose through his own diligence and skill, making his start under his father in a small market garden at Deptford. During a period of almost half a century, starting from 1722, he worked assiduously at Chelsea, introducing many new species and varieties, also preserving forms which would otherwise have been lost. No doubt, towards the end of his connection with the Apothecaries, he assumed too much power, which led to his retirement. Miller acted as adviser to a large number of noblemen and gentlemen when they were planning or laying out gardens. His "Gardeners' and Florists' Dictionary" went through many editions; it was the result of twenty years' study, and prepared the way for more comprehensive modern works. It was in Miller's time that Elizabeth Blackwell frequently visited the Chelsea Garden while engaged upon her Herbal. William Aiton, who afterwards played a very important part in the history of Kew, was instructed by Miller, one of whose sons subsequently took the post of first curator at the Cambridge Botanical Gardens. Dying in 1771, Miller left a record which led, after some delay, to the erection of a memorial obelisk at Chelsea by the Linnæan and Horticultural Societies.

To those who passed the Apothecaries' Garden in the early decades of Queen Victoria its pair of Cedars were familiar landmarks, survivors of four planted in the reign of James II. Of these two died between 1760 and 1770; the two left attained their full size about 1830. One of these had to be removed in 1878; the other is also dead now, I believe. Of the trees which date from the reign of George III. or earlier few remain. Amongst those presumably introduced by Miller and extant till recently, I may mention specimens of Quercus Suber, an aged Pomegranate, a fine Pistacia terebinthus, a Paper Mulberry, a Maidenhair Tree, and a remarkable plant of Styrax officinale on the wall next Swan Walk. There was a Celtis australis, supposed to be about the age of that Evelyn saw just set at Lee Court in 1683, and a large Magnolia grandiflora, probably a descendant of the first British arrival, which was planted at Exeter, and furnished offshoots to many gardens. Here, also, were some Phillyreas, a shrub formerly much more popular about London suburbs than it is now.

The immediate successor to Miller was Forsyth, the man of the "tree plaister," for which he succeeded in extracting a handsome payment from the Government of his day, though the recipe has really no important value. It was to heal wounds, and also restore vigour to decayed trees, being composed of fresh cow manure, lime rubbish (preferably from ceilings), wood ashes, and a little sand. Any benefit arising appears to have been simply by its action in excluding moisture. After 1784 he entered upon the position of gardener at Kensington Palace, leaving Chelsea, and died in 1804. He had, no doubt, much knowledge of fruit and forest trees. A friend of his, Mr. Wedgwood, is said to have thrown out hints in 1801 which led to the formation of the Royal Horticultural Society.

Amongst many honoured names connected with the Chelsea garden are those of William Curtis, demonstrator for some years, and Dr. Lindley, who held the like position; Isaac Rand, W. Anderson, and others whose memory is yet green. A curious collection of seeds, containing thousands of species, was formed by Rand, but I expect this has perished. Mr. Thomas Moore, F.L.S., was the last curator. He died in 1886, his predecessor being Mr. Robert Fortune. Those who are interested in such structures may still find at Chelsea the relics of old style greenhouses, which remind us of the disadvantages a gardener of last century had to contend with.—J. R. S. C.

EXPERIMENTAL WORK IN HORTICULTURE.

(*Concluded from page* 520, *last vol.*)

A NOTED French scientist has said that "an experiment must have an object, and be based upon an hypothesis." As to the first part of the dictum there can be no question, for it cannot be too clearly understood and laid down what the object really is, for chance exploring is very unsatisfactory work; discoveries are occasionally made, but there is much wasted and misdirected labour. Whether it should be based upon an hypothesis is not so clear, though there is an element of truth in it, as few can adopt any particular treatment or any special substance without forming an idea regarding what the effect will be, even though the result may completely negative the assumption.

It appears to me, as doubtless it has to others engaged in experimental work, that it is important to keep the mind as clear as possible from preconceived ideas, lest one's judgment be influenced in any degree in observing the results. It is also necessary to simplify the object of research, and if there is a difficulty about separating complicated conditions it is best to have several experiments directed to dealing with the various points individually. The same object must also be kept constantly in view in dealing with the same plants, and however tempting it may appear at times to follow up some fresh idea, it is wiser to pass it by until opportunity occurs for prosecuting it on an independent basis. In determining the objects to be studied a thoroughly intimate knowledge of the subject in all its details is requisite. Considerable time may be devoted to investigating what is already well known, or to seeking what is of no practical value whatever. The best results can only be expected where there is

already knowledge and a corresponding desire for extending and strengthening it because its weak points are recognised.

The methods adopted will necessarily depend upon the subjects to be investigated, but there are some general preliminaries that should always be observed. The first is to subject as many individual plants as may be convenient to the same kind of treatment; this increases the value of an experiment greatly, in direct proportion indeed to the numbers of plants dealt with. If it be then possible to watch the growth and variation of the individuals forming the series over a lengthened period of time, still further valuable facts for checking observations and modifying conclusions will be obtained.

The second matter of urgent importance is insuring a uniformity of conditions, and in dealing with plants under glass this can be done to a large extent, for soil, heat, and moisture are under full control. With regard to plants or trees out of doors it is not so easy of accomplishment, as though it may be possible in a small way to have soil specially prepared for plants in the open, on a larger scale the only means is to have a series of careful soil analyses prepared, and then to keep an accurate record of all that is supplied subsequently. Even then, however, there are possibilities of differing conditions interfering materially with the results. Unquestionably the most satisfactory method is to prepare a soil of which the constituents have been determined, and the exact weight should be taken, whether the plants be in pots or beds.

If the plants are to be raised from seeds these should be weighed, and the number to any particular weight determined; while if rooted plants are to be used these should be both weighed and measured, so that as many details as possible may be at command. When water or manures are supplied the quantities must be exactly noted, and the times of application should also be the same for the whole of any experiment. It is obvious that these remarks apply chiefly to cultural experiments, as in cross-breeding there are many conditions that would require discussing at greater length than the limit of this letter will permit, though it may be returned to on another occasion.

A word or two must be given to the noting of results, for this may affect the whole work of the observer. Frequent observations should be taken at regular intervals of the condition of the plants, growth, foliage, and flowers all furnishing characters for record, together with fruit or seeds in the case of some trees and vegetables. No point of difference should be considered too small for notice, and nothing must be overlooked; in fact, the subjects must be studied with eager and intelligent interest.

When the condensing and analysing stage is reached still further care is needed, for in dealing with any form of life it is so easy to found a wrong conclusion on limited evidence, that it is wise to withhold any definite judgment until one series of observations has been confirmed or modified by subsequent experience. To those who have devoted many years to such work it is astonishing, and sometimes confounding, to find the opinions which had been apparently founded upon such sure grounds completely upset by later knowledge.—OBSERVER.

CAMBRIDGE LODGE.

THE collection of Orchids at Cambridge Lodge is so good that one may pay a visit at any time and be sure of finding a number of flowers open to interest them. Then there are the thousands of plants of all kinds that even if they are not in flower must have attention on account of the excellent condition in which they are always to be found. Several journeys have been made at various times, but never without some information having been gleaned, and something of more than average interest seen. There can be no doubt that Mr. H. J. Chapman, the grower, is easily a master of his craft, and that R. I. Measures, Esq., the owner, is an orchidist in the best sense of the word, and grows the plants either for the beauty of their flowers or by reason of the botanical interest attaching to them.

If we accord the premier position to plants that were in flower we must put the Miltonia vexillaria first, for they were, and probably still are, making a really superb display. The forms and colours vary very considerably, and while some are deep in hue and large in size, others are softer and smaller, all being good. The plants as a rule are not very large—such not being desired—but the excellent health they were in, and the splendid spikes of flowers which they produce, prove the correctness of the system of culture adopted. Very conspicuous was a variety with white flowers, the lip of which was of enormous breadth and fine substance. Flaked forms were also to be seen here and there, while others of a rich rose hue were abundant. The plants are

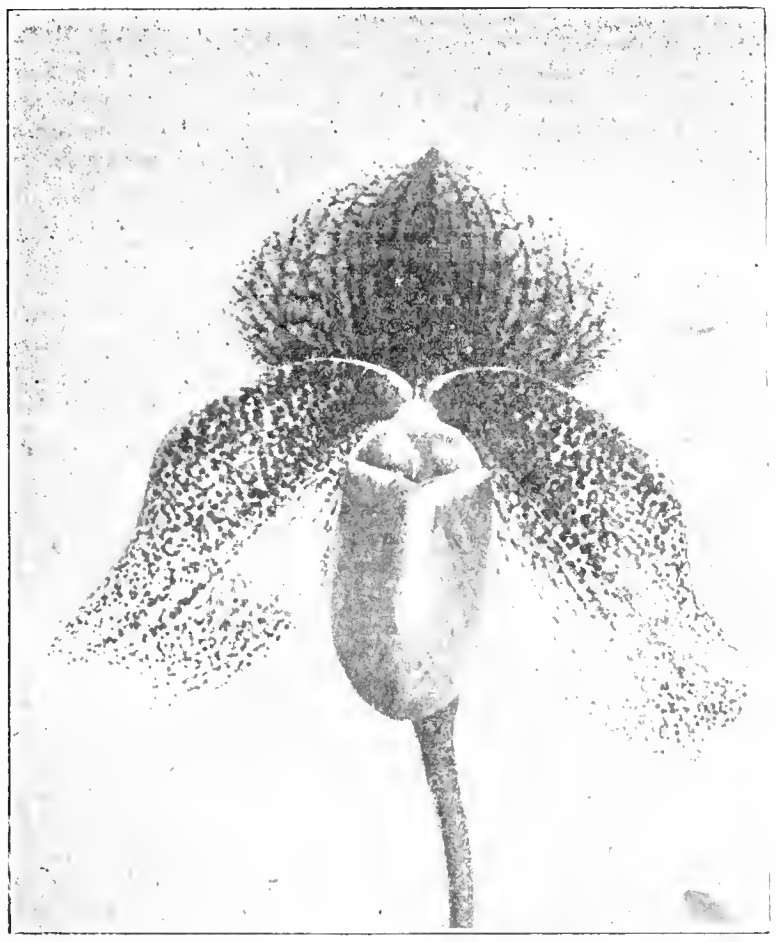

FIG. 4.—CYPRIPEDIUM CHAPMANI MAGNIFICUM.

arranged on the side stages of a square-built structure, and produce a charming sight with their flowers of diverse shades, greyish green leafage, and clean healthy growth.

If the Cattleyas were not making such a brilliant display from a floricultural point of view, they were no iota less interesting. The hundreds of labiatas, amongst which are many varieties of the very best quality, were looking remarkably well, and will probably render as good an account of themselves in the future as they have so often done in the past. Besides these there are hundreds of Mendelis, aureas, Mossiæs, and the several other types, whose chief characteristics were excellence of health. We have a recollection of seeing them in flower at different times, and can speak emphatically regarding the excellence of the stock in this respect. Not a poor weakly specimen was to be seen, while insect pests were equally conspicuous by their absence; all were clean and the foliage was wonderfully strong and fresh in appearance. This, indeed, is one of the most interesting sections of the whole collection.

Cypripediums are one of the specialties of Cambridge Lodge, and the collection is nothing less than a magnificent one. Almost every procurable species, hybrid, and variety is represented, while much of Mr. Chapman's time is spent in endeavouring to produce new ones by the aid of hybridisation. There are thousands of seedlings of various ages that have not yet flowered, and are not likely to do so for some years to come. These, it is anticipated, will give some splendid results. One of the most beautiful of this hybridist's results is the one represented by the illustration (fig. 4), which is named C. Chapmani magnificum. Our figure, while it represents the marking and the form of the flower, is not of life size—in fact, it is reduced considerably from nature. The variety received an award of merit at one of the Drill Hall meetings, and a first-class certificate at the Temple Show. The form was obtained from a cross between C. bellatulum and C. Curtisi. The round dorsal sepal is white, veined and spotted dull crimson, which is the colour of the petals. The pouch is of splendid shape and deep claret in colour. Many other Cypripediums could be named, but space now forbids it.

Exceptionally beautiful were the Lælias that were in bloom when this visit was paid, and the same may be said of the Dendrobiums, of both of which large numbers of plants are grown. Masdevallias make a glorious display as usual. Of these the stock is one of the finest in the country, comprising, as it does, the majority of the kinds and varieties in cultivation. Of the Aërides, the Vandas, the Cœlogynes, and others we cannot now say more than that they are in the most excellent condition—a characteristic of every Orchid on the place.—H. W.

Thunias.

These form a very useful class of Orchids, especially suited to amateurs, being interesting and of easy culture. The requisite heat being at command, a tyro in Orchid growing may take up their culture with every prospect of success, but without this they are better left alone. The warmest house, or what is usually termed the East Indian house, is most suitable, and the lightest and sunniest part of it should be chosen. They require even more sun than deciduous Dendrobiums—in fact, they will, for the greater part of the year, thrive well in an entirely unshaded position.

Imported plants come to hand in the shape of dry stems from a foot to over a yard in length, and these require very little to establish them if collected at the proper season, so as to arrive in a fairly plump condition. Stems that have been produced under cultivation may be potted singly as early in the new year as possible, first of all trimming off the greater part of the old roots, leaving only a few to steady the stems in position. Good spikes may be grown in 48-pots, and unless it is specially desired to have them massed one stem should be placed in each. If larger plants are wanted suitably sized pots may be used, and five or six placed in each, the only fault of this mode of culture being that they do not always flower simultaneously.

A good deal, of course, can be done by choosing stems of as nearly as possible the same size, and with the young shoots at the base in equally forward condition, but even so the result is not always satisfactory. Good drainage and clean dry pots are essential in either case, as the plants when growing freely take a lot of water. For compost take about equal parts of peat fibre, loam, and sphagnum moss, a little of the rougher portion of the latter being placed over the drainage. Mix plenty of finely broken crocks with the compost, but sand is not required. A little dried cow manure, or a sprinkling of an artificial manure of not too stimulating a character may also be added.

The surface of the compost for cultivated stems must not be raised above the level of the rim, but kept below as in ordinary potting. When newly imported a slight rise is advantageous, and in neither case must the base of the stems be deeply buried. Place a neat stake to each stem to prevent rocking about, tie firmly, and place at once in their growing quarters. The atmosphere must be kept very moist, and the young shoots will then lengthen rapidly. It will be noticed that when about 3 inches in length these commence to emit roots, and until this occurs no water should be placed on the compost, though light dewings over the old stems may be allowed. But the roots advance rapidly in ratio with the growth, and soon a full supply will be needed.

When they are well rooted and taking water freely, allow them free exposure to the sun, and as much air as may be without lowering the temperature. By the beginning of June the white-looking spikes should be showing at the apex of the stems, and they rapidly come to maturity. The blossoms being past, the plants may be removed to a light, airy, and warm house to ripen their foliage, the supply of water to the roots being lessened as this falls. During warm weather they may be placed outside with advantage, but an eye must be kept on the weather in August, and if likely to be cold the plants must again be taken inside. Any plants that are not showing spikes by the end of July must be gradually ripened off as recommended for plants that have bloomed.

It is important that the Thunia stems are not kept too cool during the winter, for like deciduous Calanthes they are easily injured in this way. If room is scarce they may be turned out of their pots and hung up in bundles from the roof, but warm and dry they must be. The present month (June) is their flowering season, and it is important that while they are in bloom no water is allowed to touch the flowers. Calanthes even are not more easily damaged in this way, so if left to bloom in their growing quarters great care is needful with the syringe. The best plan is to take them out while in bloom, and arrange them in a drier house. Thunias are readily propagated by division, one stem often breaking into two at the base in spring, and if a more rapid mode is desired the stems that have bloomed may be cut up into lengths of 4 inches or so, and rooted in pots of sphagnum moss.

T. alba is the oldest member of the genus, having been discovered by Dr. Wallich in the Himalayas; it was introduced to cultivation a few years after by Messrs. Loddiges of Hackney. It has pure white blossoms, marked on the lips with purple streaks. T. Bensoniæ is a native of Rangoon, and first flowered in this country in 1867 at Kew. The variety Winniana is more highly coloured than the type, having bright rosy purple blossoms. T. Marshalliana is perhaps the best known of all, and bears pretty white flowers much fringed on the lips with golden yellow hairs, while the hybrid T. Veitchiana was raised by Messrs. Veitch from T. Marshalliana and T. Bensoniæ. It is synonymous with T. Wrigleyana and first flowered in 1885.—H. R. R.

Diamond Jubilee Orchid Trophy.

On Monday, 21st ult., at Messrs. Wills & Segar, South Kensington, was exhibited a magnificent Orchid trophy, arranged by them for Messrs. F. Sander & Co., which consisted of a basket made of wickerwork, standing on a polished mahogany base; in shape trifoliate, beautifully fluted and plaited. From the three corners arose the handle, its three branches forming a dome, surmounting the top of which is a Royal crown, the letters "V. R. I.," 12 inches in length, being arranged beneath the crown, which consists of several hundreds of flowers of Odontoglossum citrosmum, the letters being composed of Epidendrum vitellinum. Spikes of many of all the best and rarest Orchids were used, among them being Cattleya Empress of India, Cattleya Our Queen, and Cattleya Victoria Regina. Odontoglossum Alexandræ were prominent in magnificent pure white spikes, as also were Dendrobium Dalhouseanum. The sprays of the Disa, Stenoglottis, Burmese Vandas, Cattleyas, Oncidiums, Epidendrum, and Lælia served to illustrate the vast floral wealth in Orchids indigenous to many lands over which our Queen reigns. The handles were fitted with flutes or sockets, in which the flowers were placed with the spikes entire. The interior of the basket, which had to be specially constructed, was one central dome, forming a solid foundation, supporting the mass of blossoms, which, perfectly finished and arranged, had a maximum height of 8 feet, with a diameter of 6 feet. By command of her Majesty the trophy was delivered at Buckingham Palace on Monday afternoon.

SWEET PEAS.

There were several large collections of these charming flowers shown the other day at the Drill Hall, and selections from them seemed to be exceedingly difficult. I could not but feel that had one-half of the so-called varieties never been put into commerce our Sweet Peas would have been much the better, and gardening none the poorer. Far too many of these Peas are put into commerce simply to sell, but to assume that they merit names or awards is ridiculous. There lies before me a list of ninety-five so-called varieties. Talk about things undreamt of, who would but a few years since, when we had scarlet and black Invincible, Painted Lady, and a few others, the best not exceeding half a dozen, have imagined that close upon 100 named varieties would ever be evolved?

If any seedsman would have the courage to cut his list down to a fine selection of say twelve only, eliminating any variety on which something new was an improvement, what good service would be rendered to those wishing to buy and have the best only. Who can grow only half of ninety-five varieties, and still farther, who could make a selection from so bewildering a list? Practically it is impossible. Descriptions are florid and enticing; the reality, when seen in the flowers, is very disappointing.

At the recent meeting at the Drill Hall, with so many of these so-called varieties represented, I endeavoured to make a rather liberal selection of colours which pleased me. My tastes may be peculiar, but I prefer the selfs, and indeed, in all cases found these to be the most attractive. Some edged or flaked flowers perhaps catch on with other people, but I find the selfs most favoured. The best whites were Emily Henderson and Blanche Burpee. Either one is good, they scarcely differing. Of primrose or creamy shades, Queen Victoria and Mrs. Eckford resemble, but the former seems to have rather the finer standard. It is, however, not a specially attractive colour. Very beautiful shades of pink and carmine are Lovely, Royal Robe, Countess of Paris, and Meteor. This is one of the loveliest shades or hues found in Sweet Peas, and all the four named are worth growing. Of mauve and blue shades, New Countess, Captivation, Dorothy Tennant, and Emily Eckford are charming. Captivation is particularly beautiful, colour of a rosy blue hue.

Then of red or scarlet shades, Ovid, Cardinal, and Mars are very rich and effective; whilst of deep purple and maroon hues, Shazada, Stanley, and Duke of Clarence are of the best. In ordinary collections, however, about one of these heavy coloured varieties suffices; good blues, pinks, carmines, roses, scarlets, crimsons, and of course whites, about two shades, or slightly diverse coloured varieties of each giving a first-rate selection.

Sweet Peas need to be grown thinly, and small clumps of a few plants well staked and mulched usually give the finest flowers. The harder these are kept cut the better, but where grown specially for cutting it is well to select a site in the kitchen garden. Under any circumstances, seed pods should not be allowed to form. An early sowing may be made in pots under glass in January to plant out in April. A second should be made outdoors in April, and a third for late work early in June, as then fine fresh flowers are had for a long season.—A. D.

Rose Show Fixtures for 1897.

July 8th (Thursday).—Bath, Bedford, Farningham, Gloucester, Harrow, Newcastle-on-Tyne,† and Woodbridge.
,, 9th (Friday).—Glasgow.
,, 10th (Saturday).—Manchester, New Brighton.
,, 13th (Tuesday).—Wolverhampton.†
,, 15th (Thursday).—Norwich (N.R.S.) and Helensburgh.
,, 22nd (Thursday).—Halifax, Trentham, and Bedale.
,, 23rd (Friday).—Ulverstone.
,, 27th (Tuesday).—Tibshelf.
,, 28th (Wednesday).—Chester.*
,, 31st (Saturday).—Liverpool.*

* Shows lasting two days. † Shows lasting three days.

The above are the only dates that have as yet reached me. I shall be glad to insert in the next list any further fixtures that may be sent me, whether of Rose shows or of horticultural exhibitions where Roses form a leading feature.—Edward Mawley, *Rosebank, Berkhamsted, Herts.*

St. Mungo Rose Show.

The third annual Show of the St. Mungo Rose Society will be held in the Fine Art Institute, 175, Sauchiehall Street, Glasgow, on Friday next, when is hoped there will be a capital display of the queen of flowers. The schedule, in which twenty-nine classes are particularised, is a comprehensive one, and while the prizes are not very large, they should be sufficiently good to bring forth fairly strong competition. In and around Glasgow alone there ought to be some ardent rosarians, and it is well known that several of the nurserymen north of the Tweed can stage excellent Roses when it pleases them to do so.

Some British Roses of the Victorian Era.

The finest Roses originated by British rosarians during the reign of Queen Victoria have been for the most part of pink or crimson hue. Among the most prominent of these are Beauty of Waltham and Duke of Edinburgh, natives of Waltham and Cheshunt respectively, from which great rosariums have also come Duke of Teck, Duke of Albany, Crown Prince, Cheshunt Hybrid, Salamander; Waltham Standard, a handsome variety of recent origin, somewhat akin to A. K. Williams; Carmine Pillar, a single crimson climber of great beauty; and Princess May, described as a pale pink Gloire de Dijon.

Mr. B. R. Cant of Colchester has given us Prince Arthur, a brilliant variety, derived from Général Jacqueminot. Mr. Harry Turner has come to us from the Royal Nurseries, Slough; while to Mr. Cranston of Hereford we are indebted for Sir Garnet Wolseley and the Crimson Bedder, the former of which I regard as being quite distinct from its so-called synonyms, in which opinion I by no means stand alone; while the latter is a variety of charmingly bright aspect and exquisite fragrance, and therefore of great value for garden cultivation.

The late Mr. Henry Bennett's Captain Hayward is also a very beautiful and richly perfumed Rose. Among pink Roses of British origin the most precious are Mrs. John Laing, Marchioness of Downshire, and Mrs. Sharman Crawford, of which the last-mentioned variety, though not the grandest in dimensions, is the most graceful in habit and artistic in form. For this reason I prefer it to Mrs. John Laing.

The two most valuable white Tea Roses raised in England during Victoria's reign are Devoniensis and Souvenir de S. A. Prince, the latter of which I find more reliable than any Rose of its special colour I possess. No continental yellow Tea with which I am acquainted is superior to Medea, a superbly endowed native of Waltham Cross.—David R. Williamson.

Roses at Kew.

Anyone visiting Kew during the summer months cannot fail to admire the masses of colour produced by the groups of Roses in the "Rose garden" near the pagoda. Formerly a long cutting from which sand and gravel had been taken, it was, eighteen months ago, transformed into its present condition, and now forms one of the most popular features of the Gardens. The centre is a broad grass walk, flanked on each side with terraces and bays, the soil being kept in position by large tree butts placed roots outward.

The Roses which are used are the best flowering species, with a few of the rambling semi-double varieties; also dwarfs, such as "White Pet," which do admirably in the crevices between the tree roots. Massing is done on an extensive scale, each separate bay or terrace being devoted to a single species or variety.

Some idea of the effect produced by these masses may be gathered from the fact of twenty to thirty good-sized plants of R. lutea being planted together, seventy plants of Crimson Rambler, and so on. Rosa multiflora is made use of at the back of the butts, on the topmost terrace, where it is allowed as much room as it likes for development. A hybrid between the last named and a H.P. forms a group close to R. multiflora; it has pretty semi-double pink flowers, which are very freely produced. R. rugosa and a collection of the newer hybrids from this well-known species are to be seen. Two of the best of the hybrids are R. Blanc de Coubert, a very pretty semi-double white, with flowers as large as those of R. rugosa, and a red known under the name of Mrs. Anthony Waterer. The latter is an exceptionally vigorous grower and free flowerer, and as it becomes better known is sure to be eagerly sought after. A group of twenty or more plants may be seen at Kew.

A large group of R. spinosissima, with its many coloured single and double varieties, may be seen. Perhaps the most showy of the varieties of this species is R. spinosissima var. altaica, which grows taller and produces larger flowers than the type. Several plants of Carmine Pillar are planted at the foot of a large Holly, the dark foliage of which makes a fine background for the pretty carmine flowers. The white-flowered, dwarf-growing Japanese Rose, "Rosa Wichuriana," forms a mass on a bank; the pink-flowered R. setigera (a N. American species) makes a beautiful picture in another place; while many other equally good species and varieties are to be seen.

The plants are nearly all on their own roots, and are planted in heavy clay soil mixed with some of a lighter nature, and appear perfectly happy. Anyone wishing to grow a selection of Roses of this class cannot do better than visit the Rose garden at Kew during the summer months.—D. K.

Roses for Town Gardens.

We think we can best answer "F. W.'s" question regarding Roses for town gardens by reproducing an article from the pen of Mr. Wm. Paul which appeared in these columns a few years ago, and which will be found thoroughly reliable.

So much has been written on Roses of late that one feels it almost necessary to offer an apology for taking up the pen to add to the already abundant literature on the subject, and yet day by day we receive letters seeking information on various points in Rose culture, which show that the writers have not met with the information they stand in need of, or have failed to understand it. The most numerous queries that reach us relate to the management of Roses in and around large towns, and to that phase of the subject I propose at the present moment to give my attention.

Even in and around large towns the disadvantages which vegetable life have to contend with vary to a considerable extent. Dense smoke is not always the most inimical of these. The existence of certain chemical works filling the air with the noxious vapours they exhale are often more pernicious. We have known Roses and other plants prosper fairly well amidst dust and smoke, but succumb rapidly after the working of a manufactory of chemicals. If the latter exist extensively, and the consequences of the mischief they produce cannot be modified by scientific or other means, we fear the cultivation of Roses within their influence will give little satisfaction. But mere smoke, the smoke arising from the consumption of ordinary coke and coal, unless in unusual quantities, may be met and negatived to more or less extent by proceedings which, if costly, may yet compensate for the trouble and expense incurred.

In very smoky districts we would not recommend the cultivation of Roses otherwise than under glass. A span-roofed house, the slopes facing east and west, the top lights removeable, is recommended for this purpose. It should be heated with 4-inch pipes, and the plants may be either planted in beds or kept in pots. In districts less smoky the plants may be placed in beds or borders out of doors. As in both cases it is the pursuit of Rose growing under difficulties, no point should be missed that is likely to minimise the existing disadvantages. A good soil should be secured for them to grow in. A careful regulation of the temperature and moisture should be secured for the plants indoors, and shelter in spring and winter be provided for those out of doors. Cleanliness is in both cases very important. Not only keeping the plants free from insects by smoking or washing, but keeping the leaves free from sediments of various kinds should be sedulously attended to. A good syringe is an indispensable instrument for this purpose, and a solution of softsoap and quassia forms an excellent wash. Never allow dirt of any kind to remain settled on the leaves, nor allow any insects to rest there long enough to look upon the plants as a home.

Perhaps one of the greatest mistakes made when about to grow Roses in smoky and other unfavourable districts is in an unfortunate or injudicious choice of plants and sorts. Free-breathing Roses are wanted for smoky districts, as free-rooting Roses are wanted for heavy soils. But little attention has hitherto been paid to these distinctions, although the practical cultivator knows how important they are. First let me offer a list of sorts that appear most likely to flourish in and around large towns.

Fifty Roses for Very Smoky Districts to be Grown Under Glass.

Moss.—Crimson Globe and Zenobia.

Hybrid China, &c.—Charles Lawson, Chénédolé, Coupe d'Hébé, Paul Perras, Paul Ricaut, and Paul Verdier.

Hybrid Perpetual.—Albert la Blotais, Alphonse Soupert, Anna Alexieff, Anna de Diesbach, Baroness Rothschild, Boule de Neige, Captain Christy, Charles Dickens, Charles Lamb, Countess of Rosebery, Countess of Oxford, Crown Prince, Dupuy Jamain, Edward Morren, Elizabeth Vigneron, Ella Gordon, Général Jacqueminot, Heinrich Schultheis, Inigo Jones, Jean Rosenkrantz, John Hopper, Jules Margottin, La France, Madame Cesar Brunier, Madame Clemence Joigneaux, Magna Charta, Marchioness of Lorne, Merveille de Lyon, Mrs. John Laing,

Paul Neyron, Pride of Waltham, Ulrich Brunner, Victor Verdier, and Violette Bouyer.

Noisette.—Bouquet d'Or.

Tea-scented and Hybrids.—Cheshunt Hybrid, Climbing Niphetos, Gloire de Dijon, Madame Berard, The Bride, Sunset, and White Lady.

Fifty Roses for Less Smoky Districts for Beds or Borders Out of Doors.

Moss.—Baron de Wassenaër and Captain Ingram.

Damask.—La Ville de Bruxelles.

Alba.—Celestial.

Gallica.—Cynthie, Duchess of Buccleuch, Ohl, and Surpasse Tout.

Rugosa.—Mme. Georges Bruant.

Perpetual Scotch.—Stanwell.

Hybrid Perpetual. — Alphonse Soupert, Anna Alexieff, Antoine Mouton, Baroness Rothschild, Boule de Neige, Centifolia Rosea, Coquette des Blanches, Dr. Andry, Duke of Edinburgh, Gabriel Tournier, Garden Favourite, Général Jacqueminot, Gloire de Margottin, Glory of Waltham, Hippolyte Jamain, Jean Cherpin, La Duchesse de Morny, La France de '89, Lord Bacon, Mme. Isaac Pereire, Magna Charta, Mrs. John Laing, Paul Neyron, Prince Arthur, Princess Louise Victoria, and Prosper Laugier.

Bourbon.—Mme. Baron Veillard and Mme. Desprez, Robusta, Sir J. Paxton, and Souvenir de Malmaison.

Noisette.—Aimée Vibert, Céline Forestier, Rêve d'Or, and Wm. Allen Richardson.

Tea-scented and Hybrids.—Gloire de Dijon, Grace Darling, Pink Rover, Reine Marie Henriette, and Waltham Climber.

Thus far of sorts: we have still a few words to say with regard to the selection of plants. Above all things avoid plants that have been made tender by the employment of excessive heat. In May of this year we were in a house of young Roses where the thermometer stood at 96° in the shade at half-past six o'clock in the evening. The grower very truly said "that was the way to make them grow." But is it the way to produce plants that will flourish in the future under the ordinary conditions of plant life? We think not. What sort of men and women should we expect our children to become if in their infancy they were coddled in this manner? Again, we have heard of plants from the north of Britain recommended on the ground that "they are hardier than those brought up in the south." This is a fallacy. The ripening of the wood is, as all experienced persons know, the true test of hardiness, and the shoots of Roses are not likely to ripen better in the north than in the south. Once more, plants that are overfed for the purpose of getting large and fat flowers for exhibition, and plants that are underfed through indolence or greed of gain, are equally objectionable. Everywhere, and always, but in town gardening especially, the purchaser should look for moderate well-ripened wood when purchasing his Roses; he would do so if about to purchase Grape Vines or Peach trees, and this state of the wood is as important in the one case as in the other.—Wm. Paul, *Pauls' Nurseries, Waltham Cross, Herts.*

RYECROFT BEAUTIES.

The beauties of Ryecroft are very numerous, and extremely varied both in character and in their time of reigning. In the autumn the visitor to Ryecroft Nursery would go to see the Chrysanthemums, and be so charmed with them that he would have eyes for nothing else. On another occasion he might go to be dazzled by the glorious beauty of the decorative Pelargoniums, or the more fiery Zonal, the softer hued Ivy-leaf, the graceful Fuchsia, the charming tuberous Begonia, or the varied Petunia. In all of these lie the beauties of Ryecroft, and the visitor who goes just now will come in for a fair share of them, and acknowledge, as the writer recently did, that the time devoted to Mr. H. J. Jones' Nursery at Hither Green, Lewisham, had been well spent from an educational as well as a social point of view. Besides the hearty Mr. H. J. Mrs. H. J. was met, and if her greeting were not so boisterous as that of her husband it was none the less sincere, especially as it was followed by an invitation to an excellent tea, in which home-made Tomato jam and Tomato ketchup, with home-grown Cucumbers, figured conspicuously.

But with our French cousins let us say *revenons à nos moutons*, which being literally translated means "let us return to our sheep"—that is to say to our flowers. We may first look in at the Begonias, which, like everything else here, are grown by the thousand in long span-roofed houses. Structure after structure is absolutely filled with plants, while in frames there are more in boxes, besides several rods of ground occupied with plants, the quality of which as open-air flowers it is desired to test. It will be remembered by many readers of these notes that this grower staged a group of Begonias at the Temple Show, so that they will know to what a state of excellence the plants are brought; but well as they looked under canvas they certainly show better at home, and produce a really superb display. There one can see at a glance the characteristic growth of each variety, a thing that it is practically impossible to do at any flower show, and all gardeners recognise the importance of knowing something of every plant they are about to grow.

Though one plant will be tall and another dwarf, there is one thing in which they are all identical, and that is their health. Every one has its handsome leafage in the best possible condition, and tells plainly how well their cultivation is understood. Amongst all the thousands a weak plant was not to be seen. There were single varieties and double ones, named and unnamed, from the small one to the large, and representing all colours (except blue) from pure white to the deepest and most velvety crimson. Taken as a whole, the collection is one of the finest the writer has seen, and it is so good that everyone who can do so should make a journey to see it. It is not proposed to mention any names, either of single or double, for the simple reason that where all are of excellent quality the task of making a small selection is much too difficult, and Begonias are essentially flowers which growers should select for themselves, so as to insure getting the colours and shapes that they most admire.

From the brilliancy of the Begonia we turned to the softness of the Petunia. Of these the number of plants grown is very large, though it does not, of course, assume such proportions as the Begonias, and the range of colour is exceptionally wide, at any rate amongst the doubles which were seen. The plants, as a rule, were not of great size, but they produced flowers of exceptional beauty of form, substance, and colour. As Mr. Jones is making a speciality of them, we may hope to see some novelties of merit from this source in future years. Then there are the Fuchsias, of which a selection of upwards of three dozen named varieties, comprising both single and double, is catalogued. In addition to these standard varieties, as they may well be termed, new ones from all available sources are constantly being tried, and amongst those that were in flower when this visit was made were several that gave promise of considerable merit, either in size or colour of the flowers. These plants are deservedly becoming more and more popular for flower gardening in the summer, and Mr. Jones wisely pays special attention to their adaptability for this purpose.

The beauty and quality of the Ivy-leaved Pelargoniums at Ryecroft has been referred to in the Journal by other writers in previous years, but they deserve another word or two now. The chief points in the collections are the size of the individual flowers, large numbers of blooms to a truss, and the distinctness of the colours. In Ryecroft Surprise with its immense blooms we have one of the finest varieties in cultivation, the deep salmon pink hue of its flowers making it singularly pleasing. Superb is the new form known by the name of Achievement, which is the result of a cross between Souvenir de Charles Turner and a pure White Zonal, partaking of the characteristics of both. The short, sturdy growth is that of a Zonal, while the leafage resembles the Ivy-leaf, as do the handsome trusses of soft salmon pink flowers. It is one of the most decided acquisitions that have been placed before the horticultural world of late. Others there are of striking beauty, and of the first merit, but the two mentioned must suffice for the time being, as to do justice to the collection would mean the writing of a special article, and the description of two or three dozen varieties. Besides those in commerce there are new ones under trial, but only one or two promise to be up to the standard of excellence adopted by Mr. Jones.

Turning now to the Show, Fancy, and Decorative Pelargoniums, we find the most glorious display. The plants that have been named previously were all beautiful, but none of them approached the glorious spectacle presented by these in a large span-roofed house. The broad centre stage and the side and end stages were absolutely full of plants of all the best varieties in cultivation, and as all of them were carrying several trusses of flowers of white, pink, rose, scarlet, and crimson colours, with the intermediate shades, the effect can be imagined. There were old forms and new, small plants and large, dwarf and tall, light and dark, all placed carefully in the position where their best feature would be brought into the greatest prominence. Thus no two similar colours were brought together, but were so chosen that each assisted materially in enhancing the charms of its neighbour. Much had been heard of the Ryecroft Pelargoniums, but no idea had been formed of the magnitude and the quality of the collection, which came as one of the greatest of the several Ryecroft surprises to the writer of these brief notes, who had previously only visited Ryecroft once, and that during the reign of the autumn queen.

To speak of the varieties is a matter with which it is not easy to deal, as the average quality is so excellent. Endeavour will, however, be made to mention half a dozen only, as being amongst the cream of the whole, though a personal inspection when buying is likely to prove much more satisfactory than a selection made by another. First of all must be placed Eucharis, which everyone is sure to admire. The bloom is large, pure white in colour, and excellent for use in a cut state. Mr. H. J. Jones is the most profuse flowering variety in the whole collection, of which the colour is bright rosy red with a crimson blotch on the upper petal, while the blush white of Mrs. H. J. Jones makes, as it should do, an excellent companion. Mrs. Gordon, a lovely delicate blush, is not yet in commerce, but is certain of popularity. Mrs. W. Wright is superb. The colour in the early stages is soft rosy blush, passing to pale blush with age, while Victoria Regina, a pure white, will hold its own for some time to come. The many others of equal merit cannot now be named for the simple reason that all are excellent, and one cannot therefore choose.

It is now time to draw these notes to a close, though mention has not been made of all the beauties of Ryecroft. Some day in the future another invitation may be forthcoming, which will, unless something very extraordinary occur, be promptly accepted, for the kindness of Mr. and Mrs. Jones is not likely soon to be forgotten by—Stranger.

Notes & Gleanings

EVENTS OF THE WEEK.—For the events of horticultural interest to be held during the forthcoming week we call the attention of readers to the list of show fixtures that will be found on page 23. The Committees of the Royal Horticultural Society are to meet in the Drill Hall on Tuesday next.

—— THE WEATHER IN LONDON.—The heat in the metropolis of late has been very oppressive. The temperature may not have been so high as we have had it, but lack of air has made the atmosphere very close. There have been winds occasionally at night, but practically no rain has fallen for several days. At the time of going to press on Wednesday it was bright and warm.

—— ROYAL HORTICULTURAL SOCIETY.—The next Fruit and Floral meeting of the Royal Horticultural Society will be held on Tuesday, July 13th, in the Drill Hall, James Street, Westminster, 1 to 5 P.M. A lecture on "Mutual Accommodation between Plant Organs," will be given by the Rev. Prof. Geo. Henslow, M.A., F.L.S., at three o'clock.

—— SOUTHAMPTON SHOW.—The Royal Horticultural Society of Southampton will, as usual, hold its annual exhibition at Southampton Common, on July 31st, and August 2nd (Bank Holiday). It is regrettable to learn that the Council has had, owing to financial difficulties, to curtail its prize list, which remains, however, a very good one. There are classes for plants, flowers, fruits, and vegetables, the total number being eighty-eight. Notwithstanding the necessary slight reductions we trust the show will prove to be an excellent one, and receive such support as to bring financial matters on to a sounder basis, when the Council would doubtless at the next show offer the same generous privileges as it has done in previous years. Mr. C. S. Fuidge, "Heckfield," 17, New Alma Road, Southampton, is the Hon. Secretary, to whom all communications should be addressed.

—— HAILSTORMS.—On Thursday, 24th June, hailstorms of terrible violence occurred throughout Essex, Middlesex, and parts of Hertfordshire, doing severe damage to glass houses on over sixty nurseries at Chelmsford and district, Ponders End, Enfield, Enfield Highway, Waltham Cross, Hellesden, and Harrow; 21-oz. glass of all sizes was completely riddled, and considerable damage was done to the Grapes, Cucumbers, Tomatoes, and all kinds of plants and Ferns. We are glad to hear that thirty nurserymen who suffered loss were insured with the Nurserymen, Market Gardeners', and General Hailstorm Insurance Corporation, of 2, King Street, Covent Garden, who immediately assessed the damage done and paid the claims six days after. One nurseryman lost 70,884 square feet of 21-oz. glass, and his claim at 3d. per square foot amounted to £886 1s.

—— NATIONAL CHRYSANTHEMUM SOCIETY'S ANNUAL OUTING.—I have the pleasure to inform you that the annual picnic and outing will take place on Monday, July 19th. The members will travel to Henley-on-Thames by Great Western Railway, and launches will be waiting at the Royal Hotel landing stages to convey them to Greenlands, the residence of The Hon. W. F. D. Smith, M.P. Dinner and tea will be provided in a spacious marquee in the grounds, and during the afternoon there will be an excursion down the river, returning to Greenlands for tea. Ladies are specially invited. The charge for the day—including return fare from Moorgate Street and Paddington to Henley and back, launches, with dinner and tea—will be 10s. to members, and 11s. to non-members. Members not using railway tickets, but joining the party at intermediate stations, or at Henley, will pay 7s. 6d., and non-members 8s. As this is certain to be a highly popular trip, combining delightful grounds and gardens, with a water journey on the Thames, early application must be made for tickets, so that the necessary arrangements may be made, more especially in reference to ample accommodation by rail, and for dinner and tea. Members requiring tickets from Moorgate Street, which will be available from any intermediate station to Paddington, must state this on application, and they can alight either at Praed Street or Bishop's Road for Paddington. —RICHARD DEAN, *Secretary*, *Ealing*.

—— GARDENING APPOINTMENT. — Mr. J. Roberts, formerly gardener to the late Baron Lionel de Rothschild, Gunnersbury Park, has been appointed head gardener to the Duke of Portland, Welbeck Abbey, in place of Mr. Horton, who is retiring.

—— BOTANICAL SOCIETY FOR PERTH, WESTERN AUSTRALIA.—A botanical society has recently been established at Perth, West Australia, and has been given the designation of the Mueller Botanic Society, as a tribute to the memory of the late Baron von Mueller, who spent the best part of his life in investigating the plants and other products of Australia. Sir John Forrest has been elected President of the new Society, Mr. Wittenoom and Mr. Leake Vice-Presidents, and Mr. Skews Secretary.

—— PREPARING PEARS FOR MARKET.—It is said that the finer class of Pears are much more profitable when each fruit is wrapped separately in paper than when packed, as fruit is generally packed, in barrels. Just how this causes a better preservation of their flavour, says "Meehan's Monthly," is not known, except on the general principle that Pears ripened in the dark are always better in flavour than those exposed to the light; and the paper probably adds to the exclusion of the light.

—— SPRAYING.—At the beginning of a useful bulletin on spray-pumps and spraying, just issued by the New York Experiment Station, is the following important notice:—Do not spray trees and plants when in bloom. It is in no instance necessary or desirable. Not only is this practice liable to injure the delicate parts of the flower, but, what is even more important, it poisons the bees and other insects that are our friends. It would be impossible to grow some of our fruits in commercial quantities without the aid of insects in fertilising the blossoms.

—— THE INTRODUCTION OF LILIUM AURATUM.—I should like to correct an error into which I appear to have fallen with regard to the first blooming of this grand Lily. The error arose not from a lapse of memory, for I have believed in my statement for the last thirty-five years; but Mr. Harry J. Veitch has kindly written to me to say that it first bloomed with the Chelsea firm, and not with Mr. Standish. How I came to have made the mistake I do not know, but, as I have said, ever since the opening of the Royal Horticultural grounds in South Kensington the impression has remained on my mind. Mr. Veitch says that there was a great race between his brother, Mr. John Gould Veitch, and Mr. Robert Fortune as to who should be first in the field, and that his brother won the race.—D., *Deal*.

—— FREAKS OF TOMATOES.—I was recently looking through an enthusiastic amateur's collection of Tomatoes when I noticed two plants behaving in a very unusual manner. Out of some sixty showing every indication of proper cultural requirements, two had just made six leaves, and instead of growing in the ordinary way they are both crowned with an enormous truss of bloom. On one plant I counted twenty-four fruits just set and thirteen expanded blooms. The other is not quite so large. The plants are all growing in 10-inch pots, and, with the exception of these two, are from 3 to 4 feet high. The kind grown is Sutton's Main Crop. It would be interesting to know if any of your readers have had similar experience, either with the above named or any other variety.—J. C., *Lancashire*.

—— ISLE OF WIGHT HORTICULTURAL IMPROVEMENT ASSOCIATION.—The monthly meeting of the above Association was held at Shanklin on Saturday, July 3rd. Dr. J. Groves, B.A., presided. A thoroughly practical paper on the cultivation of Gloxinias was read by Mr. N. Jolliffe, Woodside Gardens, Wootton, who dealt with the history, propagation, and general treatment. The exhibits were numerous and of excellent quality. Messrs. J. Peed & Sons, Upper Norwood, staged Gloxinias and Streptocarpus; Messrs. J. H. and M. Silsbury, Shanklin, a fine collection of Violas and Cannas; Mr. W. J. Hayles, F.R.H.S., Wootton, Poppies; Mr. F. Silsbury, Shanklin, a stand of twelve Roses; Mr. J. H. Perkin, gardener to G. W. Drabble, Esq., Los Altos, Sandown, Gloxinias and a dish of Polegate Tomato, for which he received the Association certificate of cultural merit; Mr. W. W. Skeath, gardener to Miss Mitchell, Macrocarpa, Ventnor, a fine collection of seedling tuberous Begonias (single and double), for which he received the Association certificate of cultural merit; and Dr. Morgan of Woodside, Wootton, a huge Gloxinia. The members are having an excursion to Brooke House, the residence of Sir Chas. Seeley, Bart., on the 14th of July. It was decided to still further extend the interest of Island horticulture by awarding the Association certificate of cultural merit to the local shows for the best exhibit in each show. Several new members were elected, which brings the total number on the books to 161.

—— JUNE WEATHER AT HODSOCK PRIORY.—Mean temperature, 59·5°. Maximum in the screen, 82·4° on the 13th.; minimum in the screen, 37·2° on the 10th; minimum on the grass, 30·1° on the 10th. Sunshine, 136 hours, or 27 per cent. of the possible duration. Rainfall, 2·76 inches. Rain fell on sixteen days. A very mild month, especially at nights. Heavy showers at times, and some very stormy weather in the third week.—J. MALLENDER.

—— WEATHER IN SOUTH WALES.—The following is a summary of the weather here for the past month:—Rainfall, 3·81 inches; maximum, 0·98 on the 8th. Rain fell on twelve days. The wind was in the W. and S.W. on twelve days, and in the E. and N.E. on seven days. There were seven sunless days. Highest reading, 92° on the 3rd; minimum, 37° on the 1st. Average maximum temperature, 69·9°; minimum, 47·6°.—WM. MABBOTT, *Dowlais*.

—— JUNE RAINFALL AT HAYWARDS HEATH.—The total rainfall at New England Road, Haywards Heath, Sussex, for June was 2·09 inches, being 0·29 inch above the average of the district. The heaviest fall was 0·72 inch on the 8th; rain fell on eight days. The maximum temperature was 87° on the 11th, 12th, and 24th; the minimum 43° on the 17th. Mean maximum, 75·08°; mean minimum, 51·26°. Mean temperature, 63·17°, which is 3·12° above the average of nine years.—R. I.

—— THE WARMING OF RESIDENCES.—It may at the first glance perhaps be thought that the subject indicated is somewhat unseasonable now, but a moment's reflection will satisfy that it is not. For averting discomfort and ill health in winter, the result of excessive cold, action should be taken in the summer, so that all may be in readiness when the time of trial comes. Recognising this, Messrs. Richardson & Co. of Darlington have published what they modestly term "a few suggestions." Very good suggestions they are, and conveyed in attractive guise—namely, photographic illustrations of private residences and public buildings which have been made proof against excessive cold in a safe and effective manner, a matter which has not received the attention it deserves in this country.

—— ANCIENT SOCIETY OF YORK FLORISTS.—The eighteenth annual Chrysanthemum, fruit, and vegetable show of this Society is to be held in the Fine Art Exhibition Building, York, on November 17th, 18th, and 19th, when it is anticipated there will be an admirable display. In the schedule now before us we see that there are fifty-six classes devoted to Chrysanthemums, in some of which the prizes are excellent. For example, in the class for thirty-six Japanese and eighteen incurved, distinct, prizes of £10, £5, £3, and £2 are offered, while to the first is added the "Citizens' Challenge Prize" of the value of £20. A gold medal and £10 are offered for the best group of Chrysanthemums arranged for effect with the aid of foliage plants in a space not exceeding 120 square feet, while a gold medal and £8 will be handed to the exhibitor who stages the best group of Chrysanthemums alone, "cultural excellency only to be the basis of merit." There are thirteen classes for fruits and twenty-seven vegetables, in all of which substantial prizes are given. The hardworking Secretary is Mr. E. Lazenby, 13, Feasegate, York, from whom schedules and full particulars may be had on application.

—— SCORPION AND FLOWER.—One evening last February, while sitting in the verandah of my house at Aden, my attention was drawn to an object advancing across the floor, which seemed to be some peculiar leaf, insect, or phasma. On looking at it closer I saw it to be a scorpion (identified by Mr. Pocock from my description as Parabuthus liosoma), which was holding over its back by one claw a large blossom of Poinciana regia, known in Aden as the White-gold Mohur tree. Its tail, curled over its back, further assisted in retaining the flower in position. The nearest tree from which it could have been obtained was at least 30 feet away, and to bring it the scorpion must have carried it over a low stone parapet and up two or three steps, so that intention seems to be proved. What that intention was it is hard to define. Hardly for concealment, for the size of the flower made it more conspicuous; besides, it was night. If it was the lamp light it wanted to avoid, it is necessary to assume that, finding the light too strong, it went back to get the flower. It could hardly be as food, for scorpions are not known to live on vegetable substances; nor, as far as I know, do they construct nests. I regret that I did not allow the creature to reach its destination, and so ascertain its intention; but, unfortunately, I gave in to my first impulse and crushed it. My wife, adds the writer, suggested that perhaps it was going to a wedding, but this explanation is more poetical than scientific.—A. NEWNHAM (in "Nature").

—— PINK ALBINO.—The Pink shown under this name by Mr. J. Lamb, Burton Joyce, Notts, at the last meeting of the Royal Horticultural Society, differed from the other white varieties in having smooth Carnation-like petals. The raiser now sends us a few blooms for inspection, saying, "It is a good grower, free bloomer, and forces well." The flower is one of much beauty, and with such desirable attributes as those mentioned should secure considerable popularity. The Floral Committee of the R.H.S. recommended an award of merit.

—— SHRUBS FOR LIVERPOOL.—A departure, which might well be copied by other local authorities, has recently been adopted by the Parks and Improvement Committee of the Liverpool Corporation. A number of shrubs grown in large tubs have been placed round the base of the Wellington column in that town, and it is understood that a considerable number are to be placed in other prominent and appropriate spots in the city. Nearly all our large towns have bare uninviting spaces, that might be made much more attractive by the use of tubbed plants.

—— REDUCTION IN POSTAGE.—The reductions that have been made in the rates of postage will have much effect on the pockets of flower senders. The rate for letters is now a halfpenny for 2 ounces throughout, subject to the condition that no letter will be charged less than a penny. The new parcel post rate is 3d. for the first pound, and 1d. for each subsequent pound, with this modification—that the tenth and eleventh pounds are carried together for 1d. There is now no charge for the delivery of telegrams at any place within three miles of post office. For larger distances than three miles the charge for delivery, commencing at 1s., will proceed at 3d. per mile.

—— LAWS AGAINST WEEDS.—A bulletin just issued by the United States Department of Agriculture goes to show that in twenty-five of the States of the Union laws are in force—or at all events in existence—with the object of putting down the growth of weeds. In some cases, as in California, Delaware, and Kentucky, the law is directed against only a single species, usually the notorious Canada Thistle. Other States, such as Minnesota and Ohio, prescribe as many as fourteen species of weeds. The Canada Thistle is on the black list in twenty-one out of the twenty-five States, whilst six States legislate against the Russian Thistle. Despite its name, the Canada Thistle is an introduced plant in North America. It is, indeed, says a contemporary, a native of Britain, where it is known as the Creeping Thistle (Carduus arvensis). It grows to a height of from 2 feet to 4 feet, and possesses dingy purple flowers, with a more or less cottony stem. There is, as a matter of fact, no commoner Thistle in Europe and Asia, whence it has accompanied cultivation to all parts of the world. The so-called Russian Thistle is not a Thistle at all. It is a member of the natural order Chenopodiaceæ, to which the Mangold, Beet, Spinach, and Good King Henry belong.

—— HARDY FLOWERS.—"A Talk about Hardy Flowers" was given to an average attendance of the members of the Wakefield Paxton Society on Saturday, June 26th, by Mr. John Wood of Kirkstal Nurseries. Major Taylor presided, and Mr. John Burton was in the vice-chair. The address was both instructive and interesting. Mr. Wood decided to ignore the paper he had written, and after a few preliminary observations, proceeded to explain a number of plants he had brought with him, as well as flowers and leaves of others which he grows, concluding by naming a number of specimens which were brought by members. It seemed strange, he said, that hardy plants should have got shirked and left in the rear so far, making an apology almost necessary for their introduction into the modern garden. He often heard gardeners object to hardy flowers because either they had the wrong sorts or had put them in the wrong places. They must not be in too conspicuous a place. In a large garden they could have a large variety at will, but in a small garden the selection must be choice and carefully made. Style was the leading idea with many, and in certain places it was necessary, but he thought it was carried too far. If they went into the hardy or Alpine mode of gardening they would find that they could not practically go on with style because this mode was something that could not be copied, inasmuch as there was such difference in soil, climate, and environment to contend with. In the case of Geraniums and Petunias, for instance, they could go on repeating them anywhere with a green foil, but before planting such kinds as he had there they must study their habitat ere they planted them, and to be interested in them they must know them. There were about 3000 species and varieties of hardy plants, including the florist's varieties. The lecturer then handed round to the company the specimens he had brought, giving their common and botanical names, and explaining their habitat.

—— Woodlands Vale, Ryde.—This beautifully situated mansion is the residence of Lieut.-General Somerset John Gough Calthorpe, Chairman of the Isle of Wight County Conncil. The extensive gardens at Woodlands Vale are in the capable hands of Mr. W. Heath. Peaches, Nectarines, and Grapes under glass promise well both for quantity and size; Melons and Cucumbers have been yielding abundantly; the kitchen garden crops are in the pink of condition. Amongst the many varieties of Peas grown Sutton's Excelsior has given entire satisfaction, and merited a permanent place in this garden. It is of dwarf habit, free bearer, fills well—two or three pods I opened each had six to eight peas in—colour and flavour realise expectations. Apples and Pears are about average, with extra crops of Strawberries, Gooseberries, Currants, and Figs. Amongst the many varieties of Strawberries grown Mr. Heath speaks very highly of Royal Sovereign, and is propagating it very largely. In the flower garden a magnificent show of Roses is to be seen; whilst a judicious admixture of bedding plants, including Geraniums and Lobelia, gives a charming effect to the whole place. —S. H.

—— Packing Cut Flowers.—Light wooden boxes from 3 to 5 inches deep are much better for packing cut flowers than pasteboard boxes. With the least rough handling, especially if they are in a damp condition, the latter may become crushed and the flowers spoiled. Having selected a suitable box, place a layer of sheet wadding in the bottom, seeing the corners are nicely fitted, and over this place waxed paper. Allow the flowers to stand in water for some time before packing, and when the stems have taken up all the water that is possible, lay them in smooth even rows on the waxed paper. Let the stems of the npper row meet the blossoms of the lower, and continue packing close until the box is full. Then lay another piece of waxed paper over the top, with a layer of sheet wadding next to the lid. It is of the greatest importance to have the box packed full. If the flowers do not quite fill it see that the spaces are filled with the wadding. If Roses are to be sent do not select the full-blown ones, but firm, half-opened buds. It will not be necessary to sprinkle them with water if the stems have absorbed a quantity of moisture; being covered closely from the air, they will not wither as they would if exposed.

—— Emigrants' Information.—The July circnlars of the Emigrants' Information Office and the annual penny handbooks show the present prospects of emigration. This is the best season of the year for work in Canada; but there is no demand for anyone except farmers with capital and experienced farm labourers. With regard to Victoria, a correspondent writes from Horsham—which is the centre of a large Wheat and wool district—"any hardworking, earnest man need have no fear of obtaining work; good workmen are sure of constant work." In South Australia the drought is very severe, and there is no demand for more hands in that colony or in Queensland. In Western Australia there continues to be a good demand for mechanics and farm labourers. In New Zealand large areas of some of the best lands in the North Island are being acquired by the Colonial Government from the natives for purposes of settlement, and there are good openings for farmers with a little capital. Large numbers of persons continue to arrive in Cape Colony from England and Australia, and many find much difficulty in getting work. In Natal, the Immigration Restriction Act, which has just been passed, prohibits the landing in Natal of the following persons amongst others—(1) any one who cannot himself write out and sign, in the characters of any langnage of Europe, a prescribed application form of admission giving his name, address, and business; (2) of anyone who is a pauper or likely to become a public charge; and (3) of anyone who, not having received a free pardon, has within two years been convicted of a felony or infamous crime or misdemeanour involving moral turpitude, and not being a mere political offence. Otherwise this Act in no kind of way interferes with the landing of respectable immigrants.—*Emigrants' Information Office*, 31, *Broadway, Westminster*.

CANTERBURY BELLS.

Canterbury Bells form bright, showy and effective plants in shrubbery and herbaceous borders, and might well be employed for giving a furnished appearance to positions where many other plants that bloom at a similar period would not succeed. I have seen very floriferous specimens growing and flowering freely on steep banks overhung with trees. The plants had become established when the foliage was absent from the trees, or probably they were self-sown.

Freqnently Canterbury Bells spring up in places qnite unexpectedly, and snccеed in what would be considered unsuitable positions. When in bloom they look charming in wild or semi-wild spots, and they are none the less welcome in the cultivated portions of gardens, provided their presence does not interfere with the permanent occupants. The predominating colours of Canterbury Bells are blue, lilac, rose, and white. A border containing a mixture is therefore interesting, especially as the blue, lilac, and rose vary more or less in depth of tint or shade. Double forms may be had by the careful selection of seed, but plants bearing single flowers are always produced as well as double.

The finest plants are produced from seed sown in May and June, transplanting in good soil and a favourable position so as to become strong for final planting in autumn. July, however, is not too late to sow seed in a moist position in the open, or in boxes. Transplant the seedlings as soon as possible; if this can be done to a permanent position all the better. The plants will be sure to flower, though they may not attain to as large size as earlier raised examples. Seed sown later than this month cannot be depended upon to produce plants of sufficient strength to flower the following year. Such would, however, form superb specimens the succeeding year.

The flowers are very useful for cntting, being borne on fairly long stalks. Branches of various size containing a number can also be cut. Small plants, when they do bloom before they have attained strength, are very useful in affording material for cutting, so that it is not always necessary to spoil good specimens.—E. D. S.

BARFORD HILL.

Horticulture is conducted with spirit at this the Warwickshire home of C. A. Smith-Ryland, Esq., who, in conjunction with Mrs. Smith-Ryland, takes the greatest interest in all matters connected with gardening. During the last two years a fine collection of Malmaison Carnations has been got together, and at the present time they make a grand display. About 700 plants are grown, these being chiefly the bright pink kind known as Princess of Wales. About half the number are two-year-old plants in 8, 9, and 10-inch pots. These occupy a couple of span-roofed houses. The plants have been kept very cool throughout by the admission of abundance of air both night and day whenever the temperature has been well above freezing point. The result is strong vigorous plants, carrying large, well coloured flowers, which are used in large quantities for house decoration.

Few gardens are so well supplied with these lovely Carnations as to be able to use them largely for such work, but at Barford Hill a table filled with vases is sometimes decorated solely with Malmaisons, and the necessary greenery added. Early plants have already been layered in frames, and with his usual energy Mr. R. Jones, the enthusiastic gardener, is setting about the task of providing a still larger stock of plants for next season. In the Orchid houses the plants were in superb health; indeed, I question if a more healthy and vigorous collection of cool house ones could be met with in Britain. The floor of the house, instead of being made of the usual non-absorbent materials, is formed with clean loose gravel, which keeps the atmosphere in a cool moist condition; and to this fact, as well as cultural skill, is perhaps due the fine condition of the plants. Many good forms of Odontoglossums were to be seen, some with enormous spikes and others with large and well-marked individual flowers. In the Cattleya house the bulk of the flowers were over, but the fading blooms on one large and valuable plant showed that when in full beauty the sight must have been a grand one. As no notes were taken it would be difficult for me to enumerate the many good things grown; suffice it to say that the collection contains many splendid varieties of acknowledged repute, as well as promising imported ones, the condition of all showing that their culture is thoroughly understood.

Another notable featnre in the plant houses was a fine display of Hydrangea hortensis. Few things at this season are more useful and showy for decorative purposes when grown as they are at Barford Hill. Old plants in large pots were bearing numbers of grand flowers of a clear pink colour; but something more surprising still was the gigantic trusses small plants in 4 and 5-inch pots were carrying. Some of these were fully 12 inches in diameter, which is surely no mean cultural achievement; but in one instance even this was surpassed, for a plant growing in a pot 4½ inches in diameter carried four flowers, the central one being scarcely less than a foot in diameter and the other three were of large size.

Such results prompted me to inquire about the system of cultnre followed, which was readily given as follows:—Good firm cuttings are inserted in 3-inch pots the last week in June, the soil consisting of three parts fibrous loam and one of leaf soil, with a little sharp sand added. This is pressed very firmly. When rooted the young plants are fully exposed in the open air till the autumn, when they are placed in a cool house, and kept rather dry throughout the winter to prevent the buds from starting. In February more water is gradually given, and when growth is proceeding freely a shift is given into 5-inch pots, substituting a little well decayed manure for leaf soil, and ramming the compost quite firmly. From this time the plants give but little trouble till they are in flower. They are simply kept near the glass in cool houses, receive water when they need it, and are occasionally given a sprinkling of artificial manure. This short outline of the simple means taken to secure such fine results will, I feel sure, be useful to many Journal readers.

Calceolarias, Gloxinias, Show Pelargoniums, and stove plants are all grown largely and well. In the vineries both young and old Vines promise to give very satisfactory results, while the crops in the kitchen garden show evidences of a master's hand. In these brief notes I have not attempted to give more than a passing notice of a few of the good things to be seen in this garden of Shakespeare's county. At some fnture time I hope to deal with the fine ornamental grounds.—Wanderer.

CAMPANULA GRANDIFLORA MARIESI.

"FLOWER GARDENER" is quite wrong in supposing that Campanula grandiflora Mariesi is a new plant. On the contrary, it was introduced into this country somewhere about fifteen years ago. Some seasons ago Messrs. Paul & Son, Chesbunt, received for it a first-class certificate, and as we sketched the plant at the time we give the block now for our correspondent's benefit, and that of the many others who will be interested. The plant, also known as Platycodon grandiflorum Mariesi, is exceedingly beautiful, and worthy of extended cultivation.

As shown in the illustration (fig. 5) the plant is dwarf in habit, being not more than 6 inches in height. The flowers are large and broad, measuring 3 inches or more in diameter, and of a brilliant purplish blue colour with darker veins. It is a charming plant, and deserves a better fate than it hitherto has had.

ROYAL HORTICULTURAL SOCIETY.

SCIENTIFIC COMMITTEE, JUNE 29TH.—Present: Mr. McLachlan (in the chair); Rev. W. Wilks, Prof. Church, Dr. Bonavia, and Rev. G. Henslow, Hon. Sec.

Romneya, diseased.—The following report was received from Kew upon the specimens sent to the last meeting:—"The disease is caused by an obscure organism, considered by Prunet as a species of Cladochytrium. A preliminary notice is given in 'Comptes Rendus,' October 1st, 1894. The detailed account there promised is not yet to hand."

Grapes attacked by Glæosporium.—With reference to the examples sent to the last meeting, Mr. Malcolm Dunn writes, after inspecting the Vine houses at Auchterarder House, that "the vinery is of the usual 'lean-to' form, well heated and ventilated, with everything in good order for growing healthy Vines and first-rate Grapes. The Vines comprise some six or seven varieties, but only Black Hamburgh suffers to a serious extent from the disease; although it could be detected on a few berries of Foster's White Seedling, and still fewer of Alicante. As far as I can remember Muscat of Alexandria, Lady Downe's, Madresfield Court, Gros Colman, and one or two others were not affected, although intermixed with the Vines attacked. The Vines are all in vigorous health, and bearing a fine crop of splendid bunches of Grapes. With regard to the treatment they were receiving I saw nothing to which I could object."

Harpalus ruficornis attacking Strawberries. — Mr. McLachlan showed specimens of this beetle, which belongs to a carnivorous family. Its prevalence in Strawberry beds is probably caused by the presence of the litter. That it will attack Strawberries has been known for the last ten years, and that it has destroyed entire crops. As it is nocturnal in its habits, it must be looked for at night, for it lives in the soil.

CHISWICK, JULY 1ST.

A meeting of the Fruit and Vegetable Committee was held on the above date. Present: Mr. G. Bunyard (Chairman); the Rev. W. Wilks, Messrs. G. Sage, A. F. Barron, J. Smith, W. Pope, J. Veitch, R. Fife, A. H. Pearson, J. Hudson, and A. Dean.

The attention of the members was first drawn to a large collection of Peas growing in one part of the gardens. With these were several high-class varieties of established reputations, grown to give comparisons. Of the fifty-four assumed new varieties nothing of special excellence was found, general average quality being below that of last year. It is very evident that Peas are now so good it is very difficult to find new ones superior.

The awards at Chiswick are progressive, two marks representing a commendation; three marks, high commendation; award of merit, very high commendation; and first-class certificate, superior excellence. Two marks only were given to Saccharine, a nice-looking 4-feet Pea, having long green pods, the peas sugary and tender; to Harbinger (Dickson & Co.), an early free-cropping variety, pods of medium length; and Parchment, one of the sugar section from Vilmorin & Co. The pods are of medium size and pleasant eating when cooked whole.

A few stocks of Broad Beans were seen, and an award of merit was given to Dobbie's Champion, a good cropper of the long-pod section; and three marks were given to Exhibition Long-pod, from R. Veitch & Sons, and to Robin Hood, green long-pod, from Harrison and Sons. These were capital stocks. Attention was drawn to a very neat compact Cabbage Lettuce, Continuity (Daniels & Son), rather dark coloured and standing remarkably well, but no award was made.

The large breadth of trial Strawberries was next seen. These generally were in admirable condition, although some relatively were much heavier croppers than others. An award of merit was made to Wonderful, which carries a great crop of long tapering scarlet fruits of excellent flavour. Such varieties as Royal Sovereign, President, Edward Leforte, Auguste Rousselot, Countess, Latest of All, and a few others so good last year were again in capital condition; and of heavy fruiters Newton Seedling and Acquisition were marvellous examples, although the fruits are not of the best. Admiral and G. Wythes, new varieties on yearling plants, showed considerable promise.

A couple of Melons were placed before the Committee, both fair, but neither of any special merit. Mr. A. J. Ward, one of the Richmond Corporation allotment holders, sent dishes of Maincrop, Eureka, Gradus, Stratagem, Daniels' Alderman, and the Daniels' Peas, all very fine, Alderman being exceptionally so; also a good sample of Bunyard's Exhibition Bean. A cultural commendation was awarded.

ROSE SHOWS.

WEST OF ENGLAND (HEREFORD).—JUNE 28TH.

THIS old Society celebrated its thirty-first anniversary on Tuesday, June 29th, with a success which ought to have been expected on so memorable an occasion as our Most Gracious Majesty's Diamond Jubilee. Then, if ever, should be held the *fête* day of the loyal lieges of the queen of flowers, the historic national emblem, dear to the heart of every Englishman.

Doubtless in nearly every garden in the land the Rose still is far the most popular of flowers, and holds royally the pride of place. Nevertheless, it is a sad fact, introducing a problem that has to be solved, that Rose shows *pur et simple* have ceased to attract the general public, either by their presence as paying spectators or by their contributions as competing exhibitors. Numbers of Rose shows have ceased to exist, while others are in a moribund condition. The Rose Society, whose last meeting it is my privilege to report, for the last two years has contracted an adverse balance of over £50, and has failed in other ways to obtain public support.

The managers, fully realising their position, as sensible men naturally do when their pockets are appealed to, have made a supreme effort to clear off the adverse balance, and to carry on the oldest Rose exhibition in the kingdom by supplementing its special attractions by others more up to date and practically indispensable. Two short concerts and two short commediettas of half hour each were the sources of diversion introduced in the Shire Hall, and proved highly successful, while, quite as important, exhibitors from far and near, almost 250 in number, were present in great form, and six (out of eight entering) seventy-two varieties were staged, which pleasantly brought back memories of the good old times of our western Rose show. Messrs. A. Dickson & Sons especially exhibited splendidly, while their seedlings, mostly H.T.'s, were admirable, and likely to be most valuable and permanent additions both in the garden and exhibition boxes.

The Roses at Hereford were grown in Messrs. A. Dickson's gardens near Ledbury, speaking volumes as to the natural capacities of the soil and the skill and attention of Mr. Drew, the firm's able manager.

In division I., nurserymen, Messrs. Alexander Dickson & Sons, Newtownards, Co. Down, Ireland, were easily placed first, the Judges being unanimous as to the excellence of their exhibit, indeed there was not the slightest suspicion of a weak corner, so level and fine a collection of blooms being seldom staged. Very noticeable was the number of seedlings, almost up to date, exhibited by the firm, of most of whom, as has already been said, it may safely be prophesied, from their distinct colour and good habit, a permanent position among exhibition varieties. A few remarks are appended to varieties of transcendent merit. H.P. Killarney (seedling, very clear white), H.P. Exposition de Brie, H.T. Danmark (fine), H.P. Marie Baumann, H.P. Clio, H.P. Alphonse Soupert, H.P. Marchioness of Downshire (grand), H.P. Capt. Hayward, H.T. Kaiserin Augusta Victoria (splendid everywhere), H.P. Duchess of Bedford, H.P. Mrs. C. Grahame, seedling (first-rate promise), H.P. Ulster, seedling (fine substance), H.P. Merveille de Lyon, H.P. Star of Waltham (magnificent), H.P. Duchess of Vallambrosa, H.P. François Michelon, H.T. Lady Mary Fitzwilliam (finely shown), H.P. Ulrich Brunner, H.P. Her Majesty (quite a Diamond Jubilee bloom), H.T. Marquis Litta (useful colour), H.P. Gustave Piganneau, H.P. Madame Eugénie Verdier, H.P. Earl of Pembroke, H.P. Madame Gabriel Luizet, H.P. Heinrich Schultheis, H.T. Mrs. W. J. Grant (fine shell petals), H.P. Dupuy Jamain, Tea Rubens, H.P. Mrs. John Laing, H P. Charles Darwin (superb colour), H.P. Helen Keller (fine), H.P. Mrs. R. G. Sharman Crawford (superior to Clio or Mrs. John Laing), H.P. Victor Hugo, H.P. Robert Duncan, H.P. Etienne Levet, H.P. Bessie Brown, H.T. Souvenir de President Carnot, H.P. Prince Arthur, H.P. Victor Verdier, H.P. Charles Lefebvre, H.P. Ellen Drew (fine), H.P. Comtesse d'Oxford, H.P. Pride of Waltham, H.P. Comte de Raimbaud, Tea Madame Hoste (lovely), H.P. Horace Verdier (superb), Tea Souvenir de S. A. Prince, H.P. Louis Van Houtte, H.P. Mrs. E. Mawley, seedling (very high centre, promising), H.P. Tom Wood, H.P. Madame Rothschild, H.P. Marie Verdier, H.P. Marchioness of Dufferin, H.P. Countess of Caledon (great acquisition, seedling), H.P. A. K. Williams (perfect), H.T. Caroline Testout, H.P. Général Jacqueminot (not cashiered yet), H.P. Margorie, seedling (very good), H P. Jeanie Dickson, Lady Clanmorris (light seedling, good), H.P. Marquise de Castellane, H.P. George Mazarette (seedling, globular, fine), H.P. Lady A. Hill (very distinct), H.T. La France, H.P. Mons. Noman, H.P. S. M. Rodocanachi, Tea Ernest Metz, Tea The Bride, H.P. Dr. Andry, H.P. Le Havre, Tea Madame Anna Ollivier.

The second prize was equally divided between the two celebrated Colchester firms, B. R. and F. Cant (although as a rule the precedent is bad), as the character and general excellence of the blooms, in the opinion of the Judges, were indistinguishable. H.P. Helen Keller H.P. Charles Lefebvre, and H.P. Xavier Olibo in F. Cant's, and H.P.'s Dukes of Connaught and Teck, and H.T. Caroline Testout in B. R. Cant's collections were specially worthy of notice.

For thirty-six varieties, first prize Messrs. Townsend & Sons, Worcester; second prize Mr. George Prince, Oxford; third prize Mr. S. Treseder, Cardiff. For twenty-four trebles (to which a list of the first prize is appended as being of superlative excellence, if room can be allowed) fell to Messrs. A. Dickson. The varieties were H.P. Gustave Piganeau, H.T. Kaiserin Augusta Victoria, H.P. Ulrich Brunner, H.P. John Laing, H P. Star of Waltham, H.T. Mrs. W. J. Grant (superb), H.P.

Horace Vernet, H.T. Mrs. C. J. Grahame (promising seedling) H.T. Ulster (seedling of great substance), H.T. Lady Mary Fitzwilliam, H.P. Helen Keller, H.T. Souvenir de President Carnot, H P. Heinrich Schultheis, H.P. Margaret Dickson, H.P. Etienne Levet, H P. Bessie Brown (seedling), H.T. Countess of Caledon (perfect), H.T. Marquise de Litta (useful colour), H.P. Charles Lefebvre, H.T. Majorie, H.P. Duchess of Bedford, H.P. Madame Gabriel Luizet, H.P. A.K. Williams (exquisite), H.P. Madame R. G. Sharman Crawford. Mr. B. R. Cant second, and Messrs. F. Cant & Co. third.

Division II. Amateurs (open).—Class 4, twenty-four varieties.—First prize Mr. Conway Jones, Gloucester, with an admirable collection, including Noisette Maréchal Niel, H.P. Louis Van Houtte, H.P. Comtesse Oxford, H.P. Charles Lefebvre, H.P. Duchess of Morny, and H.P. François Michelon. Second Dr. Budd, Bath, including a splendid (splendid), Madame E. Lambert, Alba Roses, Ernest Metz, La Boule d'Or, Miss Ethel Brownlow, The Bride. Second prize, Messrs. Frank Cant & Co., who staged grand blooms of Cleopatra and Madame de Watteville ; and third prize, Mr. Stephen Treseder.

In the open classes for any light Rose (one sort), H.P., Messrs. A. Dickson took the prize with Mrs. W. J. Grant (very fine and sweet) ; dark Rose, H.P., A. K. Williams ; yellow Rose, Mr. Prince, Comtesse de Nadaillac (absolutely perfect in colour and symmetry).

In the herbaceous flower division there was a marked improvement in the quality of the flowers exhibited, as well as in their grouping, over former years, although a little more attention still might be of advantage, so that each variety may stand out with greater distinctness ; the general effect was good and all that could be desired.

The Judges in the nurserymen's division were the Rev. C. H. Bulmer,

FIG. 5.—CAMPANULA GRANDIFLORA MARIESI.

bloom of Her Majesty (worthy of the gracious prototype), and Tea The Bride. Third Mr. Thomas Hobbs, Easton, Bristol. In the class for eighteen varieties the first prize went to Rev. W. H. Jackson, Bedford ; second to Mr. Foley Hobbs, Worcester ; and the third to Rev. C. H. Bulmer, Credenhill, Hereford. For twelve varieties Dr. Budd was first, Mr. T. Hobbs second, and the Rev. W. H. Jackson third.

Division III. Herefordshire Amateurs.—In this section the class for eighteen varieties, first prize (with N.R.S. gold medal) was won by the Rev. Preb. G. E. Ashley, Stretton Rectory ; second, Mr. John Ough, Hereford ; third, Capt. Cotterell, Garnons, Hereford.

In the open class for eighteen Tea and Noisette, the first prize fell to Mr. G. Prince, with a superb collection, which included the following varieties :—Comtesse Nadaillac (perfect), Souvenir d'Elise Vardon, Souvenir d'un Ami, Souvenir de S. A. Prince, Princess of Wales (lovely), Catherine Mermet, Rubens, Maman Cochet (long in bud, poor habit), Madame Hoste, Madame Cusin (fine), Jean Ducher, Inocente Pirola Credenhill Rectory, Hereford ; Mr. Conway Jones, Gloucester ; and Mr. John Cranston, Townhope, Hereford. In the amateurs' division Messrs. F. and J. Cant.—HEREFORDSHIRE INCUMBENT.

SUTTON.—JUNE 29TH.

THIS was the sixteenth exhibition of the above Society, and if the entries were less numerous than we have sometimes seen here, the quality was quite up to the usual standard. Indeed, taken all round the flowers were much brighter and of better form.

In the amateurs' class, for twenty four Roses, R. E. West, Esq., Reigate, beat Mr. A. Slaughter, Steyning. Mr. West's best flowers were Etienne Levet, Maman Cochet, Annie Wood, The Bride, and Horace Vernet. For eight trebles Mr. West again defeated Mr. Slaughter, his Victor Hugo, Général Jacqueminot, François Michelon, and Ulrich Brunner being extra good. Mr. Slaughter was well ahead in a class for

twelve Teas or Noisettes; Mr. West taking second honours here. For growers of less than 2000 plants, Mr. Harris, gardener to E. M. Bethune, Esq,, Horsham, was most successful, winning for twelve singles, six trebles, and for nine Teas or Noisettes. In each class Mr. P. G. C. Burnand, Reigate, followed very closely.

Mr. M. Hodgson was equally successful in the division for growers of less than 1000 plants, defeating Mr. H P. Landon by a few points in the three chief classes; but for six Teas or Noisettes Mr. Landon excelled Mr. Hodgson. Mr. P. G. C. Burnand won with some capital La France for twelve of any variety, Mr. R. E. West following with Mrs. John Laing, and Mr. Harris with Madame Gabriel Luizet.

In the local class for twelve singles Mr. R. W. Miller was well in front, and also in a class for nine distinct. The ladies' challenge cup and silver medal of the N.R.S., offered for six distinct Roses, brought out eight competitors, Mr. W. Hooper being successful with Général Jacqueminot, Her Majesty, Marie Baumann, Dr. Andry, Mrs. George Dickson, and Ulrich Brunner. G. A. V. Schofield, Esq., and Mr. R. W. Miller followed in the order named. Mr. T. G. Delmar won with some good Mrs. John Laing for six of any Rose.

There were seven competitors in a nurserymen's class for thirty-six singles, Messrs. Harkness & Sons, Bedale, winning with a grand stand. The best twelve were Comtesse de Ludre, Sir R. Hill, E. Y. Teas, Mrs. W. J. Grant, S. Marie Rodocanachi, F. Michelon, Mrs. Crawford, La France, Marie Verdier, E. Levet, Victor Hugo, and Helen Keller. Mr. B. R. Cant, Colchester was a close second; and Messrs. Prior & Son, Colchester, third. This was a very closely contested class, and all were really good. For twelve Teas or Noisettes Mr. G. Prince, Oxford, won with C. de Nadaillac, Souvenir de S. A. Prince, Maman Cochet, Jean Ducher, Princess of Wales, Souvenir d'un Ami, Madame Hoste, Souvenir d'Elise Vardon, Niphetos, Maréchal Niel, The Bride, and Medea. Messrs. Prior & Son and Mr. B. R. Cant followed.

Table decorations, baskets, bouquets, sprays, and other floral designs were tasty, and well exemplified what can be done in this direction with Roses only.

EALING.—June 30th.

For over thirty years the Ealing Horticultural Society has held annual exhibitions in the populous and salubrious district which could once be more accurately described than now as a far western suburb of London. Of late years, however, the huge metropolis has advanced as with giant strides in all directions, and not least westerly, and as Ealing has grown, too, to a remarkable extent, it is a far western suburb no longer, but practically joins hands with the greatest city in the world. Still there are "open spaces," more or less extensive, of common land, market garden fields, and here and there a park attached to what was once a country residence; and thus it is that vegetation flourishes in various forms, and even Roses, for which the district has long been famed, still display their charms, and Roses were, in fact, the most prominent feature of the show this year.

The site was an ideal one—namely, the grounds of Gnnnersbury Park, kindly placed at the disposal of the Committee by Lord Rothschild and his garden-loving brother Leopold de Rothschild, Esq., and as the pleasure grounds and flower gardens were generously open to visitors a treat of no ordinary character was afforded. The exhibition was essentially local, and as anything like a list of prizewinners could only possess local interest no attempt whatever will be made to deal with the several classes. There was, however, at least one open class and special prizes for Roses that must not be overlooked.

The principal class was for forty-eight blooms, not more than two of any one variety. The honours had to be divided between three exhibitors—namely, Mr. Charles Turner, Slough; Messrs. G. & W. H. Burch, Peterborough; and Mr. George Cannon, St. John's Nursery, Ealing, and they were accorded in the order named. At the first glance the Peterborough stands appeared the heavier, hut a close scrutiny made clear the fact that they were more developed, some of them rather too much so, and had lost freshness, whereas the Slough Roses were beautifully clear and bright; grand blooms, too, many of them were, especially Madame G. Luizet, Marchioness of Londonderry, Souvenir de President Carnot, Margaret Dickson, Her Majesty, and Beauté Lyonnaise, the last named being particularly charming. Others in the stands were Reynolds Hole, Cheshunt Hybrid, Maurice Bernardin, Dnchesse de Morny, A. K. Williams, Horace Vernet, Mrs. R. G. S. Crawford, Mrs. Harkness, Victor Hugo, Mrs. J. Laing, Louis Van Houtte, S. M. Rodocanachi, Marie Baumann, Charles Lefebvre, Duc de Wellington, François Michelon, Fisher Holmes, Xavier Olibo, Lady Sheffield, Charles Darwin, La France, Helen Keller, Dupuy Jamain, Salamander, Sultan of Zanzibar, Sir Rowland Hill, Prince Camille de Rohan, and Duchess of Fife. The second and third prize stands contained excellent representatives of popular varieties, and the whole made a meritorious display.

In another class for twenty-four Roses there were twelve competitors, the first prize being a Jubilee cup, the second the gold medal of the National Rose Society, the third a silver-gilt, and the fourth a silver medal—excellent provision it will be conceded in one class. The merits of some of the competing stands were very close, but eventually the awards were apportioned as follows:—The Jubilee cup to E. P. Oakshott, Esq., Orchardine (gardener, Mr. C. Long); the gold medal to W. Owen, Esq., The Elms, Castle Bar (gardener, Mr. R. Green); the silver-gilt medal to W. Ponting, Esq., Monnt Avenue (gardener, Mr. H. Shingle); and the silver medal to R. Dawes, Esq.. Edmoncote House (gardener, Mr. S. Wickenden), all staging very well indeed. There were several other classes, including one in which an exhibitor lost the first prize for Teas and Noisettes through including a bloom of La France, no doubt in a moment of forgetfulness of the N.C.S. rules, by which the judging had to be done.

In several of the minor classes for Roses the arrangement of the blooms was very faulty, most of them appearing as if crushed down as low as they could be; but not so a magnificent collection of Messrs. James Veitch & Sons, which afforded an excellent object lesson in growing and staging, the best varieties being splendidly represented, and certainly the most meritorious exhibit in the show. The only other exhibits in the cut flower section worthy of praise were stands of Gloxinias, twelve varieties in triplets, with Fern. They were fresh and beautiful, well deserving the award. Bunches of hardy herbaceous plants were too much huddled, spoiling the effect, but some of the table decorations were very attractive.

Many groups of plants were arranged, some on the ground, others, and smaller, on tables; and though there were pleasing associations of plants in some groups, there was too much packing in others, while in one bright little group on the table the exhibitor had neither masked the pots nor washed them. It was a pleasure to turn from the semicircle of dirty pots to the two really fine non-competitive groups of Mr. G. Reynolds, Gunnersbury Park, in which Palms, Crotons, Celosias, Carnations, Gloxinias, and other plants were effectively displayed; and of Mr. J. Hudson, Gunnersbury House, who had among the taller plants a pyramid Nectarine tree aglow with fruit, and in the front a collection of Marliac's charming Water Lilies, the equal of which could probably not have been obtained from any other garden in the kingdom. As a pendant of the show a number of florally decorated bicycles attracted a crowd of people, and would increase the "takings" considerably.

The Gunnershnry Pleasure Grounds were beautiful and enjoyable, magnificent Cedars standing in far-spreading cushions of Ivy, and from it springing in informal groups stately Foxgloves, with the lake in front sparkling with Water Lilies, presented a combination of charms rarely to be seen. Then there are large Rose beds and beds of other flowers arched with Roses, the whole forming a garden of sweetness and beauty of the most delightful kind.

On the "other side" (Mr. Hudson's department was not open to the public; it is too full of glass to find room for the multitude)—the walks are lined with fruit trees in pots, the finest private collection we have seen. Houses filled with fruit trees—Figs, Vines, and Melons—to meet the great demand, which they appear well able to do. Pleasure grounds full, also a beautiful and interesting private nook, with its small lake, with twenty-eight varieties of Marliac's Lilies, and not a small, but large bush of Bambusa Metake, planted out of a 6-inch pot some years ago by Mr. Hudson, and now 20 feet in diameter. Then there is something to see underground in an ancient cellar—namely, beds literally "white over" with Mushrooms, and this abundance is maintained all the year round. A veritable *multum in parvo* is this garden, and a stroll through it, also through the greater one, open to the public, added to the pleasure of a visit to this well managed, attractive, and diversified Ealing Show.

CROYDON.—June 30th.

This was again a grand show—plants, groups, and especially the Roses being better than usual. Numbers and quality were good throughout the show.

In the nurserymen's class for forty-eight varieties, Messrs. Harkness and Sons, Bedale and Hitchin, were placed first; the stand contained some really good and highly coloured blooms. Mr. B. R. Cant, Colchester, was a close second; and Messrs. D. Prior & Sons, of Colchester, third. The same three exhibitors scored in a class for twenty-four varieties, three of each, the order being Mr. B. R. Cant, Messrs. Prior and Sons, and Messrs. Harkness & Sons. In both classes the competition was very close indeed. Messrs. G. & W. H. Burch, Peterborough, won for twenty-four singles; Mr. G. W. Piper, Uckfield, following closely. The prizewinners in the class for Teas and Noisettes all came from Colchester; Messrs. D. Prior & Sons, Messrs. F. Cant & Co., and Mr. B. R. Cant winning in the order named. Messrs. F. Cant & Co. were first for twelve of any H.P. or H.T. with good Kaiserin Augusta Victoria, and Mr. B. R. Cant with twelve Madame Cusin in the class for Teas or Noisettes.

There were also five competitors for the new challenge cup offered to amateurs for thirty-six distinct varieties. Mr. E. B. Lindsell, Hitchin, easily won with some superb flowers. Among these were the two silver medal blooms, Her Majesty securing one for the best H.P., and Mrs. John Laing the other as the flower of that variety. Mr. T. B. Haywood, Reigate, was second in the cup class. Mr. Mease, gardener to A. Tate, Esq., Leatherhead, won for a good stand of twenty-four, distinct; and Mr. Harris, gardener to E. M. Bethune, Esq., Denne Park, Horsham, for eighteen Teas or Noisettes. For growers of less than 2000 plants, Mr. E. Mawley, Berkhamsted, secured the premier honour for twelve distinct, and also for twelve Teas or Noisettes; E. M. Bethune, Esq, being a close second in each class.

Mr. J. W. Cook, The Briers, North Finchley; W. D. Freshfield, Esq., The Wilderness, Reigate; and Mr. M. Hodgson, Shirley, were very successful among amateurs. The challenge cup and N.R.S. silver medal for local growers were secured by Mr. A. C. Gifford, South Norwood.

Plants and groups were very good. Mr. Mills, gardener to F. G. Lloyd, Esq., Coombe House, Croydon, won for twelve table plants, for six Dracænas, for six Caladiums, for some grand specimens of Selaginellas, and for twenty-four hardy cut flowers; Mr. C. J. Salter,

gardener to T. B. Haywood, Esq., Reigate, winning for twenty-four stove and greenhouse cut flowers. One of the most successful exhibitors in this division was Mr. Harris, gardener to P. Crowley, Esq., Waddon House, Croydon, who was well ahead for groups, for nine ornamental foliage plants, for six stove and greenhouse plants in bloom, for six exotic Ferns, and for both specimen foliage and flowering plants.

Special mention must be made of Messrs. J. Laing & Sons' grand groups of Begonias, also of Caladiums and herbaceous cut flowers. Messrs. Wallace & Co., Colchester, had a superb stand of Calochortuses.

CRYSTAL PALACE.—JULY 2ND.

ON Friday last the National Rose Society held its metropolitan meeting in the Crystal Palace, and it is with pleasure that we are able to state that the exhibition was distinctly an advance on that of last year. Not only was there improvement in the number of exhibits, but the quality was decidedly superior. Last year there were 528 entries, while this year the total was 669, or an increase of 141. It is not, of course, probable that all the entries were staged, but there were sufficient to give an exceedingly beautiful spectacle. In all sections the Roses staged were good as a whole, the Hybrid Perpetuals being stout in petal and good in colour, while the Teas and Noisettes were, if not large, at any rate of singular beauty, many of the specimens being absolutely perfect. The thundery weather that we have experienced of late had left its mark upon some of the blooms, but they were not so much damaged as some might have been led to suppose.

As was the case last year, there were fifty-eight classes in the schedule, comprising those for Hybrid Perpetuals, Teas and Noisettes, Hybrid Teas, garden Roses, vase of Roses, and table decorations. In every instance there was competition, in some perhaps only two or three rivals, whereas in others the stands numbered between a dozen and eighteen. Occasionally it was extremely easy to find the first prize-winners; more frequently, however, the work of the Judges was difficult, but as there were two or three score of them they cannot be said to have had too much to do. Taken as a whole this was probably the finest the Society has held.

Now a word or two as to the arrangements, which we presume were carried out by the officials of the Palace. We do not wish to find fault unnecessarily, but in this case it is our duty to call attention to the utter lack of method in placing the exhibits. It seemed as though an effort had been made to divide the classes as much as possible, and not only that, but the several boxes in one class were frequently on tables some distance apart. This, of course, caused the Judges much needless hurrying about, and in one instance at least they had to do their work over again, having missed out some stands that were away from the others, and one of which eventually took the first prize. Then, again, the position occupied by the majority of the amateurs' exhibits was one of the worst that could be found, as it was so dark that it was extremely difficult to read the names, and impossible to see the colours of the flowers. We hope that at subsequent shows a strong effort will be made to place the classes consecutively, as was done at Halifax a year or two back, as well as providing a place where the flowers can be properly seen by the hundreds of interested visitors.

NURSERYMEN'S CLASSES.

The class for seventy-two distinct single trusses, with the first prize in which goes the champion trophy, is the one that always attracts the most attention from rosarians. All alike are anxious to know who has won, and this time the excitement was as keen as ever. As was the case in 1896, Messrs. Harkness & Son, Bedale, were adjudged the champions, followed by Mr. B. R. Cant and Messrs. F. Cant & Co., there being two unsuccessful exhibitors. The winning exhibit was composed of good flowers, beautifully staged. The varieties were Comte de Raimbaud, Madame Gabriel Luizet, Sir Rowland Hill, Madame Joseph Bonnaire, Prince Arthur, The Bride, Marie Baumann, Kaiserin Augusta Victoria, Crown Prince, Madame Eugène Verdier, Comtesse de Ludre, Viscountess Folkestone, Earl of Dufferin, Mrs. W. J. Grant, Victor Hugo, Caroline Testout, Marie Rady, Madame Delville, Exposition de Brie, Star of Waltham, Duke of Teck, Marie Verdier, Marchioness of Dufferin, Duke of Edinburgh, Marchioness of Londonderry, Camille Bernardin, Madame de Watteville, Susanne Marie Rodocanachi, Catherine Mermet, Jean Liabaud, Margaret Dickson, Général Jacqueminot, Marquise de Castellane, Xavier Olibo, Helen Keller, Thomas Mills, White Lady, Abel Carrière, Lady Mary Fitzwilliam, A. K. Williams, François Michelon, Charles Lefebvre, Beauty of Waltham, Dupuy Jamain, Marchioness of Downshire, Duke of Wellington, Marquis de Litta, Duc d'Orleans, Madame Cusin, Gustave Piganeau, Madame Montet, Duke of Connaught, Mrs. J. Laing, Edouard André, Silver Queen, Horace Vernet (perfect), Souvenir d'Elise Vardon, Fisher Holmes, Mrs. R. G. Sharman Crawford, Captain Hayward, Etienne Levet, Maréchal Niel, Madame Haussman, Mrs. Paul, Mrs. Jowett, Duchesse de Morny, La France, Dr. Andry, and Ulrich Brunner. Amongst so many it must be expected that there will be a few weak flowers, but these in this stand were very few.

As has been said, the second position was accorded to Mr. B. R. Cant, Colchester, who staged many handsome Roses. We cannot afford the space to mention all, but a few good ones were Princess of Wales, Souvenir de S. A. Prince, Madame Hoste, Duchesse de Morny, Marguerite Boudet, Marie Verdier, Susanne Marie Rodocanachi, Duke of Wellington, Mrs. W. J. Grant, Madame Cusin, Maman Cochet, Bridesmaid, Madame de Watteville, Dr. Andry, Annie Laxton, Jean Soupert, and Caroline Testout. The third prize was well won by Messrs. Frank Cant & Co., Colchester, who also showed very strongly in some instances.

In the class for forty distinct varieties, three blooms of each, Mr. B. R. Cant was a splendid first with an even exhibit of fresh, well-coloured flowers of the following varieties:—Her Majesty, Horace Vernet, Mrs. R. G. Sharman Crawford, Gustave Piganeau, White Lady, Susanne Marie Rodocanachi, Caroline Testout, Alfred Colomb, Helen Keller, Marie Baumann, Marchioness of Dufferin, Dupuy Jamain, La France, Earl of Dufferin, Lady Mary Fitzwilliam, Ulrich Brunner, Marchioness of Londonderry, Beauty of Waltham, Mrs. John Laing, A. K. Williams, Jean Soupert, Merveille de Lyon, François Michelon, Madame de Watteville, Victor Hugo, Souvenir de S. A. Prince, Camille Bernardin, Madame Gabriel Luizet, Duke of Teck, Margaret Dickson, Duchesse de Morny, Madame Cusin, Etienne Levet, Catherine Mermet, Le Havre, Kaiserin Augusta Victoria, Fisher Holmes, Madame Eugène Verdier, Marquis de Litta, and Maman Cochet. Messrs. Harkness & Sons were placed second. Their stand was also highly creditable, and as usual the arranging was done with much skill and care. Noticeable in this exhibit were Mrs. John Laing, Helen Keller (splendid), Prince Arthur, Camille Bernardin, Horace Vernet, Madame Cusin, and Mrs. W. J. Grant. Messrs. Frank Cant & Co. were accorded the third position. The competition in this class was strong.

Several competitors came forward in the class for forty-eight distinct single trusses, and the Judges were a considerable time before they gave the prizes to Messrs. J. Townsend & Sons, Worcester; Messrs. J. Burrell & Co., Howe House Nurseries, Cambridge; and Messrs. G. and W. H. Burch in the order in which their names are here given. We believe this is the first occasion on which Messrs. Townsend have set up a forty-eight, and they are to be congratulated on their success. The blooms comprised Gustave Piganeau, Lady Mary Fitzwilliam, Heinrich Schultheis, Pride of Waltham, Charles Lefebvre, Mrs. R. G. Sharman Crawford, Alfred Colomb, White Lady, Marquis de Litta, Caroline Testout, Camille Bernardin, Madame Eugène Verdier, Victor Verdier, La France, Dupuy Jamain, Mrs. John Laing, Catherine Mermet, Susanne Marie Rodocanachi, Marie Van Houtte, Xavier Olibo, François Michelon, A. K. Williams Her Majesty, Duchesse de Morny, Madame Gabriel Luizet, Fisher Holmes, Marchioness of Londonderry, Comte de Raimbaud, Innocente Pirola, Marie Verdier, Kaiserin Augusta Victoria, Victor Hugo, Prince Arthur, The Bride, Horace Vernet, Souvenir de S. A. Prince, Margaret Dickson, Lord Bacon, Catherine Kuster, Marie Baumann, Jean Ducher, Madame Cusin, Comtesse de Panisse, Duke of Edinburgh, Anna Olivier, Beauty of Waltham, and Medea. Messrs. J Burrell & Co., who were second, staged The Bride, Duke of Connaught, Innocente Pirola, Horace Vernet, Captain Hayward, Général Jacqueminot, and Xavier Olibo, amongst others, in good form. Messrs. G. and W. H. Burch, Peterborough, were third.

There were ten entries in the class for twenty-four distinct single trusses, and some blooms of great beauty were staged by many of the exhibitors. Mr. Charles Turner, Royal Nurseries, Slough, was first with Victor Hugo, Marchioness of Londonderry, Xavier Olibo, Mrs. John Laing, Duchesse de Morny, Prince Arthur, Her Majesty, Caroline Testout, Mons. E. Y. Teas, Ulrich Brunner, Louis Van Houtte, Pride of Waltham, Penelope, François Michelon, Marie Baumann, Madame Victor Verdier, Lady Sheffield, Fisher Holmes, Ernest Metz, Dr. Andry, Madame Gabriel Luizet, A. K. Williams, and Gustave Piganeau. Mr. J. Mattock, New Headington, Oxford, was second, his best blooms being Duchesse de Morny, Mrs. John Laing, Innocente Pirola, Duchess of Bedford, and Earl of Dufferin. Mr. R. Crossling, Nurseries, Penarth, South Wales, was a poor third.

Messrs. D. Prior & Sons, Colchester, were a splendid first in the class for twenty-four distinct, three blooms of each, the stand being composed of many beautiful examples. The varieties were Caroline Testout, Ulrich Brunner, Marchioness of Dufferin, Alfred Colomb, Gustave Piganeau, Mrs. John Laing, Camille Bernardin, Her Majesty, A. K. Williams, La France, La Rosière, Marchioness of Downshire, François Michelon, Pride of Waltham, Etienne Levet, Mrs. R. G. Sharman Crawford, Susanne Marie Rodocanachi, Madame Eugène Verdier, Abel Carrière, Kaiserin Augusta Victoria, Marie Finger, Marquis de Litta, Marchioness of Londonderry, and Horace Vernet. Mr. G. Mount, Canterbury, was placed second, Général Jacqueminot, Ulrich Brunner, Margaret Dickson, Mrs. R. G. Sharman Crawford, Caroline Testout, and Madame Gabriel Luizet being conspicuous in this exhibit. Messrs. J. Townsend & Sons were third.

An extra class, open to all nurserymen, with the first prize in which went the Dickson cup, brought five competitors. It was for twelve distinct single trusses, Messrs. Harkness and Sons taking the coveted award. Their blooms were Helen Keller, Earl of Dufferin, Marchioness of Londonderry, Mrs. W. J. Grant, Marchioness of Dufferin, Mrs. R. G. Sharman Crawford, Muriel Grahame, Marchioness of Downshire, Margaret Dickson, Jeannie Dickson, Ethel Brownlow, and one other. Mr. B. R. Cant was second, and Messrs. F. Cant & Co. third. The blooms had to be from varieties that have been sent out by Messrs. A. Dickson & Sons, Newtownards.

TEAS AND NOISETTES.—In the nurserymen's classes in this section of the show many flowers of the greatest beauty were staged, some varieties especially being particularly rich in colour, and of perfect form and substance. The chief class was for twenty-four single trusses, distinct, the premier position being taken by Messrs. F Cant & Co. with some lovely examples. The varieties included Madame Cusin, Madame Hoste, Madame de Watteville, Souvenir de S. A. Prince, Maman Cochet, Hon. Edith Gifford, Souvenir d'un Ami, The Bride, Souvenir d'Elise Vardon, Comtesse de Nadaillac, May Rivers, Catherine Mermet, Amazone, Jean Ducher, Madame Bravy, Marie Van Houtte, Etoile de Lyon, Ernest Metz, Francisca Kruger, Ethel Brownlow, Medea, Anna

Ollivier, and Comtesse de Panisse. The second position was taken by Messrs. D. Prior & Son, whose examples of Maman Cochet, Cleopatra. Luciole, Madame Lambard, and Madame Cusin were very fine. Mr. G. Prince, Oxford, with smaller flowers, was third.

Messrs. J. Burrell & Co. were to the front for eighteen Teas and Noisettes, distinct, one truss of each, with Madame de Watteville, Madame Hoste, Ernest Metz, The Bride, Souvenir d'un Ami. Jean Ducher, Princess of Wales, Niphetos, Golden Gate, Maman Cochet, Madame Cusin, Catherine Mermet, Bridesmaid, Etoile de Lyon, Ethel Brownlow, Madame Angele Jacquier, Maréchal Niel, and Muriel Grahame. The second place was filled by Mr. J. Mattock, whose blooms were rather larger than those in the previous stand, but decidedly less refined. Amongst the best were Ernest Metz, Ethel Brownlow, Madame Cusin, Alba Rosea, and the Hon. Edith Gifford. Messrs. J. Townsend & Sons were third.

For eighteen trebles, distinct, of Teas and Noisettes Mr. George Prince was first, his blooms being very fine. They comprised The Bride, Maman Cochet, Alba Rosea, Madame Cusin, Princess of Wales, Souvenir de S. A. Prince, Souvenir d'un Ami, Innocente Pirola, Comtesse de Nadaillac, Niphetos, Catherine Mermet, Anna Ollivier, Ernest Metz, Ethel Brownlow, Mons. Furtado, Madame de Watteville, Jean Ducher, and Marie Van Houtte. Mr. B. R Cant was second, his stand containing Luciole, Madame Cusin, Marie Van Houtte, Comtesse de Nadaillac, The Bride, and Madame de Watteville. Messrs. D. Prior & Sons were third, all the stands being good.

Amateurs' Classes.

As is customary at this show, the number of classes devoted to amateurs was very large, and many of the stands comprised some perfect blooms. In a few of the classes the competition was not particularly keen, but as a rule the entries were numerous, and the pointing close. A few well known growers were conspicuous by their absence, but some new ones had come in to occupy the vacancies. Such rosarians as E. B. Lindsell, Esq., C. J. Grahame, Esq., the Rev. J. H. Pemberton, the Rev. A. Foster Melliar, Alfred Tate, Esq., O. G. Orpen, Esq., and A. Slaughter, Esq., staged strongly and well maintained their reputation.

The amateurs' champion trophy class was the one to attract the greatest amount of attention from the rosarian visitors. The excitement relative to it is always very intense, and this year proved no exception. The Rev. J. H. Pemberton succeeded in getting top place last year, while in Friday's show E. B. Lindsell, Esq., Hitchin, was the winner with a beautiful exhibit, containing several flowers of the first quality. The number of blooms required was thirty-six in distinct varieties, the winning stand containing Ulrich Brunner, Marchioness of Londonderry, Charles Lefebvre, Marchioness of Dufferin, Gustave Piganeau, Her Majesty, Alfred Colomb, Susanne Marie Rodocanachi, Mrs. W. J. Grant, Duc d'Orleans, Mrs. John Laing, Duchess of Bedford, François Michelon, Dr. Andry, Innocente Pirola, Horace Vernet, Comtesse de Nadaillac, Muriel Grahame (superb), Madame Victor Verdier, Madame Hoste, Prince Arthur, Madame de Watteville, Dr. Sewell, La France, Fisher Holmes, Catherine Mermet, Madame Haussman, Madame Gabriel Luizet, Earl of Dufferin, Madame Cusin, A. K. Williams, Kaiserin Augusta Victoria, Sir Rowland Hill, Louis Van Houtte, and Merveille de Lyon. The second position was taken by Chas. J. Grahame, Esq., Leatherhead; and the third by H. V. Machin, Esq., Gateford Hill, Worksop.

Another class for thirty-six distinct single trusses was also won by E. B. Lindsell, Esq., the exhibit again being a handsome one. The blooms were Mrs. John Laing, Susanne Marie Rodocanachi, Edward Andre, Comtesse d'Oxford, Madame Hoste, Duc d'Orleans, Kaiserin Augusta Victoria, Comte de Raimbaud, Heinrich Schultheis, Earl of Dufferin, Madame de Watteville, Duchess of Caylus, Caroline Testout, Louis Van Houtte, Charles Lefebvre, Captain Hayward, Madame Gabriel Luizet, Alfred Colomb, La France, Horace Vernet, Her Majesty, Gustave Piganeau, Innocente Pirola, Marie Baumann, Marchioness of Dufferin, Prince Arthur, Muriel Grahame, François Michelon, Catherine Mermet, Dr. Andry, Souvenir d'Elise Vardon, Le Havre, A. K. Williams, Ulrich Brunner, Merveille de Lyon, and Mons. E. Y. Teas. E. Hobbs, Esq., Easton, Bath; and Mr. W. Mease, gardener to Alfred Tate, Esq., Downside, Leatherhead, took the second and third prizes in the order in which their names are given.

In the class for eight distinct varieties, three blooms of each, the successful competitors were E. B. Lindsell, Esq.; the Rev. J. H. Pemberton, and Mr. W. Mease, in the order of their names. The winner staged fine specimens of Mrs. W. J. Grant, Earl of Dufferin, Ulrich Brunner, Marchioness of Londonderry, Mrs. John Laing, Horace Vernet, Her Majesty, and A. K. Williams.

For twelve single trusses of any Rose except Teas and Noisettes the first prize went to H. V. Machin, Esq., with superb examples of Gustave Piganeau. Mr. Davis, gardener to J. Gurney Fowler, Esq., Glebelands, South Woodford, was second; and the Rev. J. H. Pemberton third.

Open only to growers of less than 2000 plants.—In this section the class for twenty-four distinct single trusses, S. S. Berger, Esq., Bragbury, Stevenage, was placed first, though the stand exhibited by Edward Mawley, Esq., Rosebank, Berkhampsted, which took second prize, was apparently the better one of the two. R. E. West, Esq., Reigate, was third.

For six trebles, distinct, E. Mawley, Esq., went to the front with beautiful specimens of Mrs. John Laing, Horace Vernet, Madame Gabriel Luizet, Ulrich Brunner, Dupuy Jamain, and Marie Finger. Percy Burnand, Esq., Reigate, was second, and Conway Jones, Esq., Hucclecote, Gloucester, third.

O. G. Orpen, Esq., with splendid blooms of Kaiserin Augusta Victoria was first in the class for nine blooms of any Rose other than a Tea or Noisette; E. M. Bethune, Esq., Horsham, was second with Marie Baumann, and A. Slaughter, Esq., Steyning, third, with Charles Lefebvre.

Open only to growers of less than 1000 plants.—There were only two classes in this section, but the competition was keen, the entries numerous, and the quality good. For nine distinct single trusses George Moules, Esq., Hitchin, was an excellent first, with a splendid stand comprising Caroline Testout, Earl of Dufferin, François Michelon, Her Majesty, Catherine Mermet, Ulrich Brunner, Souvenir d'Elise Vardon, Comte de Raimbaud, and Beauty of Waltham. M. Whittle, Esq., Leicester, was second, and Mrs. A. F. Perkins, Holmwood, Surrey, third.

The other class was for six distinct trebles, the first prizewinner being G. W. Cook, Esq., Finchley. His blooms were La France, Captain Hayward, Mrs. John Laing, Ulrich Brnnner, Kaiserin Augusta Victoria, and Général Jacqneminot. R. H. Langton, Esq., Hendon, with small flowers, was second, and M. Whittle, Esq., third.

Open only to growers of less than 500 plants.—Those growers whose stock of plants does not exceed the above number were given three classes in which to show their mettle. For nine distinct single trusses R. F. Hobbs. Esq., Bromyard Road, Worcester, followed by R. W. Bowyer, Esq., Hertford, and F. J. Fletcher, Esq., Bray, in the order named. For six distinct single trusses, the first, second, and third prizewinners were Messrs. A. Mount, Slough; E. R. Smith, Muswell Hill; and G. A. Hammond, Burgess Hill, respectively; H. P. Landon, Esq., Brentwood, taking the fourth place. The last named gentleman secured the leading award for four trebles, distinct, with Caroline Testout, Mrs. John Laing, Victor Hugo, and La France. J. Parker, Esq., Old Headington, was second; and R. Foley Hobbs, Esq., third.

Extra classes.—In addition to the several specified classes already noted there were several others with some restrictions, and to these we shall now refer under the above heading. In a class only to those eligible to compete in classes 14 to 18, for twelve distinct single trusses, C. J. Grahame, Esq., offered a handsome silver cup to the chief prizewinner. This was won by W. Kingston, Esq, Grey Street, Bedford, who showed Ulrich Brunner, Souvenir d'Elise Vardon, Alfred Colomb, Xavier Olibo, Catherine Mermet, Louis Van Houtte, Mrs. John Laing, Camille Bernardin, A. K. Williams, La France, Général Jacqueminot, and Etienne Levet, in highly creditable form. The Rev. A. Cecil Johnson, Capel St. Mary, was second, and M. Whittle, Esq., third. For six blooms of any Hybrid Perpetual or Hybrid Tea, G. W. Cook, Esq., was first with Mrs. John Laing; J. O. Trueman, Esq., Swanley, second with Her Majesty, and R. W. Bowyer, Esq., third with Caroline Testout. This class was subject to the same restrictions as the one immediately preceding it.

In a class for six distinct single trusses, open to all amateurs, C. J. Grahame, Esq., offers a cup known as the Dickson cup for blooms of varieties sent out by Messrs. A. Dickson & Sons, Newtownards, Ireland. E B. Lindsell, Esq., secured the coveted honour with examples of Helen Keller, Marchioness of Londonderry, Marchioness of Dufferin, Earl of Dufferin, Muriel Grahame, and Mrs. R. G. Sharman Crawford in good form. The Rev. J. H. Pemberton was second, and A. Slaughter, Esq., third.

The Rev. A. Cecil Johnson was the most successful competitor in the class for six distinct single trusses. No competitor was allowed to exhibit who had previously won a prize at any show of the National Rose Society. Mr. Johnson staged Kaiserin Augusta Victoria, Ulrich Brunner, François Michelon, Marie Baumann, and Mrs. John Laing. J. C. Trueman, Esq., was second, and F. Brewer, Esq., Wood Green, third. In this class the first prize took the form of a piece of plate presented by Messrs. D. Prior & Sons, Colchester. For six blooms, distinct, from growers who had joined the Society since the Crystal Palace Show last year, S. S. Berger, Esq, was first; Miss Jebb, Rotherham, second, and the Rev. R. Powley, Warminster, third.

E. Mawley, Esq., offered as the first prize in a class for six distinct single trusses a piece of plate of the value of 2 guineas. The restriction was that the flowers should have been grown within eight miles of Charing Cross. The winner, G. W. Cook. Esq., staged La France, Captain Hayward, Comtesse d'Oxford, Caroline Testout, Duke of Wellington, and Mrs. John Laing. J. Bateman, Esq., Highgate, was second; and E. R. Smith, Esq., third.

Then there was a class for six distinct single trusses of new Roses, open to all amateurs. The Rev. J. H. Pemberton was first with Marquis de Litta, Marchioness of Downshire, Captain Hayward, Helen Keller, Mrs. R. G. Sharman Crawford, and Charlotte Guillemot. O. G. Orpen, Esq., was second; and J. Bateman, Esq., third.

Teas and Noisettes. — Corresponding in importance with the amateurs' trophy for thirty-six distinct Roses is what is designated the Tea and Noisette trophy, the class being open to all amateurs, irrespective of the number of plants which they grow. Eighteen distinct single trusses were required, and as usual the class caused a considerable amount of interest. O. G. Orpen, Esq., was the winner with a stand composed of some lovely specimens, including Maman Cochet, Madame Hoste, Souvenir d'Elise Vardon, Souvenir d'un Ami, The Bride, Ernest Metz, Innocente Pirola, Comtesse de Nadaillac, Princess of Wales, Madame Cusin, Cleopatra, Marie Van Houtte, Catherine Mermet, Medea, Maréchal Niel, Sylph, Caroline Kuster, and Madame de Watteville. C. J. Grahame, Esq., was second with a charming exhibit; and S. P. Budd, Esq., Gay Street, Bath, third.

In the class for twelve Teas and Noisettes, open to all amateurs, E. M. Bethune, Esq., was first with an even stand. The varieties were

Maman Cochet, Francisca Kruger, Madame Cusin, Medea, Catherine Mermet, Caroline Kuster, The Bride, Bridesmaid, Madame Margottin, Marie Van Houtte, Etoile de Lyon, and Ethel Brownlow. The Rev. Hugh Berners, Harkstead Rectory, Ipswich, was a good second, and S. P. Budd, Esq., third.

C. J. Grahame, Esq., was first in the open amateurs' class for eight distinct single trusses, staging Madame de Watteville, Caroline Kuster, Maman Cochet, Innocente Pirola, Catherine Mermet, Francisca Kruger, Madame Cusin, and The Bride. S. P. Budd, Esq., was a fair second, and O. G. Orpen third. For nine single trusses of any Tea or Noisette E. M. Bethune, Esq., was first with Catherine Mermet in fine form, C. J. Grahame, Esq., second with beautiful Madame Cusin, and O. G. Orpen third with the same variety.

Open only to growers of less than 500 *Teas or Noisettes.*—J. Parker, Esq., was first in the class for twelve distinct single trusses of Teas and Noisettes with Madame Cusin, Marie Van Houtte, Princess of Wales, Catherine Mermet, Madame Hoste, Madame de Watteville, Caroline Kuster, and Anna Ollivier. The second and third positions were taken by the Rev. J. H. Pemberton and Conway Jones, Esq.

For nine distinct single trusses of Teas or Noisettes, Miss Baker, Reigate, was first with Maman Cochet, Madame Hoste, Ernest Metz, Alba Rosea, Etoile de Lyon, Jean Ducher, Princess of Wales, The Bride, and Francisca Kruger. P. Burnand, Esq., second; and E. Mawley, Esq., third.

Open only to growers of less than 200 *Teas and Noisettes.*—The Rev. A. Cecil Johnson was first in the class for nine distinct Teas or Noisettes. The varieties were Medea, Corinna, Cleopatra, Madame de Watteville, Madame Cusin, Souvenir d'Elise Vardon, Princess of Wales, Madame Lambard, and The Bride. G. Moules, Esq., was a good second; and J. Parker, Esq., third.

The Rev. F. Burnside, Berrington Rectory, Shrewsbury, was first for six Teas or Noisettes, distinct, one truss of each. His flowers represented Madame Bravy, Comtesse de Nadaillac, Innocente Pirola, Jean Ducher, Hon. Edith Gifford, and Catherine Mermet. M. Whittle, Esq., was second; and R. W. Bowyer third.

Extra Tea and Noisette classes.—The following two classes were open only to those entitled to exhibit in classes 33 to 36 inclusive. In the one for four trebles, distinct, J. Parker, Esq., was first. The varieties staged were The Bride, Madame Cusin, Catherine Mermet, and Marie Van Houtte. A. Slaughter, Esq., was second, and Conway Jones, Esq., third. For six single trusses of any one variety R. Foley Hobbs, Esq., was first with Catherine Mermet in good form, J. Parker second with the same variety, and Mrs. E. Croft Murray, Ryde, third with the Hon. Edith Gifford.

Messrs. Paul & Son, Cheshunt, offer a piece of plate as the first prize in an open class for six bunches of Teas or Noisettes, seven trusses of a variety to comprise a bunch. O. G. Orpen, Esq., was first with Anna Ollivier, Medea, Marie Van Houtte, Madame Hoste, Madame Cusin, and Francisca Kruger. J. Gurney Fowler, Esq., was second, and J. Parker third.

Open Classes.

Having given an idea as to the chief prizewinners in the nurserymen's and amateurs' sections, we will now see what was staged in the section headed "Open Classes," which comprised the following eleven classes. Here again the excellent flowers staged were very numerous, and the weak ones few. The whole of the exhibitors were nurserymen, and some of the stands were of exceptional beauty.

Mr. J. Mattock was a splendid first in the class for twelve bunches, not more than seven trusses to a bunch, to consist of any varieties of H.P., H.T., T., or N. Space occupied by exhibit not to exceed 6 feet by 4 feet. Amongst the varieties were Margaret Dickson, Innocente Pirola, Comtesse de Nadaillac, Madame Hoste, Madame de Watteville, and Marie Van Houtte. Messrs. Paul & Son were second, and R. Crossling third.

For twelve single trusses of Hybrid Teas, in not less than nine varieties, Messrs. D. Prior & Sons were first with La France, Kaiserin Augusta Victoria, Caroline Testout, Marquis de Litta, White Lady, Mrs. W. J. Grant, Captain Christy, Augustine Gainoisseau, La Fraicheur, and Lady Mary Fitzwilliam in good condition. Messrs. A. Dickson & Sons were second, and Messrs. Frank Cant & Co. third.

Mr. G. Prince, Oxford, was first in the class for twelve single trusses of any yellow Rose with superb examples of Comtesse de Nadaillac. Messrs. J. Townsend & Son were second with beautifully coloured Marie Van Houtte, and Mr. B. R. Cant third with Madame Hoste.

In the class for twelve single trusses of any white Rose the competition was very keen, and many superb Roses were staged. Messrs. A. Dickson & Son were placed first with chaste examples of Kaiserin Augusta Victoria; Mr. B. R. Cant came second with Marchioness of Londonderry, and Messrs. J. Townsend & Son third.

A. K. Williams, staged by Messrs. A. Dickson & Son, was to the front in the class for twelve trusses of any crimson Rose, and excellent the flowers were. Messrs. D. Prior & Son came second with Ulrich Brunner, and Messrs. J. Townsend & Son third with A. K. Williams.

For twelve blooms of any dark velvety crimson Rose Horace Vernet was first and second as staged by Messrs. Harkness & Son and Mr. B. R. Cant, and Louis Van Houtte third from Messrs. A. Dickson & Son.

There were seventeen entries in the class for twelve blooms of any light Rose, exclusive of white, Messrs. J. Townsend & Son taking first place with Mrs. John Laing, followed by Mr. B. R. Cant and Messrs. D. Prior & Son with Her Majesty.

Mr. B. R. Cant staged Madame Cusin in superb form in the class for twelve blooms of any Tea or Noisette, and received the first prize. Mr. G. Prince was second with The Bride, and Messrs. F. Cant & Co. third with Madame de Watteville.

For twelve single trusses of new Roses there were eight competitors, of whom Messrs. A. Dickson & Son were placed first with Countess of Caledon, Tom Wood, Lady Clanmorris, Ulster, Mrs. Mawley, Mrs. W. J. Grant, Elleen, Killarney, Daisy, Mrs. Grahame, First Cross, and Bessie Brown. Messrs. F. Cant & Co. were second, and Mr. B. R. Cant third.

There was a class also for new seedling Roses or distinct sports, of which three blooms and a ground plant had to be shown, and for which cards of commendation or a gold medal were awarded according to merit. Mr. W. Rumsey got a "card" for Mrs. Rumsey, a variety soft rose in colour and of good quality; Messrs. Paul & Son, Cheshunt, for Rose Royal Scarlet, a single variety of much beauty, while Messrs. A. Dickson & Son received the gold medal for Ulster, a lovely silvery rose coloured variety of the first merit.

Garden Roses.

Nurserymen.—The display made by the garden Roses, so called, was a very beautiful one—or rather, two beautiful ones, for the classes were divided, and the interest in these Roses with the public is evidently growing rapidly, if we may judge by the admiration they elicited. It is to be hoped that at future shows the blooms in this section will be staged together, so that their full beauty may be appreciated by all.

In the class for thirty-six bunches, distinct, not less than three trusses to a bunch, Messrs. Paul & Son were first. They staged, amongst others of great beauty, Crimson Rambler, Madame Falcot, Perle d'Or, Rosa Gallica, Rosa Mundi, Madame Pernet Ducher, Carmine Pillar, Bardou Job, Marquise de Salisbury, and Rose Apples. Messrs. G. Cooling & Sons, Bath, were second.

Mr. C. Turner arranged a magnificent exhibit in the class for eighteen bunches of garden Roses, each bunch to be composed of not less than three trusses. The stand was composed of Bardou Job, The Garland, Madame Pernet Ducher, Rosa Mundi, Macrantha, Crimson Rambler, Felicité Perpetué, Commandant Beaurepaire, Laurette Messimy, Moschata alba, Cabbage Provence, Red Damask, Hebe's Lip, Common Moss, Madame G. Bruant, Perle d'Or, Reine Olga de Wurtemburg, and Anna Maria de Montravel. The second position was adjudged to Mr. J. Mattock, and the third to Messrs. J. Townsend & Son.

Amateurs.—In this section, Lord Penzance offers a silver cup as the first prize for eighteen bunches of garden Roses in distinct varieties, not less than three trusses to a bunch. For the third year in direct succession H. V. Machin, Esq., has secured the premier award, and each time it has been deserved. The stand comprised Camoens, Marie Pavie, Bandou Job, Cecile Brunner, Crimson Rambler, Mignonette, Laurette Messimy, Anna Maria de Montravel, Macrantha, Marquise de Salisbury, Perle d'Or, Bennett's Seedling, Madame Pernet Ducher, Rosa Mundi, Gloire de Polyantha, Homère, Paquerette, and Red Damask. Alfred Tate, Esq., was second for the third time in succession also. How will it be next year? It is evident both these gentlemen are fighters.

For six bunches, distinct, Mrs. A. F. Perkins was first with Madame Pernet Ducher, Triomphe de Pernet père, Madame C. Guinoisseau, Marquise de Salisbury Madame Plantier and Camoens. F. W. Campion, Esq., was second, and the Rev. J. H. Pemberton third.

Buttonhole Roses.

The class for twelve bunches of Roses suitable for buttonholes, not less than six varieties, nor less than three or more than seven trusses to a bunch, was very interesting. Mr. J. Mattock was a fine first with Gustave Regis, Rubens, Madame de Watteville, Madame Hoste, Madame Falcot, Hon. Edith Gifford, Anna Ollivier, Amazone, Niphetos, Ma Capucine, Comtesse de Nadaillac, and Innocente Pirola, each in good condition. Mr. G. Prince was second, and Mr. A. G. Green, Colchester, third.

Medal Roses.

As is customary the Society offered four silver medals for the best flowers in the show, two to come from the nurserymen's section and two from the amateurs. The best H.P. in the first named section was Horace Vernet, staged by Messrs. Harkness & Son; and the best Tea, Madame Cusin, shown by Mr. B. R. Cant. In the amateurs' division O. G. Orpen, Esq., with Kaiserin Augusta Victoria, was one of the medallists, the other being E. B. Lindsell, Esq., with Muriel Grahame.

Miscellaneous Exhibits.

The exhibits coming under this designation were very numerous, and several of them of excellent quality, but want of space precludes the possibility of our giving more than a passing reference to any of them. Messrs. J. Laing & Sons, Forest Hill, sent Begonias, Caladiums, Roses, and hardy flowers; Mr. M. Pritchard, Christchurch, hardy flowers; Messrs. A. W. Young & Co., Stevenage, Foxgloves, Canterbury Bells, and Poppies; Messrs. J. Cheal & Sons, Crawley, Violas, Roses, and other flowers; Messrs. W. Paul & Son, Waltham Cross, Roses, both cut and in pots; R. Wallace & Co., Colchester, Lilies and Calochorti; Mr. H. Foster, Brockhampton, Sweet Peas; Messrs. G. Bunyard & Co., Maidstone, Roses; Messrs. Paul & Son, Cheshunt, hardy flowers; and Messrs. G. Jackman & Son, Woking, Roses.

If the exhibition of the National Rose Society at Portsmouth were the smallest the Society has yet held, that which took place at the Crystal Palace on the 2nd inst. proved on the other hand the most extensive on record. The number of exhibition Roses staged in compe-

tition on that occasion amounted in all to 7200, or 1450 more than the average for the five previous metropolitan shows of the Society, and 100 blooms more than at the largest of those exhibitions—that of 1892.

There were over 100 exhibitors, whose exhibits, arranged according to the number contributed by each county, were as follows:—Essex heads the list with 71 exhibits, Surrey comes next with 51, then Middlesex with 35, Herts 34, Kent 32, Oxford 29, Notts 26, Somerset 20, Sussex 20, Worcester 19, Gloucester 15, Suffolk 15, Berks 12, Leicester 10, Wilts 8, Bucks 7, Devon 6, Hants (including Isle of Wight) 6, Derby 5, Northampton 5, Yorks 3, Bedford 2, Cambridge 2, Shropshire 2, Dorset 1, Stafford 1, and Warwick 1. In addition to the English contributions, seven exhibits came from Wales and eleven from Ireland, but, unlike last year, there were no Scottish-grown Roses. Seldom, if ever, has the Society held a more enjoyable exhibition.

The day, although dull, proved fine and cool, thus allowing the blooms to continue fresh and bright during the whole day. The general quality of the flowers was remarkably good, and particularly was this the case in the exhibits from many of the smaller growers. Moreover, there was at no time any overcrowding, so that the blooms could be inspected in comfort by both members and visitors.—E. M., *Berkhampsted.*

DEATH OF MR. W. K. WOODCOCK.

We much regret, as will many of our readers, to hear of the death of this well-known excellent gardener and worthy man. The sad event occurred on Friday night last at the Victoria Nurseries, Leicester, from pneumonia and a complication of diseases following a chill. Mr. Woodcock was for a considerable time gardener to Sir F. Mappin and Mrs. Mark Firth, near Sheffield, where he acquitted himself most creditably and well. He took an active part in the Horticultural and Chrysanthemum Society of Sheffield, as well as in gardeners' educational societies in the West Riding of Yorkshire, and his services were much in demand and willingly given in the reading of papers. He subsequently took a small nursery near Syston, devoting much attention to Chrysanthemums, and working with great diligence generally, eventually taking the Victoria Nursery, Humberstone. He was at the same time horticultural instructor for the Norfolk County Council, a position which he filled with satisfaction to all. He leaves a widow and grown up family, who, it is hoped, will be able to carry on the business as before, when they had the supervision of the experienced head. Mr. Woodcock was a genuine type of a British gardener, and we do not think was sixty years of age. We reproduce a portrait that was taken a few years ago.

Fig. 6.—Mr. W. K. Woodcock.

I am sure that many of the readers of the Journal will be sorry to hear of the death of Mr. Woodcock. He caught a chill while delivering a lecture in the open air at Norfolk, and, although he got better, he had a relapse from which he did not recover. I have known Mr. Woodcock for about ten years, and I have always found him a most kind, genial, and true friend. He was well up in all horticultural matters, and always tried to keep abreast of the times, and I am sure he will be greatly missed by a large circle of friends.—J. Lansdell, *Barkby Hall, near Leicester.*

RIPE STRAWBERRIES.

Illustrating the earliness or otherwise of the seasons by the ripening of the first fruits is always an interesting subject to me. To be brief, I will mention that last year our first fruits were ready for picking on the 6th of June; this year our first picking took place on the 23rd of the same month, just seventeen days later.

The following sorts were planted on the same day—namely, Royal Sovereign, Scarlet Queen, Noble, King of Earlies, and John Ruskin, and for all practical purposes ripened together. Although all alike in this respect, there is a great difference in the quality of the ripe fruit. Royal Sovereign takes the first place here for size and flavour; next I prefer Scarlet Queen, John Ruskin, King of Earlies, and last of all Noble. These remarks may not coincide with other growers in other districts on diversities of soils.

Last year several short notes appeared in the Journal on this subject; a few more this year would be welcome if the districts were indicated by the writers.—J. Easter, *Nostell Priory Gardens.*

OXYLOBIUM CALLISTACHYS.

This ornamental shrubby plant does not appear to be so generally well known as it might be, or it would be more extensively cultivated. Either as small plants for the side stages of the conservatory or as plants 4 feet high in large pots it would be found very useful. Like most of the Australian plants Oxylobiums require only ordinary greenhouse treatment, but to make them flower freely allow them enough sun to thoroughly ripen their shoots. They will be found to thrive best in a compost of fibry loam and peat of about equal parts, with plenty of silver sand added. Oxylobium callistachys (fig. 7) has bright yellow pea-shaped flowers produced in dense clusters, and is very showy, as are also many of the other species. The genus is a large one, but many of the species are not known in English gardens.

THE YOUNG GARDENERS' DOMAIN.

Lilium Harrisi.

Plants of Lilium Harrisi which have been forced for early decoration will now have ceased flowering, and many of them will be starting into growth from the base. Such plants as appear to be throwing up strong shoots may render capital service later in the season by cutting down the old stems and repotting in smaller sized pots, thus giving a fresh start. A cold frame will be suitable to grow them in and make dwarf plants. The stems do not attain much height when treated in this way, about 6 inches being the average. A very pleasing effect is obtained during the late season of the flower garden if they are plunged about the edges of herbaceous or mixed borders.

I have one bulb which has produced three stems, each bearing two fairly good blooms. It was forced amongst a number for the Whitsuntide decorations, but as the flowers were malformed it was cut down and allowed to start again from the bottom. Perhaps the deformity of the first blooms and cutting down the stem before allowing it to ripen would tend to increase the subsequent rapid growth.—R. A. Anderson, *Alnwick.*

Acalyphas.

For decorative purposes this is a very useful class of plants, their foliage contrasting effectively with Crotons and other kinds. If possible the tops of o'd plants should be selected for cuttings, as they, being stronger, grow more freely than side shoots. Insert them in thumb pots of light soil in early spring, and place in a brisk bottom heat, where they quickly emit roots. The plants may be soon afterwards placed in larger pots, using a compost of loam and peat, with a little leaf soil and sand. Peat is not used by some growers, but I consider it enhances the dark rich colour of the foliage. After potting place the plants in a stove temperature till they are established, when they may be either retained in the stove or arranged in the greenhouse. They last longer and assume a better colour with cool treatment during the summer, but they require a stove for wintering in. Liquid manure is very beneficial when the plants are root-bound.

It is a good plan to insert several cuttings at intervals during the summer, as the earliest plants get too tall towards the end of the season, while the latest last well through the winter, and serve for stock plants the following spring.

Acalyphas are sometimes employed for bedding, but the plants require to be strong and well prepared before being placed outside in the beds. Their worst enemies are thrips and mealy bug. A sharp look-out must be kept for these pests, and some approved insecticide promptly used, as the leaves are soon spoiled, and will drop, especially so in the case of attacks by thrips.—Balcarres.

Peaches and Nectarines.

Of late years these fruits have been more extensively grown outside than formerly, still they may be grown a great deal more yet with advantage to all concerned. Gardeners are becoming aware of the fact that excellent fruit can be produced by attention to cultural details from south, south-east, south-west, or east walls in various parts of England. The best aspect, of course, is south, although the finest wall of trees and fruit I have seen faces east. In ordinary seasons good-flavoured Peaches and Nectarines from this wall have turned the scale at 12 ozs. I am of opinion that more failures occur through neglecting cultural details than from aspects of walls. This is not so much a matter of want of knowledge on the subject, as sparing the necessary time to do what is needed at the right moment.

Elaborately made borders are not necessary for growing Peaches, as ordinary garden soil will in most cases suffice by adding clayey loam to light, and wood ashes, lime rubble, or road grit to heavy soils, rich borders being very detrimental to good fruit-bearing wood. The best time for planting is the autumn, selecting young trees without any trace of gumming. Plant about 6 inches from the wall, just deep enough to cover the top roots 2 inches. Make the soil firm by treading, and mulch with strawy manure to prevent radiation and conserve warmth.

The mode of training generally pursued is fan-shaped, which is perhaps the best, as it tends to arrest what would otherwise be exuberant growth. It is better to secure the growths and stems to wires, than to nail them to the walls, as the trees can be cleaned more easily, and the walls from constant nailings soon afford harbour for insects. If the disbudding is done properly, and sub-laterals stopped, very little pruning is necessary, with the exception of removing old

fruiting wood and rank growths. Strong growing trees should be root-pruned in the autumn.

Disbudding the growths is one of the most important features connected with successful Peach growing, and perhaps the most neglected. It should be done at intervals of about ten days, beginning as early as possible; first removing those growths which are badly placed, and also such strong growths as might be likely to develop into rankness, gradually reducing to the required number, erring rather on the side of sparseness than overcrowding, which is ruinous.—J. L. G.

(To be continued.)

Useful Winter Plants—Richardias.

In former papers I have treated on Salvias, Chrysanthemums, and Zonal Pelargoniums; I will now continue with the so-called Arum Lily, Richardia æthiopica, named after Mons. Richard, a French botanist. Richardia or Calla æthiopica is the best known and most grown of the genus. It is also called the Trumpet Lily and Lily of the Nile, though why the latter I do not know, as the plant is a native of South Africa. The spathes are much in demand for church decoration at Christmas and Easter, market growers often obtaining fancy prices at those times. Like enterprising men, as they are, they try to have as many flowers as possible at such seasons, when the wholesale price is a shilling or more each.

This Richardia is a most accommodating plant, succeeding well under various systems of culture. For growing for cut flowers I find planting out in trenches, prepared as for Celery, the best method, though they need scarcely be so deep and less manure may be used. Stand the pots of Lilies outside in a sheltered spot in May to harden, little water being required. The time to increase the stock is when the planting is done by dividing the crowns of large plants. Lifting is done about the first week of September, standing the plants under a north wall for a couple of weeks after potting. They may then be moved to a warm or cold house according to the time a large number of flowers are required.

A plentiful supply of water must be given after the plants start growing in the trenches, liquid manure doing good if used a few times. The soil used for potting the plants must be rich, as generally the roots nearly fill the pot, and may consist of loam two parts and a part each of leaf mould and horse droppings, with a sprinkling of bonemeal and soot. Liquid manure may be used with advantage. Water often after the pots are full of roots. Market growers usually use 5 and 6-inch pots for plants with one growth, and it is surprising how many flowers such plants give in a season.

For specimen plants in pots and tubs I prefer to dry the plants off, reduce the old ball, and repot in July, placing the plants where heavy rains may be warded off for a time. By placing them inside before those planted out flowers in quantity may often be had very early. The soil for potting specimens need not be so rich as for potting those planted out. Loam one-half, leaf mould one-fourth, and a fourth of horse droppings with a dusting of soot and bonemeal, or any of the artificial manures advertised in the Journal answering well.—W. T., *Ireland*.

Cucumber Culture (*continued from page* 11).

When the roots of the plants have pushed through the small mounds they are planted in, more compost must be added, and this should be of the same kind as before. Continue this process whenever the roots show outside the soil. Stop the plants the first time at the fourth joint, and afterwards always at the second.

Never allow the shoots to become crowded, but keep them thinned; and the fruit should also be kept thinned, allowing only one to each joint. All male flowers and tendrils ought be removed. The night temperature of the house should be about 70°, and may be allowed to rise to 90° or 100° in the daytime.

Winter Cucumbers.—The treatment for these varies somewhat from the summer, but the compost may be the same as mentioned for the summer plants, with a little charcoal added.

The main point is to get the plants well established before the winter months, and this can be done by sowing early in September. Allow the plants to grow about 2 feet before the first stopping, and afterwards stop at the second joint. Great care must be taken that the soil does not get too wet, or the plants will fail. Syringing should only be done on bright days, and then only once, for damping the paths will afford sufficient atmospheric moisture. A night temperature ranging from 65° to 70° will be sufficient for them.

Cultivation in Frames.—The first thing is to prepare plenty of litter and leaves. These should be well mixed, and a bed made at least 3 feet thick, and 2 feet wider than the frame. Tread the bed firmly, and set the frame on it with a southern aspect. Place a ridge of soil in the frame, and in this, when the steam from the bed is exhausted, insert the plants at a distance of 3 feet apart. A light shading will be necessary during the hottest part of the day, and adequate air must be afforded. Like Cucumbers in houses, they require plenty of atmospheric moisture, and the frame should be damped morning and afternoon. No trellis will be required, but the shoots should be stopped at the second joint, and also kept thinned out.

As to varieties there are many, and each grower has his favourite, but for general use I think Telegraph has yet to be excelled. Green fly, thrips, and red spider are the chief enemies of the Cucumber, and as soon as these put in an appearance fumigate with tobacco, or syringe with a solution of quassia. Eelworms are dreaded enemies, and plants that are attacked soon succumb. They live in the tissues of the roots, and from thence derive their nourishment. The safest way to be rid of this pest is to take the plants up at once and burn them, then clear the bed thoroughly out, and make a fresh start.

Whilst visiting a friend last summer he took me to see a house of Cucumbers, which he said he has cleared from an attack of eelworms. He had used a mixture of gas liquor, soluble phenyle, sulphate of iron, and kainit. The plants instead of being "droopy" presented a healthy appearance, and were bearing abundance of fruit.—Elveden.

Humea elegans.

Humeas rank amongst our best plants for decorative purposes. Whether in the conservatory, flower bed, or drawing room, they show their grace and beauty to advantage.

The seed should be sown in July or early in August, in pans, clean and well drained, in a mixture of well sifted turf and leaf mould, with a little sharp silver sand added. Place the pans on shelves near to the glass, in a house with the temperature ranging from 65° to 70°. As soon as the seedlings are large enough prick them into boxes, and when well rooted pot singly in 2½-inch pots, using the same mixture as before. Keep the plants near the glass to prevent their becoming drawn, and grow them steadily in a cool temperature.

Fig. 7.—Oxylobium callistachys.

They will require another shift later on into 5-inch pots, and when these are well filled with roots they may be transferred into the pots in which they are to flower. For the final potting 8-inch pots may be used, and they should be clean and well drained. Pot firmly in a compost of fibry loam, leaf mould, with broken charcoal, and coarse river sand added. Humeas require very careful treatment in the way of watering. If the soil become in any way sour or waterlogged the roots decay, leaves turning to a sickly yellow colour in consequence, and flagging; when this occurs the plants may as well be thrown away at once, as recovery is almost hopeless.

For bedding purposes Humeas are well adapted. They make a charming display when planted alternately with Dahlias Formosa, or Lady of the Lake, or in sub-tropical bedding. After they have served their purpose in the beds or conservatory, the plants may be cut down and dried, and their inflorescence will be acceptable for room decorations in winter.—E. J. B.

FRUIT FORCING.

Peaches and Nectarines (*Early Houses*).—The trees having been cleared of the fruit, cut away the wood on which it has been produced to the successional shoot at the base, and stop growths making more than 12 to 14 inches of wood required for bearing next year, always excepting extensions, which may be allowed to grow where there is room. Pinch the laterals at the first leaf and to subsequent as made, thinning where crowded. Syringe forcibly to expel red spider, and if necessary apply an insecticide. Admit all the air possible, and where practicable withdraw the roof lights from the earliest forced houses. Maintain a proper condition of moisture in the outside as well as inside borders.

Succession Houses.—Where the fruit is ripening syringing over the fruit must cease, air being given day and night so as to prevent moisture being condensed on the fruit, and thus inducing "spot" to affect and spoil the finest specimen. Moderate air moisture, however, should be secured by damping the paths and borders in the morning and afternoon, not neglecting to afford due supplies of water at the roots, with light mulchings, especially on light soils.

Where the fruit is swelling syringe morning and afternoon, not allowing red spider to get the least footing, or it will increase to the prejudice of the current and succeeding crop. Expose the fruit to the light by drawing the leaves aside, shortening them or raising on laths, with the apex to the sun. Keep the growths fairly thin and tied down, not too tightly, as they advance, stopping next year's bearing shoots at about 14 inches, if they exceed that length, and pinching the laterals to one leaf as made. Extensions may be trained in full length as space permits, but avoid crowding, and maintain, as far as possible, an even growth throughout the tree. Afford liquid manure or top-dressings of fertilisers after making the border moist, and wash in moderately to weakly trees, not neglecting the watering. A little air constantly will do much to prevent scorching, and the enlarging of the openings early in the morning will secure a long day's work of elaboration, always provided the temperature be not lowered but advances with the sun heat.

Late Houses.—It is only possible to have fruit very late by keeping the houses as cool as possible during the hot summer months, ventilating day and night, but not in windy weather, this causing the current to rush through the structure and dry the atmosphere excessively. Nothing is gained by that, but often a rich harvest of battered leaves and a plentiful crop of red spider. This pest must be laid low by forcible syringings in the morning and late afternoon, the trees having also plenty of water and nourishment at the roots, with mulchings of partially decayed lumpy manure, and these kept moist will keep the roots near surface. Avoid, however, heavy mulching, about an inch thickness sufficing, adding to it from time to time. Do not allow too many fruits to remain for the crop, but thin them betimes, leaving about a fruit to each square foot of trellis covered by the trees.

Pines.—*Starting Suckers*.—In order to accommodate these from the early section of summer-fruiting plants, a fermenting bed in a low house or pit must be got ready, and its heat steady at 90° about 6 inches from the surface. Take the suckers from the parent plants carefully, trim the base smoothly, and place directly into 5 or 7-inch pots, according to the size of the suckers, and water once in order to settle the soil about them. Good fibrous loam, torn up by hand, without any admixture, is the most suitable compost; embed it firmly in the pot, so that a sturdy growth may be insured in the plants. Keep the suckers rather close and shaded for a week or ten days, sprinkling through a fine rose syringe once or twice a day, according to external influences. When growth takes place ventilation with less shade is desirable, but this must be proceeded with gradually until the growth is well decided and inured to the sun; then accord them ordinary treatment.

Placing in Fruiting Pots.—When the suckers are well rooted they should be transferred to the largest pots before the roots become matted together. Queens and Black Jamaica should be given 10-inch pots, other sorts 11 or 12 inch, using fibrous loam, but more lumpy than for suckers, adding a sprinkling of steamed bonemeal; and to prevent worms entering the pots either use worm excluders or a handful of soot or wood ashes sprinkled over the drainage. Pot firmly, and accelerate growth as far as it is consistent with a sturdy habit.

Strawberries in Pots.—For securing sturdy runners early planted ones of last year afford them soonest and best, especially when not overcropped and not neglected for watering. The plant should have shown blossoms, because runners from fruitful plants always turn out better than those from fruitless strong-growing parents. The runners may be (1) layered in the fruiting pots, (2) on turves, and (3) in small pots. All three plans are good. In any case it is essential that the first runners, which give the finest plantlets, should be selected, and that they be induced by watering to emit roots freely at once, so that they may by judicious attention develop into sturdy plants and form good crowns. If layered into the largest pots they need not be detached until thoroughly established. Those layered in turves or 3-inch pots should, as soon as rooted properly, be detached and stood in a shady place for a few days, preparatory to shifting them into the fruiting pots. These may be 5-inch for very early work and 6-inch for succession, with 7-inch for late forcing. Nothing is gained, however, by using large pots.

For very early use La Grosse Sucrée is unrivalled, as it both sets and swells the fruit well, this being of good size, colour, and quality. Vicomtesse Hericart de Thury also sets, swells, and finishes fine glossy fruits of good flavour. Royal Sovereign cannot well be termed a first early, but is excellent as a second, or where few are grown may take the former position. It is everything that can well be desired in cropping, colour, and quality. If the Keen's Seedling be had true it has merits that are always appreciated for home use, the deep colour and fine quality always pleasing. Similar remarks apply to Sir Harry and President, but neither travels well. Noble has much to recommend it for cropping and size, but there it ends; and Auguste Nicaise, though much brighter in colour and in flavour, is considered coarse by some, but both are esteemed for supply and appearance. Sir Joseph Paxton yields to no other for affording full crops of large and first quality fruit as a mid-season or rather late forcer. For brightness of colour Sir Charles Napier stands supreme, not any shine like it, but it belies the looks in quality. Lucas, a very compact grower, produces abundance of the choicest quality fruit, and gives a fitting foretaste of British Queen, as also does Gunton Park. Dr. Hogg and Cockscomb, with La Constante, run the "Queen" hard for quality, yet spite of all it remains supreme. Waterloo as a darkie of good using quality may have place, but some do not, while others appreciate very dark-coloured fruit.

The pots must be clean inside and outside, have a large crock over the opening, three or four of lesser size, and some smaller still, so as to form about an inch of drainage. This should be secured with the rougher parts of the compost rammed tightly down. Turfy loam, strong rather than light, must form the staple of the compost. Break it up roughly, adding about half a pint of bonemeal, pint of soot, and a quart of wood ashes to each bushel of soil. If these are not at hand, the advertised fertilisers answer equally well, following in each case the instructions given with them. Let the compost be moderately dry when used, for if wet it will shrink after potting, leaving the sides of the pot. Bring the soil in the pot up to the required height, ram it firmly, and finish, so that the base of the crown will be about half an inch below the rim, which must be left clear for watering, allowing a little more for the large size of pot. Stand the pots on a hard base in an open situation, but sheltered from strong winds, with sufficient space between them to allow the full exposure of the foliage. Give water as required, and sprinkle the foliage for a few days after potting. If this be followed each evening it greatly assists the plants. When the roots are working freely in the fresh soil copious supplies of water will be needed, and always give sufficient to moisten the soil through to the drainage. The plants must not be allowed to flag, and the soil ought not to be soddened by needless waterings. Remove runners and weeds as they appear.

THE KITCHEN GARDEN.

Asparagus.—Abundance of sunshine has so materially hastened the crops of Peas that there ought to be no further excuse for continuing to cut Asparagus shoots, even in the latest districts. It should always be remembered that the foundation for next season's success is laid during the preceding summer. Unless the plants form strong growths moderately early in the summer, and these are taken good care of, by roughly supporting with stakes and raffia, or Pea stakes, if need be, there will be no strong basal buds formed, and no resulting fat shoots the following spring. Where growths come up very thickly none of them will be extra strong, and it pays to thin them out in June or early in July. More good can also be done now in the way of feeding with liquid manure or by washing in a surfacing of salt and guano or special manure than can be done by heavy autumnal or spring dressings of manure. A summer mulching with short strawy manure acts beneficially, as it conserves the moisture and keeps down weeds. Too often these are allowed to get the upper hand during a busy season, and the consequence is a legacy of seeds, that proves to be a great nuisance in after years. They must be kept under now.

Runner Beans.—On no account delay staking the late rows till the plants are all entwined round each other. Those grown thinly, or nearer 12 inches than 4 inches apart, will be found to be the last to fail in hot dry weather, and, as a rule, much the heaviest croppers. Regulate them early, and if comparatively short stakes are used top the running growths directly they have reached the ends of these. Those to be grown without stakes ought to be gone over every week, and have all running growths cut hard back. Unless this is done they will quickly become matted together, and the crops will be of little value accordingly. Mulch with strawy manure for the double purpose of keeping the ground moist and the pods clean.

Cabbage.—Leaving old stumps to form fresh heads has a most impoverishing effect upon the ground, and is also objectionable where perennial weeds are apt to be troublesome, but they frequently produce very acceptable supplies of tender young hearts for autumn and winter use. Coleworts or small quick-hearting Cabbages if grown in quantity may, however, prove more profitable and less impoverishing. It is not yet too late to sow seed of the popular London Rosette or other favourite small varieties, but a fortnight earlier would, perhaps, have best met the case; a bed of small plants being ready to plant thickly in close succession to autumn-sown Onions, Garlic, and Shallots. The plan of sowing the seed where the bulk of the Coleworts are to grow

is a good one, and the best that can he followed now. If the ground to be devoted to this crop is poor dig in manure freely, making the soil firm and fine at once. Drills to be drawn 15 inches apart, and watered, if dry, prior to sowing the seed thinly. Eventually thin out the plants to 6 inches or even less apart, and the result will be a heavy supply of neat hearts of excellent quality, because quickly grown.

Leeks.—These are among the most reliable of all winter vegetables, and are proverbially hardy. They can be grown cheaply and simply on well manured, deeply dug borders. Supposing the plants were raised in the open they ought now to be 10 inches or more high, and quite large enough to put out. Give the ground about them a good soaking of water to facilitate drawing them without breaking the roots unduly, and after they are drawn lightly shorten the tops. Holes 8 or 9 inches deep, 1½ inch across, and 12 inches apart each way to be formed with an ordinary stout dibble, and a plant dropped in each. The holes not to be closed, and a watering will fix the roots. All that is further needed is to water once more if the weather keep very hot and dry, and to keep the surface free of weeds. No moulding up to blanch the stems is necessary in this case.

Endive.—In order to have extra fine, moderately early Endive. seed ought to be sown either late in June or during the first fortnight in July. The plants do not move well in hot, dry weather, and in common with Lettuce the seed may well be sown where most of the plants are to develop. As it happens, there are few vacant plots of ground in most gardens at this time of year, and the Endive has to be raised in beds accordingly. If the seed is sown thinly in shallow drills 6 inches to 8 inches apart, and a portion of the plants resulting are planted out when large enough, the rest may be left where they are. Being somewhat thick, they will press against each other and close up, an excellent supply of early, well-blanched hearts resulting.

Tomatoes. — Those planted out against walls and in sunny positions generally have made good progress, and most probably will continue to do so, provided they are not neglected in any way. Unless extra leading growths are wanted for furnishing blank spaces, all but the most central shoot should be early cut or pinched out, and the requisite training he done before the plants become set crooked. Early Ruby and a few other varieties are apt to form coarse central flowers, and these if retained are invariably followed by rough ugly fruit. Pinch them out as soon as this can be done safely, and this will greatly benefit the smaller later flowers, adding considerably to the value of the crop. A good soaking of water once a week will not be wasted on the plants in hot, dry weather, and a mulching of strawy manure will also do good.

Turnips.—Early in July is a good time to sow Turnip seed in quantity. In some seasons and gardens it not unfrequently happens that this sowing results in the production of the most serviceable supply of roots for the winter, especially where the value of the Chirk Castle Blackstone is realised. A cool site is desirable, and the ground well prepared, good Turnips seldom being had from poor soil. Open drills 15 inches apart, water if dry, and sow the seed thinly.

PLANT HOUSES.

Crotons.—Pot all free-growing plants that are well furnished at the base into 7 and 8-inch pots, or even into larger if plants in these sizes can be employed for furnishing. Plants that have become too tall may have their heads re-rooted, so that well coloured side shoots will be produced for rooting later in the season. Where quantities of decorative plants with ornamental foliage are needed in rooms during the winter months too many Crotons in various sizes cannot well be produced. We have always a good stock of highly coloured plants in 2 and 3-inch pots, which are most useful for association with Ferns, Mosses, and other dwarf-growing plants. Do not shade the plants, but expose them fully to the sun, so that their rich colours can be developed. Syringe them liberally, and close the house early in the afternoon. Give a little artificial manure to the surface of those that it is necessary to keep in certain sizes when they are full of roots.

Dracænas.—Where plants are becoming too large and have lost their lower leaves the stems may be cut and mossed. In a close moist atmosphere they throw out roots quickly, and may he taken off with good balls, and placed at once in 6 and 7-inch pots, according to the variety. If placed in the shade for a fortnight well-furnished plants are again produced. Where narrow leaved kinds are appreciated for table decoration superba is one of the best. To have really good plants those raised from portions of the stem need to be grown strongly and the top re-rooted before plants can be had in their best condition. The same remark applies to Guilfoylei, and when well grown it is a very handsome table plant. To colour these plants highly they must be exposed to plenty of light, but this must not be overdone, or their foliage becomes too highly coloured, and is liable to go had at the points. Young stock raised from portions of stem this spring and well established in 3 and 4-inch pots should be placed into larger ones. It is a great mistake to allow plants that it is intended to grow on to become root-bound before they are repotted. Plants checked by this cause seldom do any good afterwards. These plants need careful watering for a time after potting until they are rooting freely in the new soil. The same treatment should be given to green varieties that can be grown in a lower temperature; but if well-developed plants are needed as soon as possible they may be grown in heat during their early stages, or until they are large enough for the purpose for which they are required. Dracænas do well in equal parts of fibry loam and leaf mould, with one-seventh of manure and a liberal quantity of coarse sand. Peat may be substituted for the leaf mould if plentiful.

Allamandas.—Plants growing in pots will have filled them with roots by this time. If they are to continue producing the largest size flowers a liberal top-dressing of manure must be given them, the roots will soon take full possession of it. Liquid manure may also he given in a weak state every time the plants need water. Do not allow them to become dry; the object should be to keep them growing, then they will continue to flower. Do not shade the plants, but grow them fully exposed to the sun. The reason these plants make vigorous growth, and often fail to flower profusely, is due to overshading.

Stephanotis floribunda.—Plants that have been trained upon trellises and have done flowering should he taken off and cleaned. If they are to flower well another year train the growths under the roof of a light house, where they will he fully exposed to the sun, and where air can be given freely until September. In this position the wood will become thoroughly ripened, and the plants will flower well another year. If kept closely trained upon trellises the whole season the wood has but a poor chance of being well ripened. Plants that are growing freely may have weak stimulants every time water is needed if the pots in which they are growing are full of roots. If mealy bug exists upon the plants syringe them occasionally with petroleum and water, 3 ozs. of oil to 4 gallons of water. Shade for a few days afterwards until the oil has heen evaporated.

Clerodendron fallax.—Plants raised from seed and well-established in small pots may be placed into 5 and 6-inch. Once they are fairly established in these pots and have been gradually hardened they will do in cold frames, provided they are kept close and closed early in the afternoon, so as to run up the temperature.

Asparagus plumosus.—Young plants raised from cuttings and well established in thumbs may be placed into 4-inch pots. In this size they will make bushy little plants. Those in 4-inch pots may be placed into 6-inch. This variety in small pots is very useful for decoration, especially for grouping with other plants in large conservatories.

Fittonias.—A good stock of these may be raised in small pots. They are useful during the winter. When once they are rooted they will grow freely under the shade of Crotons, Dracænas, and other plants where it is warm and moist.

Panicum variegatum.—Well furnished plants in 4 and 5-inch pots are always useful where furnishing is carried out on a large scale. A number of pots should be made up at once by inserting cuttings thickly into the sizes required. They root readily in any warm, moist, shady place.

THE BEE-KEEPER.

WORK IN THE APIARY.

ALL will now be life and bustle in the apiary. The weather, unfortunately, has not been altogether favourable for honey production, as only one really bright day has been chronicled since my last notes. There have been several days when the sun shone out brightly for an hour or two, then it became cloudy for the remainder of the day. There have been heavy thunder showers at intervals, which, although beneficial to the growing crops, prevent the bees from storing a large surplus.

It is interesting to observe bees on the first sound of distant thunder—how they hurry home; sometimes the air is quite darkened by masses of bees anxious to reach their hives before the storm comes. Many are lost when heavy showers come on without much warning, being beaten down and unable to rise again with their load. If the storm is of short duration, and the sun shines brightly afterwards, some will be able to dry themselves and rise on the wing again, and be little the worse for their drenching.

It is surprising the amount of work a strong colony of bees will do during a few hours of bright sunshine at this season, and I find that the stronger the colonies the harder the bees appear to work. They mix readily during the summer months without sprinkling with either flour or syrup. It will at once be seen how easy it is to make strong colonies when there are extra stocks from which to obtain frames of brood and bees. The present season shows the wisdom of working them on these lines, as with a few hours' sunshine a surplus will be stored which may otherwise have been wasted, as weak stocks would be unable to collect it in the time.

REMOVING SECTIONS.

It is advisable when working for comb honey in sections to examine them every two or three days. Although the weather may be dull for a few days after a spell of fine weather, work will be still going ahead in the hive. This is more apparent in a stock that is being worked for comb honey than for extracting purposes. When the honey is first collected from the flowers it is not all stored at once in the supers, but is placed in empty cells wherever found. During the night or dull days it is removed into the supers, and when properly ripened is in due course sealed over. Directly this has taken place the sections should be removed, or the bees by constantly passing over them will cause them to become

discoloured, and good sections will soon deteriorate in appearance, and will be classed as second rate, whereas through judicious management they would have been of superior quality.

If a second crate of sections has been placed under those that were partly sealed over, the latter will now be ready for removal from the hive. If a carbolic cloth is laid over the top of sections for a few minutes the bees will beat a retreat down into the brood nest. The sections may then be lifted out, and any stray bees remaining brushed off with a feather. Any sections not properly sealed over may be replaced in the crate again, and the empty spaces filled with the more forward sections from the lower crate, and the latter again filled with empty sections.

The two crates are then placed as before, and should the weather be favourable and honey plentiful they will probably be filled before the end of the season, as bees do not remain idle in their hives during dull weather, but, as is shown in the case of sections of comb honey, they remove the honey from the cells where it is not required, placing it in the section, and sealing it over; they have then space at liberty to store a surplus when a favourable change in the weather comes.

Extracting Honey.

Working for extracted honey requires similar methods in the early stages to that for comb honey; afterwards it is somewhat different. If the full frames are left in the hive until they are quite sealed over, unless an extra storey were placed on the hive as in the case of sections, much valuable time would be lost, and in all probability the bees would swarm, and that, too, just at a time when they are most required as workers in storing a surplus. It is not necessary for the combs to be fully sealed over when required for extracting purposes; all that is needed is that the honey be thoroughly ripe, and it is usually so when the frame is about half sealed over. A little practice will enable the bee-keeper to know when it is in a fit state for extracting. If the honey is unripe it will ferment and be useless, and if placed on the market even before it shows sign of fermentation it will give the bee-keeper an unenviable repute, and he will afterwards have a difficulty in finding a market for his produce.

If fermented honey is fed back to the bees it will often cause dysentery, so it is worse than useless, and bee-keepers have only themselves to blame if their honey is not of the first quality. Of course, one cannot always command honey in all seasons of the quality of that obtained from White Clover, as it varies considerably from the different varieties of flowers, but each should be obtained in perfect condition. Honey should always be extracted early in the morning, so that all has had the advantage of being at least a few hours in the high temperature of the hive.—An English Bee keeper.

TO CORRESPONDENTS

*** All correspondence relating to editorial matters should, until further notice, be directed to "The Editor," *8, Rose Hill Road, Wandsworth, London, S.W.* It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects, through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Fine Strawberries (*G. R. Allis*).—We are much obliged by the fine specimens of Leader and Monarch, and note that the first named ripened with you on the same date as Royal Sovereign—June 14th. We agree with you that Ganton Park is a good firm Strawberry, and travels well. Your expressions of approval of our extra number in honour of the Queen are appreciated. We have never published an issue that has met with such a welcome acceptance.

Roses for Town Gardens (*F. W.*).—On page 23 you will find an excellent article that will be of more service to you than the brief reply that could be given in this column.

Mustard and Cress (*A. E. B. and T. C.*).—The number containing the article you require has been out of print for some time. We propose, however, to republish the notes, as we feel sure they will be of assistance to others as well as you.

Cheap Work on Greenhouse Management (*M. D*).—We know of no work in which so much sound information is given for a shilling as in the *Primer* on "Greenhouse and Window Plants," by the late Mr. Charles Collins, and published by Messrs. Macmillan & Co. It can be obtained through a bookseller. Some plants are more fully treated in the *Garden Manual* (which also treats on fruit and vegetables), and can be obtained post free from the publisher, 171, Fleet Street, for 1s. 9d. It is one of the cheapest works on gardening extant, and has had a very large sale.

Strawberries Diseased (*J. W.*).—The berries and flower scapes are overrun by a mould, sometimes referred to as Botrytis vulgaris—a common mould on decayed fruit and other dead vegetable matter, but the web-like and felted mycelium is that of Botrytis cinerea, var. sclerotiophila, *Sacc.*, and the "fruits" it bears very sparingly the conidial condition of the Potato, Tomato, Carrot and Parsnip smother fungus, Sclerotinia sclerotiorum, *Mass.* The fungus produces small black bodies (sclerotia), and these pass the parasite over the winter, whence spring the conidial condition again, and infest the parts of plants already decayed or in a weakened epidermal condition from excess moisture acting on parts containing a large amount of watery or nitrogenous matter. We can advise nothing but cutting of the older leaves with the diseased trusses, burning them, and dressing the plants with basic slag phosphate, 7 lbs. per rod, after clearing away the weeds and rubbish. In the autumn apply kainit, 3½ lbs. per rod, and supply the dressing of manure then, if any be applied, or point the kainit in lightly. In the spring use bone superphosphate, 1½ lb. per rod, mixed with three-quarter lb. nitrate of soda, following when the plants are showing flower, with another application of nitrate of soda, crushed fine, and kept off the plants, three-quarter lb. per rod. Apply the litter for keeping the fruit clean then, so that it may get washed and be sweet. We have found this procedure very effectual against fungi, but the greatest care should be taken not to damage the fruit, and all mouldy ones should be cleared away and burned, for it really is in these that the fungi first find a nidus, and then spread to sound fruits, especially if the weather prove damp. We have also found great benefit from dusting the plants by means of bellows apparatus just before they come into flower, with a preparation of lime and sulphate of copper, such as anti-blight or fostite. The fungicide must not be applied later, or there is danger of its remaining on the berries to the prejudice of their use—that is, injury to the health of those eating them. To guard against this we have used a mixture of air-slaked chalk lime with one-tenth of flowers of sulphur against these forms of mould, applying by means of a bellows apparatus just before the plants come into flower, and again directly the first fruits were set.

Melon Fermenting (*A. A.*).—The very fine solid fruit has the flesh permeated by the mycelial hyphæ of a fungus, which may be readily seen with the suckers (haustoria) in the cells. It is Gloeosporium fructigenum, commonly called ripe rot or bitter rot, as the mischief does not appear generally till the fruit is nearly mature, imparting to it a bitter flavour. We have often found this disease in Melons, usually attacking the white-fleshed varieties, Colston Bassett being liable to it, as are also the highly flavoured green-flesh, such as Exquisite. But it attacks all varieties more or less at times, and almost invariably the hard-rinded, very solid-fleshed fruits. There are no "fruits" of the fungus, but, if you like to keep a Melon for the purpose, they will ultimately appear, and you may see small black pustules, which contain the fructifying bodies, these bursting through the apex and liberating the spores. The fungus germ-tube appears to enter the fruit at the blossom end, but when we have not been able to ascertain; but the injury does not become apparent until the fruit changes for ripening, when that process, instead of proceeding, seems to be retarded, the flesh decaying from the inside. Sometimes, however, the fruit decays externally from a central spot, and this spreads till the fruit is ruined. The most common cause of its prevalence in Melons is high concentration of the juices in the earlier stages of swelling. It is incited by a deficiency of water then, and later on supplying too plentiful supplies with too much atmospheric moisture or not enough air to allow of effective evaporation. By cause we mean cultural, for the fungus is really the sole cause, and it gets its chance as the fruit becomes somewhat soft at the blossom end, the rind being thinnest, hence the germ-tube finds entrance, and the mycelium spreads "fast and furious" in the tissues. There is really no remedy, for the mischief is done before it is discovered, and we know of nothing better than using lime with the soil, and feeding with bone superphosphate, nitrate of potash, and sulphate of magnesia, in mixture, six, three, and one part respectively, 2 to 4 ozs. per square yard. By attending to free growth in the early stages, with drier conditions later on—say, from netting, not parching at the roots, the fungus has a very poor chance. at least, such has been our experience. Burn affected fruits, clear out and thoroughly cleanse the structure, using a little sulphur in the whitewash for the walls, about a handful to a pailful. A light brushing over of the hot-water pipes with a cream of sulphur and skim milk is useful against the fungus, as the fumes kill the germ-tubes of the spores.

Model Gardens at Shows (*T. R.*)—The miniature models of which you speak are nearly obsolete, and some which are produced are miserable poor objects of what gardens should be. The size you mention is very small; but whatever the size, all the features, such as walks, beds, borders, or whatever may be represented, must be in due relative proportion, and the work must not be "roughly done;" on the contrary, it cannot be done too carefully and well.

Lilium candidum Leaves Diseased (*A. Mc*)—The bulbs are perfectly clean, indeed, very fine and sound. This is important, as indicating that the fungus on the leaves has not reached the roots, where its mycelium does great mischief, outgrowing them and causing their decay. We congratulate you on this, for the parasite is very malignant to most Liliums. Dusting with a preparation of sulphate of copper with lime, 10 per cent. of the first, is a good preventive against the disease spreading. We should simply remove the withered stems and burn them, as they may probably when decaying produce the conidial form, and the disease thus be carried over a wide area. Keep your plants healthy, using manure only in a thoroughly decomposed state, and then the Lilies will hold their own against their parasites, especially if the cultivator promptly adopts repressive measures, and affords sustenance enabling the plant to resist its enemies successfully. Use mineral matter, especially lime, as this quickly reduces organic matter into inorganic, the first being needful to the parasite, and the latter the stability of the host against it. We should not destroy the Lilies.

Black Stuff on Greenhouse Plants (*Mercy*). — The "black stuff" on the leaves is the filthy excreta of aphides or "green fly," taken possession of by a fungus, commonly called black mould, Fumago vagans, which does injury by its overgrowths, hindering the elaborating functions of the leaves, causing them to become pale in colour, and to fall prematurely. The cause of the mischief is the aphides, and these must be destroyed before there can be any relief from the "black stuff." Any of the advertised insecticides would rid you of the green "flies," or if you do not like a liquid application, which would be best, as it would destroy the fungus as well as the aphides, you may fumigate the house with tobacco paper on a calm evening, repeating occasionally until the pests are destroyed. As a home-made preparation procure tobacco juice, sold by horticultural sundriesmen, and add one part to five of water, in which 2 ozs. of softsoap has been dissolved, to every gallon, apply with a syringe in the evening, and wash the plants with clear water in the morning. Tobacco powder may also be dusted on the affected parts, and this, from the sulphur it contains, acts well on the fungus, whilst the tobacco kills the aphides. If applied in the afternoon the powder may be washed off in the evening, or if used at the latter time syringe in the morning. There is no preventive other than thorough cleanliness, keeping a watchful eye on the plants, and on the first appearance of the pests promptly take measures to prevent their spreading by destroying them.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*P. S.*).—Your specimens were not in a proper condition for naming, and moreover had no numbers attached, so that it would be impossible to discriminate. Send fresh ones properly numbered, and addressed and packed as suggested above, and we will endeavour to assist you. (*C. O. A.*).—1, Adiantum trapeziforme; 2, Asplenium bulbiferum; 3, Pteris cretica albo-lineata. (*S. R.*).—Chrysanthemum maximum. (*A. D.*).—Erigeron philadelphicus.

TRADE CATALOGUES RECEIVED.

G Bunyard & Co., Maidstone.—*Strawberries.*

H. J. Jones, Ryecroft Nursery, Lewisham.—*Florists' Flowers.*

The Tokio Nurseries Co., Komagone, Tokio, Japan. — *General Catalogue.*

COVENT GARDEN MARKET.—JULY 7TH.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	0 0	to 0 0	Lemons, case	11 0	to 14 0
Filberts and Cobs, 100 lbs.	0 0	0 0	St. Michael's Pines, each	3 0	8 0
Grapes, lb....	1 6	2 6	Strawberries, per lb.... ...	0 3	1 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, ½ sieve	0 0	0 0	Onions, bushel	3 6	4 0
Beet, Red, doz	1 0	0 0	Parsley, doz. bnchs	2 0	3 0
Carrots, bunch	0 3	0 4	Parsnips, doz	1 0	0 0
Cauliflowers, doz.	2 0	3 0	Potatoes, cwt.	2 0	4 0
Celery, bundle	1 0	0 0	Salsafy, bundle	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Seakale, basket....	1 6	1 9
Cucumbers...	0 4	0 8	Scorzonera, bundle	1 6	0 0
Endive, doz.	1 3	1 6	Shallots, lb.	0 3	0 0
Herbs, bunch	0 3	0 0	Spinach, pad	0 0	0 4
Leeks, bunch	0 2	0 0	Sprouts, ½ sieve	1 6	1 9
Lettuce, doz.	1 3	0 0	Tomatoes, lb.	0 4	0 0
Mushrooms, lb.	0 6	0 8	Turnips, bunch	0 3	0 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var. doz. ...	6 0	to 36 0	Hydrangeas, doz.	8 0	to 10 0
Aspidistra, doz....	18 0	36 0	Lilium Harrisi, doz.... ...	12 0	18 0
Aspidistra, specimen ...	5 0	10 6	Lobelias, doz.	2 6	4 0
Calceolarias, doz.	3 0	6 0	Lycopodiums, doz.	3 0	4 0
Coleus, doz.	2 6	4 0	Marguerite Daisy, doz. ...	6 0	9 0
Dracæna, var., doz.	12 0	30 0	Mignonette, doz.	4 0	6 0
Dracæna, viridis, doz. ...	9 0	18 0	Myrtles, doz.	6 0	9 0
Euonymus, var., dozen ...	6 0	18 0	Palms, in var., each... ...	1 0	15 0
Evergreens, var., doz. ...	4 0	18 0	,, specimens	21 0	63 0
Ferns, var., doz.	4 0	18 0	Pelargoniums, doz.	8 0	12 0
Ferns, small, 100	4 0	6 0	,, Scarlet, doz.	3 0	5 0
Ficus elastica, each	1 0	7 0	Rhodanthe, doz.	4 0	6 0
Foliage plants, var., each	1 0	5 0	Spiræa, doz.	6 0	9 0
Fuchsias, doz.	3 0	6 0			

Bedding plants in great variety.

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchid Blooms in variety.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms ...	2 0	to 4 0	Marguerites, 12 bnchs. ...	2 0	to 3 0
Asparagus Fern, bunch ...	2 0	3 6	Mignonette, doz. bnchs. ...	2 0	4 0
Bouvardias, bunch	0 4	0 6	Myosotis, doz. bunches ...	1 6	2 0
Carnations, 12 blooms ...	1 0	3 0	Orchids, var. doz. blooms.	1 0	9 0
Cornflower, doz. bnchs. ...	1 6	3 0	Pelargoniums, 12 bnchs. ...	4 0	6 0
Eucharis, doz.	3 0	4 0	Pinks, doz. bnchs.	2 0	6 0
Gardenias, doz.	2 0	4 0	Pyrethrum, doz. bnchs	1 6	3 0
Geranium, scarlet, doz. bnchs.	3 0	6 0	Roses (indoor), doz.... ...	0 6	1 0
Gladioli, doz. bnchs. ...	4 0	8 0	,, Tea, white, doz. ...	1 0	2 0
Iris (var.), doz. bnchs. ...	4 0	0 0	,, Yellow, doz. (Niels)	1 6	4 0
Lilium longiflorum, 12 blooms	2 0	4 0	,, Red, doz. blooms ...	1 0	3 0
Lily of the Valley, 12 sprays	1 0	2 0	,, Safrano (English) doz.	1 0	2 0
Maidenhair Fern, doz. bnchs.	4 0	8 0	,, Pink, doz....	3 0	5 0
			,, outdoor, doz. bnchs.	2 0	6 0
			Smilax, bunch	2 0	4 0
			Tuberoses, 12 blooms ...	1 0	1 6

AN ENGLISH CHICAGO.

AMONG the middle and lower classes of England cookery has not reached its zenith. It is by no means a fine art. We like viands that cook themselves, as it were; we scorn foreign kickshaws, and prefer plain boiled and roast. For emergencies we are unprepared. Certainly there is the tough steak and the leathery chop, but even these fail in outlying districts, and we fall back upon the universal ham and eggs or bacon. Now these are very good, pleasant victuals if the eggs are sound and the bacon home-fed. The egg question can be left for another time, it is of the "genus" pig we would speak.

There is, we think, more variation in the quality of ham and bacon than anyone could imagine. The raw material must be right in the first instance, the breeder wants a profit, and the customer wants something toothsome and eatable. To our mind there is a great deal of bacon on the market that in the shape of an old sow has weathered many a blast. Anyone who manipulates a pig when turned into pork can soon tell the difference between a tender middle-aged pig and the venerable matron. Cut up the fat for rendering into lard, prepare the liver for the fry, pick out the tit-bits for pies, and the knife soon reveals the age. Now we hold that such ham and bacon, cook them as you may, are always more or less stringy, and do not melt in the mouth as they should do.

Then, again, there are various breeds, and each one has his special fancy. We hold that a middle-sized pig is always to be preferred to those monsters of the sty so often seen. In pigs of that description there is so much waste—the thick end of the flitch is almost uneatable. There is not a gleam of lean meat, and pounds of good meat are a perfect nightmare to the careful housekeeper. There is a certain amount of this fat that can be used to form an armour for roast poultry or game, but this is only

a small quantity of the whole. We find it the best course to take a straight piece off before salting, and we "render" it with the rest of the inside fat. Then, again, in the hams. Who but knows that rounded end that makes so good a beginning, and must at the last be supplemented with lean beef or potted meat to make it go down at all?

There is a great deal of meat spoiled every season by (1) undercuring, (2) overcuring. We do not care to kill our pigs too early in the season; in close muggy weather thick sides and big hams have no chance of curing properly. Some people have such an exaggerated idea of the value of saltpetre. True, it imparts a beautiful red tinge, but it also is very hardening in its effect on the lean of the meat. A pennyworth is quite sufficient for a 30-stone pig. The salting process is often hurried, the meat not turned and rubbed sufficiently often, and the curing room close and damp.

No good bacon can be made unless there is ample time allowed for gradual and steady drying. How much "reasty" bacon is trimmed off rashers and boiling pieces every year simply because the drying room has been too hot and the process too long. Much bacon is lost every year through the attacks of the bacon weevil Once that wretched insect gets into a chamber it is almost impossible to eradicate it.

We recommend in cases where there is the slightest suspicion of such an enemy that the bacon and ham, immediately it is dried should be coated with limewash, sewn up closely (not tied) in cotton stuff, and limewashed again.

Some people keep their bacon in chests full of lime. It is certainly safe from the attacks of mice and insect life, but a good deal of "outside" is made. Some, again, prefer malt culms; but these, to our thinking, impart an unpleasant flavour.

Our English market has of late years been flooded with millions of tons of foreign produce, which, being sold at a low price, has met a ready market. It certainly is sound meat, but so tasteless and insipid in character; this is possibly from want of proper drying. It also has another great fault—it wastes so in the cooking. An effort is now being started in one of the large pig-producing parts of Yorkshire to turn out ham and bacon wholesale, in fact on the American factory system.

Who but has read of the fame of York hams? Well, there is a little town about fifteen miles from York, on the banks of the Ouse, a great Potato and corn growing district, called Selby. The lord regnant in those parts is the Earl of Londesborough, a nobleman with vast estates, a nobleman always the first to forward any scheme for the betterment of his numerous tenantry and his hundreds of employés. The pigs are there of a fine type; the food is there in unlimited quantities, the energy and the skill are there, and the work only needed a little start and a little encouragement. Already Selby and the immediate neighbourhood annually breed 27,000 pigs, the greater portion of which are sent South, and there must be something in the quality, or the demand would not be so great.

If this be the result of individual effort we are not oversanguine when we prophesy far greater achievements for the newly formed bacon factory. Denmark has had the pull of us some time in regard to factory or co-operative butter. The farmers were not slow to find out that uniformity could not be attained when each farmer made up his few lbs. of butter at home. They grasped the situation, and took the world by storm with their tons of prime butter, all of which was absolutely of one quality and colour. Just glance for a moment at a few facts respecting Danish bacon factories and the impetus they have given Danish trade.

Up to 1887 the shipments of bacon from that country never exceeded 15,000 tons. In that year the exports were doubled, and the following year nearly trebled. Bacon factories are at the bottom of this wonderful advance. Denmark has not the population of Yorkshire, and yet she has no less than sixty factories, one-third of which are co-operative. Roughly estimated the value of the bacon industry in Denmark cannot fall far short of 2½ millions sterling; that and the butter trade fairly "make" Denmark.

From our personal knowledge of Selby and the adjacent district, from our knowledge of the men who are the promoters of the scheme, we have little doubt but that the bacon factory of Selby will, when fairly in working order, come to be numbered amongst the great commercial enterprises of Yorkshire, a credit to its originators and a profit to its proprietors.

WORK ON THE HOME FARM.

Thunderstorms have quickly broken up the short spell of fine weather inaugurated by the Queen's Jubilee, and farmers with a large breadth of grass in swathe are anxiously studying the weather forecasts. With the commencement of July we invariably have more or less of electrical disturbance, and it behoves every haymaker now to make hay while the sun shines, for storms must be expected.

With thundery weather we have a considerable increase of temperature—a very welcome change, for both Swedes and Turnips were coming very slowly to the hoe; and as rapid growth in the early stages is very essential to success in Turnip growing, humid warmth was just the thing we were longing for. Wheats are in full flower, in some cases getting past that stage. We are hoping that the straw, which at present is rather short, may lengthen out considerably. Barley, on the other hand, is quite high enough, and may become badly laid by heavy rains.

We are about drilling a piece of Rape for autumn feed; we are in doubt which is the better system, drilling in rows or broadcasting. In the present case the land is not quite clean, and can hardly be made so without completely working it as a summer fallow, so we are adopting the drilling plan, as with rows 20 inches apart we can keep the horse hoe at work between the rows until the plants begin to cover in. Then, again, less seed is required, for 3 lbs. per acre is enough in rows, whereas broadcast 7 or 8 lbs. would be none too little.

It might not appear likely that much benefit would accrue from striking out or thinning the plants of Rape in the rows, but we have proved the value of such thinning—the plants grow more rapidly, with a much sourer and stronger leaf, whilst if a portion of the crop be thinned out and a portion left thick, the sheep when folded will eat off the thinned portion level with the ground, leaving no stalk, whilst the unthinned portion will be a mass of hard fibry stalks, that no animal will consume.

With haymaking to complete, the great bulk of the root crops to hoe and clean, and the stock of winter coals to get in, there will be no lack of work before harvest, which may be here sooner than we expect if we are favoured with any great heat during the next week or two.

THE "LIVE STOCK JOURNAL."—The summer number of this excellent periodical contains two coloured plates, and two plates from wood engravings. There are also a large number of engravings throughout the text, every page in fact being illustrated with portraits of live stock. The articles are numerous and well written. The progress of stock-breeding during the Queen's reign receives due attention.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

DATE. 1897. June and July.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of soil at 1 foot.	IN THE DAY. Shade Temperature. Max.	IN THE DAY. Shade Temperature. Min.	IN THE DAY. Radiation Temperature. In Sun.	IN THE DAY. Radiation Temperature. On Grass.	Rain.
	Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Inchs
Sunday 27	29·924	62·8	59·2	N.E.	62·4	72·2	56·7	107·8	52·7	0·232
Monday 28	29·949	68·3	64·2	N.	62·1	78·2	59·4	118·4	55·2	0·052
Tuesday 29	29·960	63·3	61·4	S.W.	63·6	77·1	62·3	121·0	59·1	—
Wednesday 30	30·026	69·9	60·6	N.W.	63·4	77·1	54·4	114·6	48·2	—
Thursday .. 1	30·029	66·3	61·9	N.E.	63·4	78·1	54·2	115·8	48·7	—
Friday 2	30·151	59·4	57·1	N.	64·9	65·2	57·9	70·8	54·4	—
Saturday .. 3	30·023	66·6	60·3	W.	63·1	72 6	58·0	114·0	53 9	—
	30·009	65·2	60·7		63·3	74·4	57 6	109·1	53·2	0·284

REMARKS.

27th.—Overcast early; heavy rain from 10.15 A.M. to 11.30 A.M., and some sunshine in afternoon.
28th.—Overcast till 10 A.M.; frequently sunny after; overcast evening; and rain from 8 30 to 10 P.M., followed by lightning
29th.—Dull and damp early; cloudy morning; sunny afternoon.
30th.—Bright sun all morning; cloud from 0.30 P.M.
1st.—Bright sunshine almost throughout.
2nd.—Overcast all day.
3rd.—Alternate cloud and sunshine all day.
Another fine seasonable week; nights very warm.—G. J. SYMONS.

Journal of Horticulture.

THURSDAY, JULY 15, 1897.

THE JOURNAL OF HORTICULTURE *can be obtained from the Office*, 171, *Fleet Street, London, post free for a Quarter*, 3*s.* 9*d. Editorial communications must be addressed to* 8, *Rose Hill Road, Wandsworth.*

STRAWBERRY CULTURE.

THERE can be no doubt that during the last ten years sound knowledge on Strawberry culture has been very widely circulated. This is clearly shown by the good supplies of fine fruit to be met with in the markets of our great towns. To writers in the horticultural press, as well as to commercial competition, this improving state of affairs is, I think, due. The former urged the necessity of supplying a long felt want, and showed the way to do it. This induced market growers to take up the matter with spirit, then competition amongst themselves speedily brought about improved results. There is, however, still room for further advance, as towns of moderate size are by no means overstocked with good Strawberries in a perfectly fresh condition, and many amateurs who like to produce their own fruit have not yet succeeded in doing so to their satisfaction. I trust, therefore, that the notes I am about to pen on this important subject will be productive of good in many ways.

Fortunately this delicious fruit is by no means fastidious in regard to soil, as stiff, light, peaty, or even naturally poor soil, will, with suitable culture, produce good crops, but the ideal soil for the purpose is the moderately stiff yellow or brown loam, which gardeners and farmers rightly set high value upon. No one should, however, be discouraged if they have to deal with a light and poor soil, as deep digging and mulching with manure will enable the poorest soils to produce good crops of Strawberries. But in such cases fresh plantations should be made each year, whereas when planted in good loamy soils the plants may be profitably allowed to occupy the same ground for three years.

In preparing light soils for the reception of Strawberry plants, trenching to a depth of 2 feet should be resorted to. As the work proceeds, plenty of half-decayed manure must be incorporated with the soil, more especially in the lower strata. The subsoil should not be brought to the surface except in very small quantities, as

the surface of land which has been for years exposed to atmospheric influences, as well as to continual digging and stirring, is comparatively rich and sweet, and therefore more capable of inducing active root action in plants and finer crops of fruit than is the soil beneath it, for however deep and naturally fertile soil may be, the penetration of air is necessary to bring out its full capabilities. It is, therefore, not difficult to see the immense advantage of periodical trenching, which sweetens and enriches soils to a great depth, and gives to crops a double sized larder to draw their supplies of food from. One reason why very light soils are less fertile than heavy ones is that they do not possess the power to retain, for any length of time, the food stored in them, as water goes through them too rapidly, carrying with it the elements of fertility far away from the reach of roots. A surface dressing of clay applied to land of this description is of great advantage by gradually making it more "holding" in texture. When this is applied in winter, it should be spread roughly upon the surface, and allowed to lie for some weeks till the action of frost has reduced it to small particles. If applied during the summer, it should be dried and crushed. Manure from cowsheds is preferable to that obtained from other sources for light soils, as it is not only a powerful fertiliser, but is close in texture, and therefore tends to make light soils more retentive of moisture.

In dealing with very heavy land, we have in many respects to reverse our plan of action, so as to render the soil more open and workable, and prevent it from becoming hard and brick-like under the influence of sun, or soft and sodden during and long after heavy rains. The first step toward improving these very heavy soils is to drain them; then trenching must follow, working in freely during the operation burnt refuse, old mortar rubble, coal ashes, or any materials of a like description, which will serve to keep the soil open and sweet. The most suitable manure to use in such cases is fresh strawy material, just as it comes from the stable. Land well prepared in this way will, especially in dry seasons, bear grand crops of Strawberries, if othor details of culture are well carried out.

An old plan of growing Strawberries on heavy land was to plant them on raised beds. Drainage was in this way secured; but in dry seasons the soil caked and cracked badly, while watering could not be satisfactorily done. It proved to be an expensive method of making beds, and all operations were performed at a disadvantage. The principle to work on in the improvement of heavy soils is to make them open and friable; the raised bed system does not do this, hence its failure, and therefore almost total abandonment by our foremost cultivators.

Raising Plants.

It is important that plants be established early, so as to be ready for planting in the prepared ground by the first or second week in August. Those who raise large numbers of plants yearly make a practice of having a row or plot of young plants in a warm position, which are grown principally for supplying early runners. Those who watch Strawberry plants closely will observe that young plantlets usually form just before the fruit begins to change. To layer these in the usual way would greatly interfere with the gathering of the fruits, and yet it is from such early runners that the best plants are obtained. It is, therefore, obviously a good plan to grow plants entirely for supplying early runners. Where, however, this is not done, layering should commence directly fruit picking is completed. Only the best and strongest runners ought to be layered, the others being cut away. Some cultivators peg the young plantlets into small pots filled with soil, others use turves cut into pieces about 3 inches square, and many successful growers simply loosen the soil round the old plants and peg the young ones into the loosened surface. Either plan answers well provided regular waterings are given during the absence of rain until the plants are well established. As the work of layering proceeds a sharp look-out must be kept for barren plants. These must on no account be propagated from, although they usually produce extra good plantlets, and seem to invite attention on account of their exuberant growth. Those who have only a limited number of plants to raise their stock from, and these perhaps not being in good condition, should purchase young plants from a reliable Strawberry grower or nurseryman. Such can be obtained at a wonderfully cheap rate, and an occasional change of stock is a distinct advantage.—Pomona.

(To be continued.)

HONOURS IN HORTICULTURE.

Under this heading last week we made reference to the "Victoria Medal of Honour," which has been founded by the Royal Horticultural Society to commemorate the Queen's long reign, and we published a list of (as we supposed) the first recipients of the honour. We much regret that the list was not accurate. Some names were included which ought not to have appeared in accordance with the final decision of the Council, while others were left out which ought to have been there.

In response to our application a list was obligingly supplied to us shortly before going to press, but in his haste to supply it to us in time the Secretary made use of an old printed list of many names, some of which were erased, and others were added in writing, and unfortunately the explanation as to which of the erasures and additions were to stand and which to be ignored was misunderstood. It was simply a list sent most kindly, but in a hurry, and equally printed in a hurry, time not permitting a proof being submitted to the Secretary, the result admirably illustrating the truth of the maxim—"the more haste the less speed." Our list contained the names of several members of the Council, who, in our opinion, were fully entitled to the distinction, and who might well have received the honour but for the self-sacrifice they have preferred to make. The sentiment is admirable, and though we are pleased to see the additions, we cannot but regret that gentlemen who have rendered signal services to horticulture in various ways, and over many years, should have deemed themselves ineligible for the distinction simply because they happen to have been elected to a position of honour—a seat at the Council table of the Royal Horticultural Society.

In one sense, therefore, we are glad that the mistake occurred, as it has given us an opportunity of expressing the estimation in which we, in common with all the gardening world, hold those gentlemen whose names do not now appear in the final list

But since we have said thus much we feel entitled to say a little more—namely, that as some of our remarks may, at least in a negative way, be regarded as a reflection on those recipients of the honour whose names should have appeared in our list last week, but did not, we have the pleasure of stating that with two exceptions the names of all the gentlemen omitted were included in a list that we drew up for the purpose of comparison with the final selection.

We are requested by the Secretary to say that the erroneous list accidentally published last week was one of numerous lists submitted to the Council some time ago, but was never at any time adopted or approved by them. It was only carefully considered, as were all the others submitted.

As we accidentally published an incorrect list of what one gentleman calls the "Academy," it is incumbent that we publish a correct one as follows:—

The following are the names of the first sixty recipients of the Victoria Medal:—

Baker, John Gilbert, F.R.S., F.L.S., Royal Herbarium, Kew.
Balfour, Prof. Isaac Bayley, M.A., Sc.D., M.D., C.M., F.R.S., F.L.S., &c., Royal Botanic Gardens, Edinburgh.
Barr, Peter, King Street, Covent Garden.
Barron, Archibald F., Sutton Court Road, Chiswick.
Beale, Edward John, F.L.S., Stoneydeep House, Teddington Grove.
Boxall, W., 186, Brook Road, Upper Clapton, N.E.
Bunyard, George, Royal Nurseries, Maidstone.
Bull, William, F.L.S., King's Road, Chelsea.
Burbidge, Frederick William, M.A., F.L.S., Trinity College Bot. Gardens, Dublin.
Crump, William, Madresfield Court Gardens, Malvern.
Dean, Richard, Ranelagh Road, Ealing.
Dickson, George, Chester.
D'Ombrain, Rev. H. H., Westwell Vicarage, Ashford, Kent.
Dunn, Malcolm, Palace Gardens, Dalkeith.
Druery, Charles T., F.L.S., 11, Shaw Road, Acton, W.
Ellacombe, Rev. Canon, Bitton Vicarage, Bristol.
Elwes, H. J., F.L.S., Colesborne, Andoversford, Glos.
Foster, Prof. Michael, M.A., M.D., LL.D., F.R.S.
Fraser, John, South Woodford.

Gordon, George, Endsleigh, Priory Park, Kew.
Heal, John, 10, Musgrove Crescent, Fulham, S.W.
Henslow, Rev. George, M.A., F.L.S., &c., Drayton House, Ealing.
Herbst, H., Stanmore, Kew Road, Richmond.
Hole, The Very Rev. S. Reynolds, Dean of Rochester.
Hooker, Sir Joseph Dalton, M.D., K.C.S.I., G.C.S.I., F.R.S., Sunningdale, Berks.
Horner, Rev. F. D., Kirkby-in-Lonsdale.
Hudson, James, Gunnersbury House Gardens, Acton, W.
Jekyll, Miss Gertrude, Munstead Wood, Godalming.
Kay, Peter, Claigmar, Finchley, N.
Laing, John, Forest Hill, S.E.
Maries, Charles, F.L.S., The Residency, Gwalior, Morar, India.
McIndoe, James, Hutton Hall Gardens, Guisborough.
Milner, Henry Ernest, F.L.S., Dulwich Wood, Norwood, S.E.
Molyneux, Edwin, Swanmore Park Gardens, Bishop's Waltham.
Monro, George, Covent Garden.
Moore, Fred. W., A.L.S., Royal Botanic Gardens, Glasnevin.
Morris, Dr. Daniel, M.A., C.M.G., D.Sc., F.L.S., Royal Gardens, Kew.
Nicholson, George, A.L.S., Royal Gardens, Kew.
O'Brien, James, Harrow-on-the-Hill.
Paul, George, The Old Nurseries, Cheshunt.
Paul, William, F.L.S., Waltham Cross.
Rivers, T. Francis, Sawbridgeworth.
Rothschild, Hon. Walter, 148, Piccadilly, W.
Sander, Frederick, St Albans.
Schröder, Baron, The Dell, Staines.
Seden, John, Middle Green, Langley.
Sherwood, N. N., Dunedin, Streatham Hill, S.W.
Smith, James, Mentmore Gardens, Leighton Buzzard.
Smith, Martin R., Hayes Common, Beckenham.
Speed, W., Penrhyn Castle Gardens.
Sutton, Arthur W., F.L.S., Reading.
Thomas, Owen, Royal Gardens, Windsor.
Thomson, David, late of Drumlanrig, N.B.
Thompson, William, Ipswich.
Turner, H., Slough.
Willmott, Miss Ellen, Warley Place, Great Warley, Essex.
Wilson, George F., F.R.S., F.L.S., &c., Heatherbank, Weybridge Heath.
Wolley-Dod, Rev. C., Edge Hall, Malpas, Cheshire.
Wright, John, Rose Hill Road, Wandsworth.
Wythes, George, Syon House Gardens, Brentford.

JUBILEE REFLECTIONS.

Founders of Our Faith.

(*Concluded from page* 2.)

There is no more honoured name in the annals of scientific horticulture than that of Sir Joseph Banks, who, like the illustrious Swede, Linnæus, early in life became the devotee of our imperious mistress—Nature. Like, and unlike, for whilst the latter in early life wrestled with poverty, young Banks was born with the proverbial silver spoon with which to sip the sweets presented by affluent circumstances. In 1743 the subject of our brief sketch first saw the light, and the death of his father whilst he, the eldest son, was yet a youth brought changes which resulted in the family estate of Revesby in Lincolnshire being given up, the widowed mother with her family removing to Chelsea. No happier choice of a residence could have been made to foster the love of that particular study so early displayed by this eminent man; Chelsea and the neighbourhood, it need scarcely be remarked, affording great facilities to the young student, being then famous for its scientific gardens, including that of Sir Hans Sloane.

Having here introduced the name of this distinguished man—Sir Hans Sloane—who died in 1752, at the time when young Banks had only attained his ninth year, we may, by reason of the undoubted influence his life and labours exercised over him, and of which his—Sir Joseph's—life was in many ways a replica, digress with a few details. In the highest rank as a physician and naturalist, Sir Hans, as a boy, showed a remarkable propensity for the study of those subjects which brought to him honour and length of days. Born in 1660, he was created a Baronet by George I. in 1716, and in 1727 succeeded Sir Isaac Newton as President of the Royal Society, resigning this post in his eightieth year. From his marvellous collections, which were at his death accepted by Parliament for the nation conditionally upon his family receiving the sum of £20,000, which had, indeed, cost him some £50,000 in forming, originates the British Museum. The whole career of Sir Hans Sloane marks him a man of high moral principle, and his rigid adherence to a temperate life which overcame a constitutional delicacy evidenced in his youth also preserved a noble intellect clear and bright to the end, which came in his ninety-second year.

How peculiarly fascinating the study of Nature must have been to the young gentleman, to whom we now return, it is easier to conceive by observing that neither fashion nor fortune, he being possessed of ample means, which, eventually, were chiefly devoted to the ruling passion of his life, could lure him from his early love. On coming of age a voyage was made to the then little known Newfoundland and Labrador coasts, and a valuable collection of plants, insects, and other natural productions was made and brought home, this being the first practical work of our young enthusiast, who was soon to engage in more extended research.

There is, I fear, some little danger of the rising generation taking rather a commonplace view of the travels of our great pioneer naturalists, viewing them in the strong light the latter days of our good Queen's reign now shed upon distant scenes. It would not, I think, be wasted time if our young gardeners would follow intently the tracks of these travellers; those, for instance, of the great circumnavigator, Captain Cook, upon his wonderful journeys. I, at least, found "Cook's Voyages" intensely interesting at that period of my life. Such would, moreover, convey a clearer idea of that dauntless character, which neither dangers nor difficulties, now all but disappeared, could dissipate. We may now couple the name of our young naturalist with that of this famed explorer, who was sent out to the Pacific to observe the transit of Venus, and make a voyage of general discovery. Mr. Banks not only accompanied him on this, a three-years voyage, but we find him sparing neither pains nor expense to make the self-imposed mission a complete success. To this end he engaged skilled draughtsmen to aid his own efforts, and secured the services of Dr. Solander, a pupil of Linnæus, to the great advantage of this phase of the enterprise.

At this period may be noted a friendly rivalry among the nations of Europe to further the cause of science, similar expeditions being despatched contemporaneously by the Empress Catherine of Russia and King Louis of France. Banks brought home a splendid collection of specimens, including a number from Otaheite, where, eventually, the intrepid seaman, Cook, laid down his life in the great cause, also from New Zealand and Australia. After this voyage, in 1772, Mr. Banks sailed at his own expense to Iceland, accompanied by Solander, Dr. Lind, and Von Troil, where two months were spent among the volcanoes. In 1777 Mr. Banks was elected President of the Royal Society, holding that position for over forty years. In 1781 a Baronetcy was conferred upon him, and further honours rewarded his assiduous labours by his being invested with the Order of the Bath in 1795, two years after being sworn in as a member of His Majesty's Privy Council.

Sir Joseph took a leading part in the management of the Royal Gardens at Kew, and promoted the interests of the Horticultural Society, founded in 1804. In his private life our great countryman is conspicuous by a highmindedness which sunk all petty considerations and jealousies, whose stings his eminent services did not exempt him from being the butt of during his active labours to advance the object of his life, independent of party feeling at home or national contention abroad. He finally gained the unqualified admiration and recognition of his learned contemporaries of all countries and creeds.

Indelibly engraved upon the roll of honour connected with our subject are various illustrious names—men who have here and there taken up the tangled web to patiently unravel it for our benefit. Only a few can be included here. Amongst these we may note Auguste Pyramus de Candolle, who, born at Geneva in 1788, was early inspired with the love of botanical research. The later part of his life was devoted to an attempt to simplify the classification of plants, which work, continued by his son, brings us down to modern times. Prior to this Antoine Laurent de Jussieu, born in 1748, was engaged upon similar work, and the combined efforts of these savants have given great and lasting results. So many of these names emphasise what has been previously mentioned—viz., that intimate relationship of the study of medicine with that of plants. Another example of this is furnished by the learned Sprengel, a leading physician and botanist of the last and present century. Previous to his death in 1833, upwards of seventy learned societies and academies had sent him their honorary diplomas, and several ruling monarchs conferred upon him orders of distinction. This not only shows the importance with which the work we must be more or less interested in was regarded, but speaks volumes for those who delighted to honour men who from the very nature of their work were probably the last to seek it.

There are no young thinkers and readers of to-day who can fail to be acquainted in a measure with the lives and labours of men of our own times, but they—we all do, perhaps—lightly estimate the riches of literature spread around us in such profusion. We take such things as a matter of course, although they are, we may admit, a consequence of progress under our good Queen. In our Jubilee reflections (horticultural reflections) it must be a matter of pride and of pleasure to think and to know that, as directly concerning us, all is not fleeting. Flower shows are fleeting, we do not disparage their educational value in saying so. Vast indeed is

the difference between our specimens and those illustrating the pages of old Gerarde's "Herbal," published 300 years ago, but greater still is the difference in that quaint volume and the modern work, which under the modest title of "The Flower Grower's Guide," comes so opportunely to leave its impress as a lasting record of what has been done—to show all practical gardeners what they can do—in this the sixtieth year of the Queen-Empress's reign. —INVICTA.

COMMEMORATIVE TREE PLANTING IN 1897.

THIS subject, in this memorable year, has worthily engaged the attention of the many more or less interested in it, but whether the work already carried out is sufficiently pronounced to warrant the assumption that the far-reaching object may reasonably be expected to obtain is a matter for conjecture. There is, in fact, a combination of circumstances militating directly or indirectly against it, tending to the conclusion, which many upon reflection may arrive at, that the outlook is not one of unqualified satisfaction; whereas, *per contra*, there are no reasons why it should not be made one of the most pleasing features of the present, that is so far as the contemplation of future effect is concerned. Upon this year's work is, of course, hinged the door of prospective possibilities. That this particular planting should—must—take place in this particular year goes without saying, and that we have yet before us the most suitable time in late autumnal or early winter planting to accomplish the most important part of it may be admitted.

Much has probably been done even with our noble deciduous trees by special preparation of them in some instances to undergo the ordeal of summer planting, as well as spring planting in the natural way; yet in the latter case, from various reasons, it may have, as in some cases I know it has, been too long deferred to expect the best results, and the former has been far too desultory to fully attain the end in view when viewing it under its most comprehensive aspect. Therefore much that has been done was probably done at an unsuitable time, and a great deal of that with, possibly, more or less unsuitable subjects—trees. If we could reasonably hope that the coming planting season would in this direction be met with the same zeal practically demonstrated in other ways, any present comment upon the matter would be needless, but there is more than a slight danger of a too rapid evaporation, not of our loyalty, but of that jubilance which finds with it a ready outlet of ways and means to the end—commemoration.

In the normal course of things thousands of suitable trees will doubtless this year be planted in permanent positions, many of which will eventually become interesting objects so far as tree life is concerned; but that does not affect the question. Keeping our special object in view, it is obvious that some kind of identification, which must be both simple and reliable for the benefit of generations to come, is both desirable and necessary, and those planters who yet intend to take advantage of the best opportunities, which are yet ahead, will, by bearing this in mind, be governed more by reason than led by inclination to plant new or untried varieties, which planting must be more or less experimental, and for which properly our subject has no margin. Considering first the methods which best suggest themselves to the end of permanent identification, we need only consider that phase of it which directly concerns the general public, taking it for granted that in private places, demesnes, or what not, such matters will be well considered.

Hypothetically considering that every parish in the kingdom which has not done anything in this direction, or as much as might have been done, intends doing the right thing at the right time—the coming planting season, and further supposing that the good, yet inexpensive, work will be judiciously done, the question of future identification should present but little or no difficulty. One parish may, possibly, devote a suitably enclosed space for its grove of a dozen "Victoria" Oaks, and grave on stone the why and wherefore of its being; whilst to others various methods may commend themselves which do not admit of labelling *in perpetuo*. In the latter cases, which would, probably, embrace the majority, correct data inscribed upon the parish records might be expected, so far as one can see, to fulfil all requirements. In this case particulars might include the correct measurement of distances from the nearest permanent landmarks available for the purpose.

Relative to suitable varieties for memorial planting amongst the large number now available, or supposed to be, for the purpose, a little serious consideration of the matter will show that all desire for novelty should give place to the trusty and tried over long periods, as proved in the annals of arboricultural history. Moreover, that local conditions of soil, situation, and general suitability will be duly recognised. Probably here the simplest plan would prove the safest, and those giants of the tribe who stand as silent witnesses of long endurance under the vicissitudes of our climate are the best kinds for the purpose. With these it is but reasonable to expect that history will repeat itself.

Turning up the pages of an historical work of this kind—viz., "Sylva Britannica," a handsome old folio volume of plates drawn from nature of trees remarkable for their antiquity, magnitude, or beauty, also etched and published by Jacob George Strutt in 1826, data are furnished which should be both of interest and service to us now. Of the forty plates and descriptive letterpress relative to England (eight plates of remarkable Scottish trees conclude this work), we find the author visiting at least fifteen different counties for his purpose, without a doubt drawn to each particular spot by the name and fame of some particular tree. Predilection may in some measure account, perhaps, for Strutt's honourable mention of so many famous Oaks, but judging by his enthusiastic description of other species illustrated, that alone cannot be answerable for the pre-eminence given to them, exactly half of the forty fine plates being those of famous Oaks. The remaining twenty consist of six Elms, three Chestnuts, two Limes, two Yews, and one each of Maple, Sycamore, Poplar, Willow, Ash, Beech, and Cedar.

Where we require on the larger scale grandeur and endurance we may from the data adduced, coupled with personal knowledge of the kingly tree and various associations linking it with English history, acknowledge its supremacy for the object in question. Dwarfed as is the English Yew by comparison with the Oak, it holds, we may allow, the same prominent position on the smaller scale, and its adaptability to various positions from which the former might be precluded no less commends it to our notice. For longevity the Yew, as far as I am aware, takes the highest rank. Details of other suitable species need not detain, for in this case variety will, doubtless, charm future generations if a judicious selection guides our efforts in this phase of commemoration. These lines are penned by a lover of our noble indigenous trees in the hope that ere this year of Jubilee has fled that in every village and in every hamlet over the length and breadth of Old England something will be done in this direction, and well done, and that means will also be taken to attest the fact for the benefit of posterity. May I also suggest that brief particulars might be forwarded to our Editor, that the *Journal of Horticulture* could also tell the tale to tree lovers yet to come?—SYLVA.

MARGUERITE CARNATIONS.

SINCE the introduction of Marguerite Carnations it is possible to sow seed, raise good plants, and obtain useful sweet-scented flowers for cutting in autumn. A period of seven months' cultivation suffices to obtain the first results. It is true the plants are not so floriferous the first year as the second, but this is simply owing to their being less in size. However, the blooms, if good, whether produced in quantity or not, prove very welcome, either as buttonhole flowers or for adding to a miscellaneous collection. An additional advantage gained in their flowering the first season is that of ascertaining the quality of the blooms. Few if any strains of seed furnish plants having all double and no single-flowered plants. The latter, therefore, being discovered when the seedlings bloom may promptly be discarded and the best retained.

A packet of seeds of a good strain, either of mixed colours or all white, may be sown at the end of February or early in March. White varieties are usually kept separate, so if white Marguerites are in demand include a special sowing, which may be cultivated separately.

Employ well drained pots or pans and a light open compost. The seed will germinate in a temperature of 55°. Keep the seedlings from their first appearance near the light so as to avoid their becoming drawn, watering lightly but sufficiently. As soon as the young seedlings attain strength and soon would be crowded it will be best to separate them, pricking them out 2 inches apart in boxes drained and filled with a similar compost. They may remain there for some time, say until the end of May, when they can be finally planted. Light is very essential to their steady progress, and a cooler position with a moderate amount of air given, but freely on favourable occasions, favours development while in the boxes. The waterings must be applied lightly during the first few weeks, so that the plants can easily form rootlets, which they will do more freely in a healthfully moist medium rather than a wet one. No place is more suitable than a cold frame. The lights may be removed and the plants fully exposed prior to planting.

Though the Carnation prefers a fairly moist and rich soil, yet it will succeed in a somewhat dry position, such as a sloping bank, when once the roots have taken deep hold. The plants winter well in a position of that kind, not being subject to damp. A flat

and open position, well drained in winter, must be considered the best position, because there is adequate provision for their demands with regard to moisture and food in the soil at a period when both are required to well support the advancing flower stems.

Encourage the first blooms to be produced as early as possible so that the quality may be noted. The double flowering varieties only are worth cultivating, and as these plants are quite as free in the production of blooms as inferior varieties, it is simply waste of space to retain the latter. The flowers open successionally and last a fair time in good condition. Seed sown at the period indicated produce plants which will, with fairly good culture, commence to bloom in August, and continue until late in autumn.

Plants well furnished with buds are frequently found serviceable in winter if carefully lifted and potted. In a genial greenhouse temperature with the plants close to the light on a shelf many useful blooms may be cut in winter or early spring. Replanted outdoors again in spring they would bloom freely at the usual time, supporting the growth as required with adequate supplies of water. Where it is found difficult to winter Marguerite Carnations outdoors some seedlings should be grown on in pots or planted in a frame where the needful protection from frost and damp can be readily afforded.

The practice of layering in the same manner as choice Carnations are treated is really not necessary owing to their reproduction from seed being so quickly effected. This renders it quite easy to maintain the stock of plants. When one batch of plants commences to decay in vigour another may readily take its place. —E. D. S.

CALOPOGON PULCHELLUS.

Considering the comparative scarcity of greenhouse and hardy Orchids it is a matter for great surprise that Calopogon pulchellus (fig. 8) should so seldom be seen. As it was brought into this country from North America as long as 125 years ago it might have been expected that it would have received wide attention, but as a matter of fact it is little known. When well grown it is about 1½ foot high, bearing three, four or five flowers on a stem, and its attractiveness is unquestioned. The individual flowers are about an inch across, and though not large they are eminently pleasing in appearance and bright in colour. Paxton describes the blooms as purple, but they are in reality bright rosy mauve and borne on slender stems. Though usually grown in the greenhouse it has been found perfectly hardy in a cool shady spot in moist soil.

HARMFUL AND HARMLESS GARDEN MOTHS—4.

The renowned Linnæus grouped with the large or middle-sized hawk moths, I have mentioned already as adorners of gardens, some insects much smaller, whose principal resemblance to their big brethren lay in the antennæ, which are thickened towards the ends, and slightly feathered. By this arrangement they were placed also upon the list of twilight fliers, but really these brisk moths are, with few exceptions, lovers of sunshine, delighting to hover round the flowers, or skip from leaf to leaf. Now we call them the clear-wings, because these are transparent, and many of the species, in fact, closely resemble flies, or slim insects of the bee tribe. Doubtless, many a gardener passes them and does not think they are moths; possibly the resemblance also deceives insect-eating birds and predatory insects, though it may not matter much to these whether moth or fly has been secured. The caterpillars of clear-wings, unlike those of the hawk moths, which mostly feed in full view, pass their lives under concealment, and if brought into daylight by the pruning or cutting of their food-plants, seem considerably embarrassed. To anyone ignorant of entomology their appearance would suggest the larva of a fly or beetle rather than that of a moth.

We cannot take a better example of this family than the Currant clear-wing (Sesia tipuliformis), which is common at midsummer and for a short time after, occurring about gardens, also in orchards. It is a pretty sight on a fine day to see parties of this moth, their gauzy wings radiant with sunlight, and the dark tuft expanded at the end of the belted body; but we remember the species is one of our garden enemies, and to capture some of them is allowable. However, they can seldom be taken by the fingers, nor is it easy to catch them with a hand net. The caterpillars, pale in colour, and muscular though small, live in the branches and twigs of the Currant, evidently preferring the black variety, but they occur also on other kinds. Sometimes it may happen that bushes infested bear plentifully for awhile, yet in time we find that those boughs where the pith has been mined die off, and I have noticed that when several caterpillars have pierced the main stem the bush may be killed. From observation, I believe they pass two winters in the caterpillar state, that is to say from the eggs laid this summer moths will not be produced till 1899. Probably they do not feed during very cold weather, and they seem to choose for their winter life such positions in the bushes as are most protected. Now, this lengthy period of caterpillar existence is of some moment with this and with the larvæ of some other moths, of some beetles too.

Let us look at its bearing upon the injuries such a species may do, if it is a destructive one. We perceive that there are two broods of the caterpillar or larva always living, and capable of doing mischief. But when a species runs through its course during

Fig. 8.—Calopogon pulchellus.

a year, for several months thereof no harm is done while it is in the perfect state, or is a chrysalis or egg. Many of these caterpillars may be got rid of by judicious pruning.

Next in importance as a garden insect is the pretty red-belted clear-wing (S. myopæformis), so named from its resemblance to a sort of fly. It is certainly not "myopic" or near-sighted, but a lively insect, and occasionally flies high. Its period of emergence is about midsummer, though it has been taken in May and up to the end of July. Some years ago the insect swarmed amongst the Surrey orchards to the south of the Metropolis. Another name for it is the Apple clear-wing, but it is quite as frequent on the Pear, where the trunks or larger branches are its usual abode. The caterpillars living on Apple select generally the slender wood. Productiveness may not be interfered with at first, but after a time the branches attacked are killed and the whole tree will suffer should there be hundreds of caterpillars in it, which is now and then the case. Their presence is often discernible by moist spots on bark or by the appearance of small particles extruded through a crack at the nodes. A correspondent of this Journal sent us, in 1879,

specimens of Apricots from a wall at St. Fagans which had been seriously damaged by the caterpillars of the above species; there may have been similar instances elsewhere, though not reported.

There are other clear-wings, some tolerably abundant, several rare and local, which join the company of our garden insects in the summer months, attracted by flowers, yet which have bred elsewhere in plantations or shrubberies, perhaps on waste ground. A few seldom travel far from the home of the caterpillar; the yellow-legged species, for example, which occurs in Hyde Park, probably in other London parks and elsewhere, is reluctant to go many yards beyond the Oaks and Elms after it has emerged. But the red-tipped clear-wing (S. formicæformis), sometimes abundant enough within Osier twigs to cause damage, likes to take an excursion on the wing, and when an entomologist is searching for this moth amongst the Osiers and Willows he may be disappointed—the insects he seeks are taking the air elsewhere, to return home at dusk. Gardens near parks and woods may invite the Birch-eater, S. culciformis, another species that is red-belted, and thrives while caterpillar in old stumps of that tree. Much larger than these, and really not unlike a hornet, is the hornet or Poplar clear-wing, a midsummer insect that has scared some people. But the antennæ are longer, the wings rather more ample, and the banded body downy, not hard to the touch. Nor does it produce the warning sound which gives notice of a hornet's proximity. The caterpillar lives two years in the solid wood of Poplars or Aspens, then quits it to make a cocoon outside of silk and chips, usually placed near the foot of the tree.

Pass we now to another moth of larger size, which about this season we may happen to see in flight after dark, or resting by day upon a tree. Though its wings are not clear they are partly transparent, especially in the females, which are larger than their male companions, and remain out till the middle of August, the egg-laying operation taking some time. This is the leopard, also named Zeuzera Æsculi, but it has no marked partiality for the species of Æsculus, being rather a general feeder as a caterpillar. It is certainly one of our beautiful moths, the snowy white of the wings and thorax being thickly dotted with black or bluish-black spots, the abdomen is also banded. Indeed, the first observed specimens of this moth were regarded as so curious during last century that they were sold at half a guinea each. Probably the insects would be much commoner if sundry birds did not seek it, frequently seizing one before the wings are expanded, and it is chased by bats. The caterpillars commence life by feeding on the bark of some tree, but soon pierce into the wood, and construct galleries along stem or branches. They work on for nearly two years before they assume the chrysalis state. Before changing each caterpillar (which is spotted similarly to the moth, having a horny plate behind the head) makes a cocoon of wood dust close to the surface, so that it can easily emerge.

Long is the list of ornamental trees it attacks; amongst the trees of our orchards, the Apple, Pear, and Plum are selected. If, for awhile, the fruit-bearing power seems unaffected, by degrees the branches that are ruined show signs of the attacks, or the tree itself becomes feeble. Indications of the presence of these caterpillars are discernible outside the burrows, and they have been killed by running flexible wire into their holes; also by the injection, with a syringe, of liquid ammonia and other poisonous fluids, perhaps at some risk of mischief to the infected tree. Blowing the fumes of sulphur or tobacco into the openings has also been suggested. The still larger and sombre-hued goat moth (Zyleutes Cossus) occasionally careers slowly over gardens in July, having bred, it is likely, in some Elm or Willow near, for these trees are the special favourites of the caterpillar, which is presumed to exist three or even four years in that state, doing damage to many trees. It has been said the moth has been captured at sugar spread as a bait upon trees or palings.—Entomologist.

SCHOOL GARDENS.

I apologise to "T. D. S." for not having previously answered his request for further information, given under the above heading at page 10. It was needful to obtain a copy of the Education Department's code of regulations for the year to get the required knowledge. As previously intimated the subject of "Cottage Gardening" is a special and exceptional one, and is of course chiefly applicable for use in rural schools. These, because generally so poor, hardly care to take a subject that, whilst of the highest practical value to the scholars, is such a poor grant earner, so much of our educational work—to our shame be it said—being dependent not on its ultimate value to the children taught, but to the managers and teachers in a pecuniary sense now in a rural school.

But whilst grants may be earned in history, geography, and elementary science, purely academical subjects, cheaply—that is, at the cost of a few books—such very important technical or practical subjects as cottage gardening, dairy work, laundry work and cookery, cannot be taken without there being in the first place considerable outlay. Thus in cottage gardening the grant is but 2s. per head per annum if only twenty hours instruction be given, and but 4s. per head if forty hours be thus employed. Each class must also comprise not more than fourteen scholars, whilst it is obvious that a practical instructor could just as well teach twenty as fourteen. But the requirements of such practical instruction are ground for gardens, tools for the boys, manures, and seeds for cropping; also a tool shed, wheelbarrow, and water appliances. The provision of these things would require at the outset an outlay equivalent to all that a class would earn in two or three years. Then unless the school teacher be a capable gardener, a practical gardener teacher must be hired to instruct the lads for one or two hours per week.

Thus it is seen how very heavily the suggested subject is handicapped at the outset. It is very easy to understand also that inspectors of schools of the ordinary academic class would look askance on a subject of which they were entirely ignorant. I take it for granted if "T. D. S." would like to do something useful in this direction in Birkenhead he had better approach some of the School Board or voluntary managers first, and seek to induce them to take up cottage gardening as a special subject in their boys' schools. It is entirely for them to do as they please. It would not be a matter for surprise if on the threshold of his beneficent labour in the cause of real technical education in elementary schools he were met by the objection that the subject would earn little or no money.

Still, if land for the purpose could be freely placed at initial disposal, and contiguous to the schools, one difficulty would be overcome, so very much would then depend on finding sympathy, or otherwise. County Councils in their Technical Education Scheme have not to consider grants, and can, as is done in Surrey, start cottage gardening for lads who have left school in a liberal as well as in a practical way. Cottage gardening is found in the Year's Education Code, on page 26, article 101, section K.—A. D.

ROYAL HORTICULTURAL SOCIETY.

Drill Hall, July 13th.

The major portion of the exhibits at the Drill Hall on Tuesday were composed of hardy flowers. Messrs. Veitch's Gooseberries and Mr. Beckett's vegetables made a handsome display, but Orchids were far from numerous.

Fruit Committee.—Present: T. Francis Rivers, Esq. (in the chair); with Messrs. G. Bunyard, P. C. M. Veitch, J. Cheal, A. H. Pearson, A. Dean, G. H. Sage, G. Wythes, C. Herrin, and H. Balderson.

Messrs. T. Rivers & Son, Sawbridgeworth, Herts, exhibited a splendid collection of Cherries, comprising a score of distinct varieties. Almost all the varieties were represented by superb fruits, but Frogmore Bigarreau, Bigarreau Noir de Guben, Géant d'Hedelfinger, Monstreuse de Mezel, Bigarreau Napoleon, Turkey Black Heart, White Bigarreau, Early Rivers, Elton, and Empress Eugénie were certainly the handsomest (silver-gilt Knightian medal)

A collection of Lettuces was exhibited by Messrs. J. Carter & Co., High Holborn. Both Cos and Cabbage sorts were represented to the number of thirty-one. With so many it was difficult to decide which were the best, but All the Year Round, Perpignan, Continuity, New York, Grand Admiral, Victoria, and Tom Thumb amongst the Cabbage varieties, with Sugarloaf, Baldwin, Paris Green, and Dunnett's Giant White of the Cos, were some of the best. Ten varieties of Turnips were also shown by this firm, and included Early Milan, Early Munich, Extra Early French, Golden Rose, and others (silver Banksian medal).

Upwards of fifty dishes of Peas were sent by Messrs. W. W. Johnson and Son, Boston. Some of the varieties were shown considerably too early, the pods not being nearly full, while others were quite ready. A few of the best were Duke of York, Gradus, Boston Unrivalled, Witham Wonder, Telegraph, Sutton's Excelsior, Goliath, Telephone, Sutton's Forcing, and Empress of India (silver Banksian medal).

Mr. H. Eckford, Wem, Salop, staged Peas Diamond Jubilee, Wem Giant Marrow, Prior, Ideal, and Pioneer, all of which were handsome podded varieties. Messrs. R. Veitch & Son, Exeter, staged Veitch's Perfection and Goldfinder Peas and Exhibition Long-pod Beans.

Messrs. J. Veitch & Sons, Ltd., Chelsea, exhibited a box of Veitch's Perfection Strawberries; and Mr. W. Allan, gardener to Lord Suffield, Gunton Park, sent two boxes of Strawberry Lady Suffield.

The finest exhibit in this section was that arranged by Mr. E. Beckett, gardener to Lord Aldenham, Aldenham House, Elstree. Every single dish was good; some were perhaps better than others, but there was not one weak on the table. There were Potatoes Rivers' Royal Ashleaf and Sharpe's Victor; Cauliflowers Webb's Mammoth, Veitch's Autumn Giant, and Walcheren; Lettuces Sutton's Early Mammoth, Webb's New Wonderful, and Sutton's Superb White Cos; Carrots James' Intermediate, Early Gem, and Sutton's Intermediate; Peas Duke of Albany, Telegraph, and Carter's Early Morn; Beans Canadian Wonder, Ne Plus Ultra, Mammoth Broad, and Leviathan Broad; Turnip Sutton's Snowball; Vegetable Marrows Moore's Cream, Pen-y-byd, and Long White; Cabbage Carter's Model; Tomatoes Polegate and Sutton's Perfection; Cucumber Beckett's Victory; Onions White Leviathan and Red Italian; Globe Artichokes Green and Purple; Radish French Breakfast; Beet Sutton's Red Globe, and a dish of Mushrooms (gold medal).

Messrs. J. Veitch & Sons, Ltd., sent a collection of Gooseberries, comprising standards, bushes, cup-shaped and gridiron-shaped trees. They were splendid examples of training, and were carrying large

numbers of fruits. The varieties were Railway, Gipsy Queen, Hue and Cry, Whitesmith, Forester, Alma, Champagne, Trumpeter, Industry, High Sheriff, Tiger, Queen of Trumps, and Yellowsmith (silver-gilt Banksian medal).

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair); with Messrs. J. Fraser, C. T. Druery, H. B. May, C. E. Shea, W. Bain, H. J. Jones, D. B. Crane, E. Beckett, G. Gordon, J. Fraser, R. M. Hogg, and J. Walker.

Mr. B. R. Davis, Yeovil, staged a bright collection of Begonia flowers, double varieties only being represented. Amongst the best were Hercules, Albert Crousse, Salmon King, R. B. Parsons, Countess Temple, Mrs. W. H. Fowler, Exquisite, and Eldorado (silver Banksian medal). Mr. H. B. May, Upper Edmonton, sent a group of Aspleniums, comprising some dozens of distinct species and varieties (silver-gilt Flora medal). Messrs. F. Sander & Co., St. Albans, again sent plants of Watsonia Ardernei. Messrs. A. W. Young & Co., Stevenage, contributed a collection of hardy flowers in considerable diversity.

Sweet Peas from Mr. Henry Eckford, Wem, Salop, were very beautiful, and comprised some charming varieties. Very fine were Lady Grisel Hamilton, Salopian, Peach Blossom, Stanley, Dorothy Tennant, Prima Donna, Her Majesty, Lottie Eckford, Mars, Emily Eckford, and Blanche Burpee (silver Flora medal). Mr. B. Ladhams, Shirley, Southampton, sent a handsome collection of hardy flowers, comprising Campanulas, Achilleas, Chelones, Œnotheras, Coreopsis, Scabiosa, Potentillas, and others (silver Flora medal).

The usual position was occupied by Messrs. Barr & Sons, Covent Garden, with their hardy flowers. We noticed amongst the many others Gypsophilas, Sweet Peas, Calochorti, Irises, Phloxes, Alströmerias, and Gaillardias (silver Banksian medal). Messrs. H. Cannell & Sons, Swanley, sent a collection of seedling Begonias, the seeds of which had only been sown five months previously. The plants were dwarf, sturdy, and well flowered (bronze Banksian medal) Mr. John Charlton, Tunbridge Wells, exhibited a well diversified collection of herbaceous flowers (silver Banksian medal).

Mr. Jas. Douglas, Great Bookham, Surrey, sent a collection of fine Carnations, in which the most noticeable were Pelegia, Miss Violet Douglas, Badminton, Sir Henry Irving (these four received awards of merit), Zoe, Golden Eagle, Distinction and Garnet. Messrs. R. Wallace & Co., Colchester, staged Liliums, Calochorti, and Brodiæas in their customary excellent manner (silver Flora medal). Messrs. F. Cant & Co., Colchester, exhibited a charming stand of Roses, amongst which A. K. Williams, Susanne Marie Rodocanachi, Mrs. Frank Cant, Madame de Watteville, Madame Abel Chatenay, Maman Cochet, Madame Lambard, and several garden Roses were most conspicuous (silver Flora medal).

Messrs. J. Veitch & Sons, Ltd., occupied the whole of one side of a table with Coreopsis, Campanulas, Gypsophilas, Erigerons, Gaillardias, Phloxes, Lychnis, Scabiosas, Malvas, Iris Kæmpferi, and many other hardy flowers. The same firm sent also a number of Carnations and Picotees, which were clean and beautifully coloured (silver-gilt Banksian medal).

Messrs. W. Paul & Son, Waltham Cross, sent a collection of Roses comprising Sylph, Madame Ada Carmody, Waltham Standard, Milton, White Lady, Empress Alexandra of Russia, and others. The Water Lilies sent by Mr. J. Hudson, gardener to Leopold de Rothschild, Esq., Gunnersbury, were very beautiful.

Mr. C. Herrin, gardener to Lady Louisa Fortescue, Dropmore, was first for twelve bunches of hardy flowers; and Miss Debenham, St. Albans, for eight bunches.

CERTIFICATES AND AWARDS OF MERIT.

Begonia Miss Griffith (B. R. Davis).—A beautiful double variety, with large creamy-white flowers (award of merit).

Calochortus Plummeræ aurea (R. Wallace & Co.).—A very beautiful form, with bright yellow flowers (award of merit).

Lælio-Cattleya Canhamiana albida (J. Veitch & Sons, Ltd.).—The sepals and petals of this handsomely formed Orchid are white very slightly tinged with rose; the fine lip is rich velvety purplish maroon (award of merit).

Lobelia tenuior grandiflora (B. Ladhams).—This Lobelia, of which the many flowers are bright blue, grows to height of about 15 inches, and is very showy (award of merit).

Logan Berry (G. Bunyard & Co.).—This is an American plant, the growth of which resembles the Raspberry. The fruit is very acid, but should have some economic value. It is a profuse fruiter (award of merit).

Melon Syon Perfection (G. Wythes).—A medium-sized variety of handsome appearance. The flesh is deep scarlet and of exceptional depth. The flavour is very fine, and the aroma pleasant. The green skin is well netted. The parents were Syon House and Beauty of Syon (award of merit).

Nymphæa Ellisiana (J. Hudson).—A handsome variety with flowers of deep crimson hue (award of merit).

Nymphæa Marliacea albida (J. Hudson).—An immense white flowered variety of much beauty (first-class certificate).

Phaius Ashworthianus (F. Sander & Co.).—This is the result of a cross between P. Manni and P. maculatus. The sepals and petals are yellow and the lip crimson veined yellow (award of merit).

Platanus occidentalis argentea variegatus (J. Russell).—A singularly handsome leaved plant about 6 feet high. The foliage is green and silver (first-class certificate).

Rose Sylph (W. Paul & Son).—A new Tea variety of chaste beauty. The colour is cream suffused with rose and saffron (award of merit).

Salvia bicolor (W. Bain).—A very beautiful Salvia with lilac and white coloured flowers borne on spikes about 3 feet high. The plant is quite hardy (award of merit).

NAPHTHALENE.

THIS substance was noticed as existing in coal tar as early as 1820. Faraday first determined the composition of naphthalene, and Laurent greatly elucidated its chemical history. Now we have the substance in "cake" form and in "crystals." The coal tar, already having the lighter oil removed, is distilled in large iron vessels, and the oil which distils (after a certain portion has passed over) is treated with sulphuric acid cooled to 0°, when the naphthalene which it contains is deposited. Repeating the process, more naphthalene is obtained from the still liquid portions of the oil. Strained in cloth strainers, and pressed in bags to get rid of the adherent oil, the crude naphthalene is redistilled, and the result is "cake." This melted in basins, covered with paper so as to sublime, and then set aside to cool, colourless hexagonal crystals of naphthalene are found between the paper and cake in the basin. This pure naphthalene has the formula $C_{10}H_8$ = ten atoms of carbon and eight of hydrogen, or its rational formula may be expressed as $C_4H_4(C_2)C_4H_2$. It melts at about 80° and boils at 218°, sublimes—that is, wastes away, as camphor even at low temperature, and rotates upon water somewhat like camphor. Both, it is needless to say, are excellent germicides, and have been used a long time—camphor in rooms and naphthalene, as naphthal beta, in bee hives against foul brood germs, "bacteria."

Some time ago I drew attention to aniline as a safe and very cleanly insecticide for destroying aphides, thrips, and similar pests, briefly also alluding to naphthalene as a "cure-all" for the diseases to which useful plants are liable. Aniline (C_6H_7N) is obtained from benzole or benzene, discovered by Faraday in 1825, consisting of hydrogen and carbon (C_6H_6). This acted on by nitric acid produces nitro-benzole ($C_6H_5NO_2$), and this probably would tell more quickly as a fungicide and insecticide than aniline, which is obtained by treatment with nascent hydrogen, as the oxygen means burning up the "hides" of the vermin more quickly. When soluble, as it may by treating the derivative oil with potash and amalgamating, there would not be any harm to vegetable life of the higher forms either on the foliage or at the roots when used in moderation, and I am not certain whether this would not be better than naphthalene for the well-doing of the plant—that is, as a manure. Even aniline is a better substance as food than naphthalene, as in aniline (C_6H_7N) there is the nitrogen already; but in naphthalene ($C_{10}H_8$) the nitrogen does not come in until we produce the analogous substance, naphthylamine ($C_{10}H_9N$). Thus aniline and naphthylamine place the two substances on an equality, and both are very safe fungicides or insecticides—aniline, 1 in 20 parts water; and naphthylamine, 1 in 30 parts water. To place aniline on a level with naphthalene as a keen fungicide or insecticide we must pass the first back to benzene (C_6H_6), but naphthalene ($C_{10}H_8$) is the stronger.

Might is, as it always has been, the great thing in these days. The "big battalion," however, does not always win, and strength is a very bad thing for plants in the way of eelwormicide, fungicide, germicide, insecticide, and miticide, some of the prescriptions, either in themselves or in the manner of administration, being more harmful than the diseases produced by the infesting pests. I therefore go in for safety first and preventive or remedy afterwards, for the plant will aid itself to the best of its power and opportunities; hence the cultivator throws in pathological measures on the side of the plant, and this secured the killing of pests is a comparatively easy matter. Indeed, some cultivators so manage to grow things as to have very few pests of any kind, which may be due to particular conditions quite unassociated with the procedures of cultivation. But growers need no reminder of these things. What all aim at is the "big battalion" on their side and the little one on the opposite. The case is reversed when a strong fungicide or insecticide is requisitioned, hence naphthalene is preferred to benzene, naphthylamine to aniline, and naphthaline red ($C_{30}H_{21}N_3$) to rosalene ($C_{20}H_{19}N_3$). The two latter substances are used as dyes, and the refuse of the carpet manufacturer used as manure, and as such have been found extremely valuable for the freeing of the land from pests.

Make no mistake, there exists a relationship between naphthalene and benzene. Thus we have nitrobenzene and nitronaphthalene related to the parent substance in the same way, and from these nitro compounds reducing agents give rise to aniline and naphthalamine, from which again are obtained rosalene or base of the aniline colours, and on the other hand naphthalene red. The naphthalene is the stronger as a destroyer of pests, and the benzene the weaker as expressed by the formulas. If we look at the manurial or benefit to the plant side, nitrobenzene and nitronaphthalene are both manures of no mean order, as also are aniline and naphthylamine, and rosanilene and naphthaline red. The "kill" properties are more pronounced in the naphthalene than benzene, and this made soluble gives naphthalene superiority both ways, as the power to reduce organic matter in the soil is greater.

Thus the weight of evidence is in favour of naphthalene, and when this is made soluble we get something corresponding to soluble phenyle (C_6H_5)—namely, soluble naphthalene ($C_{10}H_7$), and with soluble benzene (C_6H_5). So much for the "killing" power—soluble naphthalene tops the lot, and to it I will now confine my remarks, and may say that to get full value out of it we must go a few stages further; but I am not going to bother the reader with any more chemical equivalents, only to

say that when we introduce potash to naphthalene we get naphthalene-potassium ($C_{10}H_8K_2$). Gardeners will smile—something again in return for spending money on a fungicide and insecticide—and, perhaps, rub their hands. Well, we get chemically additive and substitution products, which I will not follow only so far as to say that we add four atoms of chlorine to the naphthalene ($C_{10}H_8$), and thus secure a substance having the formula $C_{10}H_8Cl_4$, which surely Mr. W. Dyke will admit is a stinger, even for root eelworm. Too strong, well, it will kill either fungoid or insect pests, also plants of a useful character until made soluble and diluted to a safe strength.

This brings us to the crucial point. Naphthalene is not a particle of use as it is, and to make it of any use we must go back to the derivative—the coal oil; but this will not do, therefore get the lighter, clear burning oil = paraffin oil, which in solid form—that is, paraffin—amounts to about 0·12 per cent. of English bituminous shale. The oil, as everybody knows, is clear, and whether "boghead," or whence derived it may be, answers. Napthalene melts in that oil by the application of heat—that is, it goes back into the oil, and then this compound of naphthalene and paraffin oil saponifies by the addition of potash to form a softsoap, or with soda to form a hard soap. That makes all the difference, and one part of this as strong as it can be made in 1000 parts water—1 oz. to 6¼ gallons of water—kil's pests of all sorts.

All the preceding is laboratory work, which, as before stated, will not farther be followed, but enough has been said to let chemists work out a substance for us as clear as crystal, neither staining foliage, flowers, nor fruit, yet killing pests without nauseous smells, but such as a lady may use in boudoir for killing germs of disease, and preventing them from coming in. These are what we are coming to sooner or later, and everybody will be the better. But what we ordinary mortals, termed gardeners, want is for chemists to prepare for us a preparation of paraffin containing a certain percentage of napthalene, say 10 per cent. Chemists could do it easily by heat, but I do not advise my brothers of the spade to try, for fear of accident, as paraffin flares so when ignited, and too much heat spoils the whole affair, or may do worse.

Given the naphthalin-paraffin we can go ahead in this way :—Dissolve 1¼ lb. softsoap in a gallon of soft water by boiling, remove from the fire and add 2 gills (½ pint) of the compound whilst hot (not under 185°, and as near that as may be), stirring briskly till amalgamated, and then dilute with hot water to 13 gallons. This gives something like 1 in 2000 of naphthalene, 1 in 170 of paraffin, and 1 in 100 of softsoap. At that strength there is no danger of injury to tender foliage, whilst it would kill either fungi or insects in their young state. Then, in degrees upwards, it could be "stiffened" so as to suit mature or not tender foliage and hard-to-be-killed full grown or adult insects, bringing the naphthalene up to 1 in 1000, paraffin 1 in 85, and softsoap 1 in 50 by only diluting the compound to 6½ gallons. At this strength there is little danger of injuring the roots, and it certainly must kill all soil pests and afterwards act as manure.

The foregoing is a homely way of doing things, and could, no doubt, be improved upon; but I prefer to let chemists prepare more concentrated forms, such as naphthalin-paraffin compound. First get this—10 per cent. napthalin in paraffin oil; then, second, softsoap dissolved in an equal amount of rain water; and, third, take one part of naphthalin-paraffin and six parts of softsoap solution and emulsify. If that is not clear enough to the chemical mind, put it this way :—

Naphthalin	1 oz.	one part.
Paraffin oil	10 ozs.	
Softsoap...	33 ozs.	six parts.
Rain water	33 ozs.	

Amalgamate the naphthalene with the paraffin oil by heat, dissolve the softsoap in the water by heat, and at 185° add the naphthalene-paraffin, and thoroughly emulsify. Place in boxes or jars, and label naphthalene-paraffin-potassium compound.

Altogether there is some 4 lbs. of compound, and this will make 25 gallons of solution, sufficiently strong to kill aphides, without injury to the tenderest foliage. This is in the proportion of 1 part compound to 62½ parts water = 1 lb. compound to 6¼ gallons of water. The naphthalene, therefore, runs 1 in 4000, paraffin 1 in 400, and softsoap 1 in 120 parts water respectively. In ordinary practice softsoap is used in the proportion of 1 in 80 = 2 ozs. to a gallon of water, and petroleum 1 in 192 = a wineglassful (2 ozs. fluid) to 3 gallons of water. Naphthalene therefore strengthens up the compound, so that less paraffin and softsoap is used, for after all the new insecticide* is only paraffin emulsion naphthalenised. In the same way phenol could be used advantageously, and other substances of similar series.

To get at root pests we must come down to naphthalin or naphthalene (the older name) at lessened solution, 1 in 1000 of naphthalene being about the thing for disinfecting purposes, and then comes the question of safety for the plants when used during their growth. About 1 in 2000 is as much as root hairs can bear and some not that, so there must be judgment in these matters as in everything else. What may be done with paraffin-naphthalene emulsion remains to be seen, but I believe a patent has been applied for both in this country and on the Continent, but the whole business is well known to chemists, though the form is not such as the science would lead us to expect, for we want naphthalene in such soluble form as may be used at a strength of not less than 1 in 100 parts for root pests, when, but not before, it may rank with soluble phenyle, and similar preparations for effective use as eelwormicides, germicides, fungicides, insecticides, and miticides.—G. ABBEY.

* Paraffin-Naphthalene Emulsion, Pharm. Centralh xxxviii, 242 ("Pharmaceutical Journal.")

Notes & Gleanings

EVENTS OF THE WEEK.—The number of Rose Shows is now rapidly dwindling, and soon will be over for 1897. A list of those still to be held will be found on page 52. On Saturday, July 17th, the National Viola Society will hold its exhibition in the Royal Botanic Gardens, as will the National Carnation and Picotee Society on the following Wednesday.

—— WEATHER IN LONDON.—Though we have had many indications of rain in the metropolis during the past seven days, none has fallen. As a rule the days have been warm, but on one or two nights the winds have been quite cold. A warm, steady rain of some hours duration followed by fine weather would be greatly appreciated.

—— CARLISLE SHOW.—The schedule of the exhibition of the Carlisle and Cumberland Horticultural Society, to be held in the Drill Hall, Carlisle, on November 10th and 11th, comprises nearly sixty classes, some of which are open and others restricted. Some of the prizes are very good, while others are comparatively small, but it is hoped they will prove sufficiently good to insure a fine exhibition.

—— FREAKS OF TOMATOES.—I notice in your Journal of the 8th inst. a paragraph on the above subject, and your correspondent would like to know if any of your readers have had similar experience. I am an amateur, growing about forty plants, and have one plant which, after making eight leaves, instead of growing in the ordinary way, is crowned with five trusses. It has two fruits and about sixty blooms, some just setting, some fully expanded, and some not yet opened. The variety is Goldfinder. All my plants are from 3 to 4 feet high, and well set with fruit.—JOHN PILLMOOR, *Grove Terrace, York.*

—— MR. G. J. SYMONS.—The Albert medal for the present year has been awarded, with the approval of H.R.H. the Prince of Wales, the President of the Society of Arts, to Mr. G. J. Symons, F.R.S., "for the services he has rendered to the United Kingdom by affording to engineers engaged in the water supply and the sewage of towns a trustworthy basis for their work, by establishing and carrying on, during nearly forty years, systematic observations (now at over 3000 stations) of the rainfall of the British Isles, and by recording, tabulating, and graphically indicating the results of these observations in the annual volumes published by himself."

—— BIRMINGHAM SHOW.—The Chrysanthemum Show, annually held in the capital of the Midlands, has long been celebrated for its excellence — in fact it is one of the very finest of the provincial exhibitions. This year it bids fair to excel itself, for the Committee, desirous of showing the Society's loyalty to our Queen, has added £50 to the prize list, and in addition offers nine cups in two classes, the value of these ranging from £25 to £3. One is for a floral arrangement, and the other for a collection of fruit, but the particulars of these and the remaining eighty-eight classes may be had from the schedule. The dates fixed are November 10th, 11th, and 12th, in the Bingley Hall. Mr. J. Hughes, 140, High Street, Harborne, Birmingham, is the excellent Secretary, to whom all communications must be addressed.

—— IMPROVED VARIETIES OF FLOWERS.—In raising seedlings of ornamental trees, fruits, or flowers there are noted great variations in every character, from leaves to flowers and fruits. It is the practice of those who wish to improve or obtain new varieties to watch for such variations as may be in the line they desire to improve. For instance, a plant which usually bears entire leaves may have some seedlings with the leaves slightly lobed. If seeds are taken again from these the probabilities are that fine, cut-leaved varieties will eventually be obtained. So with the forms or characters of flowers. Any tendency noted in a seedling to vary in a line we may think to be an improvement is selected for seed, and in that way the desired improvements are secured in the progeny. The Germans, who are, says a transatlantic journal, famous for their patience, and are willing to wait two or three years for good results, are among the foremost in this branch of flower progress. Many improvements in garden flowers are made known to us by the efforts of German seedsmen, although the French are rapidly competing with them in this line.

—— GARDENING APPOINTMENTS.—Mr. G. Dance, general foreman at South Lychett Manor, has been appointed head gardener to Sir Elliott Lees, Bart., at the same place. Mr. E. Seal, gardener at Pownall Hall, Wilmslow, has been placed in a similar position at Sharston Hall, Northenden, the residence of R. Clay, Esq.

—— KENTISH STRAWBERRY CROPS.—In some parts of Kent this year the crop of Strawberries is quite phenomenal. From Sandwich alone during seven days over 100 tons of this luscious fruit were despatched. In one day the consignments exceeded 30 tons, requiring special goods trains to convey them to London. Large quantities, however, go beyond London to the great centres in the Midlands and the North, the average price being 1s. per gallon. There is now a very considerable acreage under Strawberry cultivation in Kent.—("Westminster Gazette.")

—— NEW YORK MARKETS.—The first new Apples, green and small, came from North Carolina recently, says a New York contemporary. Niagara Grapes, from Florida, are already offered here, a 3 lb. basket of large berried attractive bunches costing 45 cents. Other new-crop fruits are Currants and black and red Raspberries from Maryland, Delaware, and New Jersey. Water Melons and Musk Melons are now of good size and flavour, and sell readily. Choice English Gooseberries of immense size bring 20 cents a quart. Nectarines, from California, large and showy, cost 50 cents a dozen, and new Grape-fruit, from Jamaica, 25 cents apiece. Forty-four carloads of California fruits were sold here last week. Lemons have advanced 1·00 dol. a box during the past ten days, in anticipation of warmer weather.

—— THE LATE MR. WOODCOCK.—Under the heading of a "Public Loss," we take the following particulars from the "Eastern Evening News" of the 5th inst. "Mr. Woodcock began lecturing under the Norfolk County Council in 1892, and in consequence of the success attending his lectures he was given a permanent appointment in May, 1893, since when he has been continuously at work lecturing in school rooms or in the open air on the management of allotments and gardens; inspecting allotments for the award of the County Council prizes, and acting as Judge at the various county shows. The deceased gentleman was held in the highest possible regard by members of the County Council, who placed a high value on his labours. He had an immense store of experience in agricultural pursuits, and he had a happy knack of imparting his knowledge to others. Amongst cottage garden and allotment holders all over Norfolk he made a large circle of friends. Applications for his services were constantly being received at the County Council offices, and whenever he lectured he was asked for a second time. Personally he was a man of genial unobtrusive character. He had only attained the age of fifty-six. A pathetic circumstance in connection with the sad event is that at the meeting of the County Council on Saturday morning Mr. Lee Warner, as Chairman of the Technical Education Committee, speaking in ignorance that death had already taken place, expressed a cordial hope that Mr. Woodcock would soon be restored to health."

—— A NEW USE FOR SNAILS.—In Paris, as in London, there are critics who believe that Government clerks, who for the most part discharge their duties with zeal and punctuality, in return for a comparatively trifling salary, are in the possession of sinecures, and lead a butterfly existence. The latest story which has been circulated at the expense of the officials of one of the departments in Paris, is so droll that it has at least the saving merit of ingenuity. It seems to be meeting with any amount of credence, though it is hardly necessary to add that it should be accepted with the proverbial grain of salt. In order, as the narrative goes, to beguile the tedium of office hours the clerks have invented a novel kind of "sport"—to wit, snail races, which are run in a large and unused upper chamber under the roof. The snails are ranged at one end of the room, and at the other is laid a collection of vegetables, for which they naturally make with as much celerity as their rather inadequate means of locomotion will permit. But it is not entirely on level ground, in the shape of the floor, that the contest takes place. The excitement is increased by the fact that in their slow but sure career the snails have to surmount various obstacles ere the winning-post, represented by Cabbage leaves, Carrots, and so forth, is reached, so that the match partakes of the character of a steeple chase rather than of a race for the Grand Prix at Longchamps. A sweepstake is got up, and the winnings are pocketed by the backers of the liveliest snails. Such is the story, and already it has brought down upon the devoted heads of the unfortunate employés a heavy storm of reproaches, which, as may well be believed, are quite unmerited.—("Gardeners' Magazine.")

—— THE WEATHER LAST MONTH.—The prevailing direction of the wind was W. on sixteen days. Total rainfall 2·37 inches, which is 0·25 inch above the average for the month. This fell on thirteen days, the greatest daily fall being 0·72 inch on the 28th; barometer (corrected and reduced), highest reading 30·281 inches on the 12th at 9 A.M.; lowest, 29·316 inches on the 18th at 1 P.M. Temperature: highest in the shade 83° on the 13th; lowest 41° on the 10th. Mean of daily maxima 69·36°; mean of daily minima, 50·60°. Mean temperature of the month 59·98°. Lowest on the grass 37° on the 10th; highest in the sun 145° on the 28th. Mean of the earth at 3 feet 55·40°. Total sunshine 156 hours 40 minutes. There were three sunless days.—W. H. DIVERS, *The Gardens, Belvoir Castle, Grantham.*

—— ISLE OF WIGHT.—During the past week the Potato disease has spread with great rapidity in all parts of the Island. The varieties Late Rose and White Beauty of Hebron, from reports to hand, are the most badly affected. The cause of the disease is no doubt the dampness of the atmosphere, which, according to meteorological observations, stands out very prominently during the month of June. On six days the atmosphere was almost completely saturated, and the rainfall was greater than in any preceding June for the last ten years. Several thunderstorms have visited the Island, and the total rainfall for the month is 3·30 inches. In the valleys and sheltered situations the disease is most conspicuous. Peas, Grapes, and Onions are reported from various districts to be suffering from diseases, though not to an alarming extent, or anything in comparison to the Potato disease. The early Potatoes are turning out very well indeed, particularly Sutton's Ringleader, Early Regent, and Sutton's Seedling. The prices are, retail, from 3s. to 4s. a bushel in Newport, the capital and oldest market town in the Island.—S. H.

—— OLEARIA MACRODONTA.—Where this shrub will stand the winter it makes a welcome addition to the evergreens. Although it grows well and has stood unprotected in Shropshire it requires a very sheltered position to keep it unharmed about London. In any garden, however, where it does stand it is worth growing largely, as apart from the beauty of the graceful heads of white star-shaped blossoms during June and the early part of July, the leaves are beautiful the whole year round. During the summer the plant grows very fast, and probably this is the reason why it does not stand the winter well in some places, the shoots not getting thoroughly ripened. The leaves are very freely produced. They are ovate in shape with deeply dentated margins. The upper surface is deep olive green and very glossy, the under surface silvery. As cuttings can be easily rooted it is as well to keep a few small plants in a frame each winter to insure a stock in case of injury by severe frosts. It is a New Zealand plant, and is worth growing as a cool greenhouse plant where it cannot be grown outside, as it makes a good plant for decoration during winter.—K.

—— BATTERSEA PARK.—A proposal will shortly come before the London County Council for the construction of a suitable embankment along the whole river frontage of Battersea Park. The existing river wall is of a very slight nature, and a large proportion of it is in an extremely bad condition. The Parks and Open Spaces Committee of the Council, who are making the proposal, state that the present wall may be described as a mere skin of concrete blocks, generally 9 inches in thickness and in some cases less. For some years past it has been the practice to patch the worst places from time to time at an annual outlay of some £400 or £500. The result, however, has not been satisfactory, and the deterioration which has arisen in past years has not been overtaken, so that the wall is steadily growing worse. The Council's engineer reported in 1895 that the cost of putting the wall into a proper state of repair, if undertaken at that time, would be about £6000, and that even then there would be a subsequent annual charge of about £200 for its maintenance. Under these circumstances the Committee are firmly of the opinion that the best and most economical course would be to reconstruct the wall in a substantial manner. The length of the river front of the park is about 1300 yards, or about three-quarters of a mile, and the engineer is of opinion that a granite-faced wall with a granite parapet can be constructed there for the sum of £43,500. In view of the large recurring charge for maintaining the existing wall, and of the economy that would ultimately be effected by the substitution for it of a permanent granite embankment, and also taking into account the enhancement of the appearance of the park, the Committee strongly recommend the Council to adopt the scheme. It is proposed that the cost of the improvement shall be charged to capital account, the repayment being spread over the full term of the stock, out of the proceeds of the issue of which the cost would be defrayed.—("Garden.")

—— Adorning Liverpool.—At Liverpool an interesting experiment has been inaugurated. The Chairman of the Parks and Gardens Committee of the Corporation (Mr. Ball) has made a tour of some of the poorest streets, and has distributed about 500 window boxes and plants. The novelty of the procession (Mr. Ball was accompanied by large carts containing the boxes) naturally attracted great attention. No difficulty was experienced in obtaining ready helpers with the work, and great eagerness was displayed by the inhabitants to become possessors of the boxes. These have been given gratuitously upon an undertaking that the plants and flowers shall be well cared for, and a notification that if the gift is abused it will be withdrawn. Other districts please copy! Such a scheme will doubtless necessitate some supervision by the donors at the start, but it must ultimately tend to a considerable extension, and a corresponding demand for all sorts of plants, pots, boxes, seeds, and other requirements. What a rush there would be, says the "Irish Farmers' Gazette," for those window boxes if the Dublin Corporation would take the hint thus given by their Liverpool brothers. But there, we have no Parks and Gardens Committee here, and the only attempt made by our City Fathers to encourage a love for flowers among the poorer citizens is the distribution of a few scraggy Geraniums at the end of the year, when they are practically worthless to those on whom they are conferred.

—— Bananas.—The Banana trade of Santiago de Cuba has been much hindered and damaged by the long-continued war between the insurgents and the Spanish troops. The trade, at all events for the present, says Consul F. W. Ramsden, may be considered at an end as far as regards Baracoa, Sama, and Banes, but Gibara still produces the fruit. Baracoa in 1895 only exported 1,019,567 bunches, or about two-thirds of its average, this decrease being due to the cyclone which on September 23rd, 1894, destroyed a great many of the plantations in the districts of Sabana and Gran Tierra. In the year 1895 the Cuban insurgents sacked and burned the town of Sabana, causing damage to the extent of about 1,000,000 dols. The Baracoa crop of 1896 has simply been allowed to rot in the country, as it has been impossible to collect it, and exports only amounted to 2000 bunches, or, in other words, were virtually nil. Banes exported in 1895 807,000 bunches, and 755,000 in 1896, which is about three-quarters of the previous crop of 1894; but the place is now entirely abandoned, having been evacuated in August, 1896, and shortly afterwards burned by the insurgents. Sama is also abandoned, as far as the plantations are concerned. Sama exported 608,000 bunches in 1895, and 550,000 bunches in 1896, both of which crops may be considered as average ones. Gibara exported 1,415,000 bunches in 1895, and 1,305,000 bunches in 1896, which are also good average crops, and which for the immediate future are the only exports of this fruit likely to be realised. It may therefore be considered, says a contemporary, that the former total production of Bananas on the north coast of this province, amounting in round numbers to about 4,000,000 bunches, will now become reduced to one-quarter.

—— The Southampton Horticultural Society.—The executive of this well known southern Society, in spite of its now, in the light of its troubles, absurd prefix "Royal," and of the announcement made with respect to its proposed summer Show on July 31st, is yet an object of sincere sympathy. Its former lease at Westwood having expired, it is absolutely without a habitation, not having a place in which to hold its shows. Seeing, however, that the Borough Corporation, the custodians of the huge area of some 300 acres on the north of the town, had granted the Bath and West of England Agricultural Society leave last year to enclose some 30 acres of this common to erect needful sheds for its Show held a few weeks since, the horticultural executive, being a purely Southampton body, naturally thought that the Corporation would not be less generous in their case, and grant not 30, but about 6 acres, for the purpose of holding their Show at the end of the present month. After a good deal of equivocation, the assent was at last grudgingly given, although asked for this one season only. As a consequence, the executive have issued a schedule, made all needful contracts and engagements, and have largely advertised the Show; but it is even now, at this moment of writing, uncertain whether the Show can be held on the Common. A meeting of the Corporation will be held on Wednesday, July 14th, and a great effort will be made by a number of undoubted dog-in-the-mangerites to rescind the sanctioning resolution. It is earnestly hoped that the Corporation will not stultify itself by altering its previous decision. To do so would be indeed cruel and vindictive. The inhabitants of the town have immense areas for recreation, and the enclosure of 6 acres on the Common injures them nothing, whilst the Flower Show is with the people wonderfully popular. —A. D.

—— Fruit in Surrey.—After seeing how very moderate is the fruit crop over in the Middlesex market gardens I have been surprised to find that there are parts of Surrey where the crop of certain fruits is excellent. Thus the other day at Roehampton, looking through Dover House gardens, I saw Apples in abundance, hardly a tree being fruitless. Pears were thinner, and Plums almost nil. A day or two later, when looking through numerons gardens about Reigate, I found trees literally heavily laden with Apples in all directions. Pears were fair, Plums thin, and bush fruits plentiful. Then a day later, down in the Clandon and Merrow districts, Apples again were fairly abundant, some trees very heavily cropped. Pears fairly plentiful, Plums few, and Gooseberries and Currants in great abundance. Of these latter many bushes in the cottage gardens were almost breaking down with the weight of fruit. Such experience naturally renders it difficult to fairly estimate the probable fruit crop of the season, and the general returns are therefore looked for with exceeding interest. With a season that bids fair to be equal to the best of past seasons in vegetable, corn, and grass production, for these crops in every direction are splendid, it will be a misfortune if the fruit crop should prove to be really bad generally. So far as Strawberries and Raspberries are concerned, we know both crops have been, or are, good.—A. D.

ROYAL HORTICULTURAL SOCIETY.

EXAMINATION IN HORTICULTURE.—April 6th.

We have pleasure in placing before our readers the list of candidates in this examination in the order in which they were placed by the examiners. The report preceding the names will be found very interesting.

Examiners' Report.

To the President and Council of the Royal Horticultural Society.

Gentlemen,—We beg leave to report that we have examined the papers submitted to us—in all 184.

Of these we selected 89 as worthy to be placed in the first class, 55 in the second, and 28 in the third. The remainder (12) are not placed, the number of marks attained being below 100.

The distribution of the examinees were 169 in England, 6 in Scotland, 1 in Ireland, 1 in Wales, and 7 gave no address.

The present examination shows a very considerable improvement upon the results of that held in 1896. This will be apparent from the following comparison of percentages:—

Those not classed are only 12 in number, or nearly one-third of that last year (34).

The percentage of the third class (100 to 149 marks) has fallen from 32·2 (1896) to 15·2 (1897).

The percentage of the second class (150 to 199 marks) is nearly stationary—viz., 34·8 (1896); 29·8 (1897).

The percentage of the first class (200 to 300 marks) has made the astonishing increase from 10·5 (1896) to 48·3 (1897).

These results are most encouraging. Speaking generally, the answers are extremely well done. The information is accurate upon the whole, and the subject matter well expressed. Perhaps the "Practical Horticulture" showed, as might be anticipated, a slight superiority over the "Elementary Principles."

George Henslow.
Jas. Douglas.

The names and addresses of the successful candidates, together with the marks assigned to each, are given in the following Class List, to which is appended the questions set by the examiners:—

MAXIMUM NUMBER OF MARKS OBTAINABLE, 300

	First Class.	No. of marks gained.
*1	H. S. Langford, Horticultural College, Swanley	300
2	Miss F. M. Broade, Horticultural College, Swanley	288
2	J. H. Dick, 8, Victoria Place, Trinity, Edinburgh	288
2	F. Isted, Technical Laboratory, Chelmsford	288
2	Miss G. Webb, Horticultural College, Swanley	288
6	Miss E. Barratt, Technical Laboratory, Chelmsford	286
7	A. J. Cocke, Horticultural College, Swanley	284
8	Miss O. Field, Horticultural College, Swanley	282
8	J. I. Goodlet, Horticultural College, Swanley	282
8	H. J. Hickin, Tamworth	282
11	H. Reynolds, The Laurels, Hayle, Cornwall	279
11	J. Stone, Board School, Tamworth	279
11	Miss F. E. Worland, Horticultural College, Swanley	279
14	A. D. Hogg, Botanical Gardens, Edinburgh	276
15	F. H. Harris, Technical Laboratory, Chelmsford	270
15	W. Pilcher, Horticultural College, Swanley	270
15	Miss B. S. Watson, Horticultural College, Swanley	270
18	H. G. Rogers, Rettenden, Edmonton	267
19	C. J. Langley, Technical Laboratory, Chelmsford	264
19	E. Miller, Technical Laboratory, Chelmsford	264
19	Miss A. Morison, Horticultural College, Swanley	264
22	E. J. Allard, Botanical Gardens, Cambridge	258
22	Miss E. Hodsoll, Horticultural College, Swanley	258
22	G. W. Young, Technical Laboratory, Chelmsford	258
25	A. W. Day, Horticultural School, Holmes Chapel, Cheshire	255

* Wins the Society's silver-gilt medal and Chiswick scholarship.

26	F. J. Mason	252
26	Miss G. B. Robertson, Horticultural College, Swanley	252
28	Miss B. Allman, Horticultural School, Holmes Chapel, Cheshire	250
29	A. D. Berney, Horticultural College, Swanley	246
29	C. H. Hooper, Horticultural College, Swanley	246
29	F. M. Newton, Technical Laboratory, Chelmsford	246
29	A. W. Snipe, Tamworth	246
29	E. H. Wilson, Kew	246
33	W. Hales, 16, Gloucester Road, Kew	243
34	W. J. Flower, Horticultural College, Swanley	240
34	J. H. Jones, Board School, Tamworth	240
34	Miss F. Petty, Horticultural College, Swanley	240
34	Miss F. Potter, Horticultural College, Swanley	240
34	H. Stapley, Rose Cottage, Gatten Park Road, Redhill	240
34	G. C. Watson, 626, High Road, Tottenham	240
34	Miss E. J. Welsford, Horticultural College, Swanley	240
41	W. B. Bygrave, Royston, Herts	237
41	M. Paton, Stewarton, Ayrshire	237
41	W. R. Reader, Osmaston Manor, Derby	237
41	E. Smith, Montford, Brierfield, Burnley	237
45	C. Leeson, Wrawby, Brigg	235
45	G. Underwood, 23, Free School Lane, Leicester	235
47	A. Edwards, 47, Russell Street, Cambridge	234
47	H. Martin, Technical Laboratory, Chelmsford	234
47	Miss J. Newsham, Horticultural College, Swanley	234
47	Miss E. Vaughan, Technical Laboratory, Chelmsford	234
51	A. J. Dover, Eccleshall, Staffordshire	232
51	D. Rutherford, Tutbury, Burton-on-Trent	232
53	A. E. Burgess, Technical Laboratory, Chelmsford	228
53	O. D. Carter, Technical Laboratory, Chelmsford	228
53	F. A. Dance, Technical Laboratory, Chelmsford	228
53	H. F. Easton, Technical Laboratory, Chelmsford	228
53	W. H. Elbourn, 74, Russell Street, Cambridge	228
53	W. Lord, Milburn Gardens, Esher, Surrey	228
53	Miss M. White, Technical Laboratory, Chelmsford	228
60	J. Banting, Pontyclun, Llantrisant, Monmouth	227
60	W. J. Bell, Upper Tean, Stoke-on-Trent	227
62	F. Holt, Park View Nursery, Accrington	225
62	W. Robinson, Hawk's House, Brierfield, Burnley	225
64	C. Bishop, Board School, Tamworth	222
64	N. Collard, Horticultural College, Swanley	222
66	W. H. White, 3, Avenue Extension, Clarendon Park, Leicester	220
67	J. H. Annear, Technical Laboratory, Chelmsford	219
68	E. D. Smith, Technical School, Gravesend	217
69	Miss F. Andrews, Technical School, Gravesend	215
70	E. J. Callender, Horticultural College, Swanley	213
70	E. C. Kenney, Horticultural College, Swanley	213
72	S. G. Wilcock, Boroughbridge, York	212
73	F. K. Derbyshire, Horticultural School, Holmes Chapel, Cheshire	210
73	C. Gosling, Goring-on-Thames	210
73	W. Hunter, Great Ayton	210
73	B. G. Nettleton, Technical Laboratory, Chelmsford	210
77	H. Brook, 171, Every Street, Nelson	207
78	R. Bellerby, Askham Grange Gardens, Askham-Richard	205
78	R Francis, Rockdale, Sevenoaks	205
78	J. Read, Horticultural School, Holmes Chapel, Cheshire	205
78	H. Ward, Vine Cottage, Charing, Kent	205
82	H. W. Jackson, 60, Russell Street, Cambridge	204
82	A. C. Pickford, Horticultural College, Swanley	204
84	H. Baker, Castle Ashby, Northampton	200
84	D. R. Hicks, Sandon, Stone, Staffordshire	200
84	J. Laws, 3, Walnut Tree Place, Wimbledon	200
84	J. Slack, Horticultural School, Holmes Chapel, Cheshire	200

Second Class.

1	W. Sproston, Great Haywood, Staffordshire	198
2	E. W. Ashley, Botolph Claydon Board School, Winslow	197
2	W. H. Kidwell, Colwich, Staffordshire	197
4	G. W. Hunt, South Knighton Road, Leicester	195
5	F. A. Guilliam, Palace Gardens, Gloucester	192
5	G. B. Pratt, Technical Laboratory, Chelmsford	192
7	C. H. Burden, Horticultural College, Swanley	189
7	A. Fairfield, Glascote Heath, Tamworth	189
7	J. W. Thompson, Holywath Cottage, Coniston	189
10	W. Cranfield, 3, Coronation Street, Cambridge	186
10	Miss C. M. Hull, Technical Laboratory, Chelmsford	186
12	D. P. Bass, Bednall, Staffordshire	185
12	J. J. Cooper, School House, Walsall	185
12	J. Jefferey	185
12	Miss M. Mackenzie, Horticultural School, Holmes Chapel, Cheshire	185
12	A. W. A. Shaw, Great Ayton, R.S.O.	185
12	G. Wicking, Clarendon Park, Leicester	185
18	U. Warren, 20, Woodville Terrace, Darwen	182
19	Miss B. Hay, Horticultural College, Swanley	180
19	J. W. Heweson, Great Ayton	180
19	J. Hardy, Horticultural School, Holmes Chapel, Cheshire	180
19	Miss E. Watts, Horticultural College, Swanley	180
19	J. Wilkinson, 73, Devonshire Street, Accrington	180
24	W. Ingram, Board School, Kettlebrook Road, Tamworth	177
24	J. Thompson, Horticultural College, Swanley	177
26	W. Boyer	175
26	A. Cutter, High Street, Cheshunt, Herts	175
26	E. Semper, Scawby Hall, Lincoln	175
26	A. Taylor, Great Ayton	175
30	W. G. Hatch, 2, Windsor Road, Southend-on-Sea	174
30	W. J. Reed, Technical Laboratory, Chelmsford	174
30	W. Kenny, Horticultural College, Swanley	174
33	J. J. Cooper	171
34	E. Timson, Leicester Frith, Leicester	168
35	A. Bennett, Technical Laboratory, Chelmsford	167
36	W. Jennings, Horticultural School, Holmes Chapel, Cheshire	166
37	S. Laskey, Castle Hill Gardens, Egham	165
37	R. Lyon, Greenhall, High Blantyre	165
37	A. D. Morris, Barrowmore Hall, Chester	165
37	A. Shaw, Broad Royal Head, Staincross, Barnsley	165
37	H. Spooner, Technical Laboratory, Chelmsford	165
42	J. Benson, Technical Institute, Aughton	160
42	W. Burgess, Bredon Norton, Tewkesbury	160
42	W. Bygrave, Barkway, Royston, Herts	160
42	Jos. Poulter, Clayton-le-Moors, Accrington	160
46	F. Lazenby, Botanic Gardens, Cambridge	159
47	S. Barritt, Technical Laboratory, Chelmsford	156
47	J. Kent, Tamworth	156
47	S. S. Mundy, Tamworth	156
50	J. Barkham, Longford House Gardens, Haven Street, Ryde	150
50	L. Farmer, Horticultural College, Swanley	150
50	W. Godsmark, Great Ayton	150
50	G. Hallam, Wellingore, Lincoln	150
50	E. F. Jeffrey, Horticultural College, Swanley	150
50	H. E. Wainright, Tamworth	150

Third Class.

1	H. Owen, Weddell	145
2	H. Crawley, Grange Lodge, Kippington, Sevenoaks	140
2	C. Cundy, Sudbury, Suffolk	140
2	A. Osborn, Sonning	140
2	W. Goddard, The Lodge, Knighton Hall, Leicester	140
6	L. Hales, Horticultural College, Swanley	138
7	G. Gay, Doncaster	135
7	J. Prescott, Technical Institute, Aughton	135
9	R. Hudson, Swaffham, Norfolk	130
9	R. Jones, Technical Institute, Aughton	130
9	G. M. Stuart, Eden, Banff	130
12	M. Gravestone, Harris Institute, Preston	125
12	G. J. Goodall, Streathy, Oxon	125
12	J. Chas. Tate, Bulmer, Welburn, Yorks	125
15	H. Broadbent, Park Hall, Evesham	120
15	W. Grantham, Technical Institute, Aughton	120
15	J. H. Jones, Horticultural School, Holmes Chapel, Cheshire	120
15	Thos. Windle, 9, Turnford Villas, Turnford	120
19	C. Rhymes, 28, Cottage Grove, Surbiton	117
20	Th. Cheesman, Fairmile Hatch, Cobham	115
20	R. Crichton, Sutton House, Baldoyle, Dublin	115
22	E. R. Christianseu, Cheshunt Street, Cheshunt	110
22	W. Hind, Technical Institute, Aughton	110
22	O. Burley	110
25	G. W. Brookbank, Wimbledon	108
25	G. C. Farrant, The Cottage, Stoke D'Abernon, Cobham	105
25	C. J. Illsley, The Pitt, Cobham	105
28	T. H. Smith	100

QUESTIONS UPON WHICH THE EXAMINATION WAS BASED.

Eight questions only to be answered; four from Division A and four from Division B.

Division A.—Elementary Principles.

1, What are the three chief mineral ingredients of a soil? Name garden plants or shrubs which delight in each kind respectively.

2, What differences may be expected from growing unripe, perfectly ripe, and long-kept seeds respectively?

3, In transplanting, why is it necessary to preserve the extreme and most delicate tips of the root-fibrils?

4, Why does covering Rhubarb redden and lengthen the leafstalks and stop the growth of the blade?

5, Describe the structure of a Hyacinth bulb, and explain why the Dutch method of slashing or hollowing out the bottom induces the formation of bulbils?

6, What are the essential conditions for successful grafting?

7, How does the structure of a Plum differ from that of an Apple? Explain the origin of each.

8, Name the Natural Orders or Families to which the following plants belong:—Cyclamen, Rhododendron, Clematis, Stock, Pelargonium, Borage, Potato, Onion, Parsley, and Turnip.

Division B.—Horticultural Practice.

9, Explain the process of cross-fertilisation in garden flowers, and give examples of both hardy and exotic plants that have been improved thereby.

10, After seed of the Chinese Primula has been ripened describe the method of sowing and subsequent treatment of the plants up to the period of their flowering.

11, What is the native country of the Celery plant, and under what conditions does it grow naturally? Give a short account of its culture, such as time of sowing and subsequent treatment.

12, When and under what conditions is Seakale found in a wild state? Describe its culture, and state the time of the year it is in use.

13, Where is the common Asparagus said to be found in a wild state? State all you know of its culture, and for how long a period it may be had in use.

14, Give an account of the Apple. How are the trees propagated? State what you know of its culture, and the diseases to which the trees are liable, and the remedies. Name one good cooking variety for use in each month from August to April inclusive.

15, State all you know about the Raspberry. What sort of soil is best adapted to its culture? Give method of training and pruning, and the best varieties to cultivate, both yellow and red.

16, Give an account of the usual method of Gooseberry culture adopted in gardens; and also the Lancashire method to obtain prize fruit. Name six of the best prize varieties, and six best for ordinary garden culture.

Rose Show Fixtures for 1897.

July 15th (Thursday).—Norwich (N.R.S.) and Helensburgh.
,, 22nd (Thursday).—Halifax, Trentham, and Bedale.
,, 23rd (Friday).—Ulverstone.
,, 27th (Tuesday).—Tibshelf.
,, 28th (Wednesday).—Chester.*
,, 31st (Saturday).—Liverpool.*

* Shows lasting two days.

Three New Roses.

Roses become more and more numerous every year, but such is the enthusiasm displayed in their culture that no matter how many there are, they will, if of good quality, quickly secure supporters. Amongst the comparatively recent introductions that promise to become popular are Madame Abel Chatenay, Beauté Lyonnaise, and Souvenir de Madame Eugène Verdier, of which Mr. Charles Turner, Royal Nurseries Slough, sent us the photograph from which our illustration (fig. 9) is reproduced. Each variety is of great beauty, and is classed by the raisers as Hybrid Tea. Madame Abel Chatenay, which is shown on the left, is a handsome Rose with flowers of a rosy carmine suffused with salmon and buff. The flowers are of fine shape, especially in the bud state. At the top of the photograph is Beauté Lyonnaise, an almost pure white, full and globular flower, which is deliciously fragrant, while at the bottom we have Souvenir de Madame Eugène Verdier. This is a fine Rose, the colour of which is white suffused with saffron, and the bloom is of good shape. The blooms shown were taken from pot plants in Mr. Turner's nursery, and the flowers may vary a little in colour from plants in the open ground.

Medea, Maréchal Niel, Maman Cochet, and Muriel Grahame.

In the last number of the Journal (page 23) Rev. D. R. Williamson repeats his opinion that Medea is the equal of Maréchal Niel. He does not state it as his opinion, but as a matter of fact. It is my opinion, and I have grown and shown good blooms of Medea, that it is not fit to hold a candle to Maréchal Niel, which is far and away the finest yellow Rose known.

In his interesting report of the Hereford Rose Show "The Herefordshire Incumbent" alludes (page 29) to Maman Cochet as "long in bud, poor habit." This will surprise the many admirers of this splendid Rose, which if it were not rather late in blooming I should expect to see at the head of Mr. Mawley's analysis, for most of us find it a very good grower, of thoroughly vigorous habit.

I am in hopes that Mr. Lindsell has had a photograph taken of his grand bloom of Muriel Grahame, exhibited at the Crystal Palace, as it was quite worthy of being ranked with Mr. Burnside's Cleopatra and somebody else's Madame Cusin, and other specimen blooms of note. The shape and texture were perfect, and it looked as if it were capable of even further development.—W. R. Raillem.

Rosa indica var. sanguinea.

Of the many varieties of Rosa indica none is prettier or makes a more charming effect than this. Like most of the class, it is an almost perpetual flowerer, and can be had in good condition, outside, from early in May until October. The flowers are blood red, semi-double, and 1½ to 2 inches across. These, however, are not the only attraction, for the young foliage is of a beautiful bronze, and adds greatly to the effect.

Like most of the class, it will pass through ordinary winters unharmed. In exceptionally severe winters, however, it is cut to the ground, but springs up again as warmer weather comes. As cuttings can be rooted with the greatest ease it is advisable to keep a fresh stock of plants growing, as after three or four seasons the old ones usually deteriorate. By rooting cuttings in July and potting them singly into 3-inch pots, then in February moving into 5 inch, good plants may be had for planting in May. They are not so much trouble through the winter as ordinary bedding "Geraniums," and if grown as bedding plants they will be found to give as great, if not greater, satisfaction than many of the plants usually used for the purpose.

The brilliant colour of the flowers, together with the freedom with which they are produced and the little trouble necessary to insure success, should make this one of the most popular of bedding Roses.—W. D.

Comments.

I have often noticed in passing through life how very seldom alterations of dates for any event are advantageous, and certainly in the case of the National Rose Society this idea has been strengthened. Twice during its career have dates for shows been altered, and in both cases with disastrous results. The exhibition at Chester in 1892, and that of Portsmouth in 1897, were altered at the request of the local Committees, and under such circumstances the parent Society has only to give way. In the case of Chester I believe it was utterly uncalled for, and the result was, that while the day originally fixed was very fine, that to which it was altered was as wet and unpleasant as it was possible for it to be.

As far as Portsmouth was concerned it was of course unavoidable. The day at first decided on was the one after the Jubilee celebration in London, and everyone felt that to hold a show on the day after a Bank Holiday, and such a holiday, when all the world was in an uproar, was quite impossible. I suppose the local Committee had its reasons for putting it back instead of forward, but at any rate the 23rd was a fine day, and the 18th, to which it was altered, was boisterous and wet; indeed, had it not been for the exceptionally strong manner in which the tents were secured the York catastrophe would have been repeated. There were other causes also which interfered with the exhibition. The season was a late one, and consequently putting the show back was unfavourable to it; and then again the local Committee was unfortunate in losing the services of a gentleman who for twenty years and more had managed the Ryde Show, but who through domestic affliction was unable to be present.

I may add yet another item that was unfavourable; the show was held in two tents instead of one large one, and though they were contiguous to one another, it created a difficulty which is always experienced in such cases. One of the tents was devoted to the exhibition Roses, and the other mainly to garden Roses, and when an exhibitor is wanted in one of these he is sure to be in the other. All this militated against the success of the arrangements, and though Captain Ramsay exerted himself to the utmost, complaints were made that the judging did not commence at the time it was announced to do; in fact, this is nearly always the case at all shows, and the fault is generally not with the executive, but with the exhibitors. With these unfavourable circumstances it is not to be wondered at that the exhibition was the smallest in extent and, I think, the poorest in quality that the National has ever held.

Many of the leading exhibitors, both professional and amateur, were absent. Neither Messrs. Harkness & Sons, nor the East Anglia amateur Tea growers, Messrs. Foster Melliar, Orpen, Berners or Page Roberts were there; neither was the champion grower, Mr. E. B. Lindsell. The two classes which most interested both exhibitors and visitors were those for the cup presented by Capt. Ramsay for twelve blooms, and that for the Prince Memorial cup for eighteen Teas. In the former the prize was given to a beautiful box exhibited by Mr. A. Tate of Downside, Leatherhead, and I think it was impossible that such blooms could be shown without protection of some sort having been given to them. This stand was remarkable also for containing the two medal blooms in the amateurs' division for the best H.P. and the best Tea, the former being won by a beautiful but not very large bloom of Mrs. John Laing, and the latter for the best bloom of Madame de Watteville I ever saw staged. The Prince Memorial cup was won by Alex. Hill-Gray, Esq., Beaulieu, Bath, with a fine stand of eighteen blooms of fair size and excellent quality. It was anticipated that there would have been much keener competition in this class, but for the reasons I have already mentioned many failed to put in an appearance, and the other prizes were awarded to almost unknown exhibitors.

It was hardly likely that at so early a date and in such a season that there would be many noticeable flowers, and certainly there is nothing in the newer varieties which calls for special notice. There were good blooms of Medea, especially considering that it is a Rose that requires a warmer season. White Lady, which is a creamy white sport from Lady Mary Fitzwilliam, was shown in fair condition. Golden Gate is another pleasing Tea, and was placed in several stands. It is not, as persons might be inclined to think from its name, a yellow Rose, but is a creamy white of good form. Captain Hayward is a Rose of brilliant colour, though perhaps not quite so full as one might wish, yet cannot be dispensed with, and appeared in several stands.

It is not, however, too much to say that the chief features of attraction were the collections of garden Roses. They were, as I have said, in a separate tent, and it was a great pity that more space was not awarded to them. If more room had been left between the boxes they would have made a better display. The Committee of the N.R.S., being afraid that the late season and the early date would militate against the exhibition Roses, had at the last introduced some extra classes which helped to fill up the tent. There were but few competitors in any of the classes, and the chief interest was centred in the large class of thirty-six for nurserymen, where Messrs. Cooling & Sons of Bath carried off the principal prize. Amongst their flowers I noticed Marquis of Salisbury, most brilliant in colour; W. A. Richardson, which in its way has not been beaten; Bardou Job, very bright; Macrantha, pure white; the true York and Lancaster, not the Village Maid or Gloria Mundi which so often do duty for it; Isabella Sprunt, a bright yellow; Commandante Beaurepaire, a brilliantly striped Rose; Anne of Gierstein, one of Lord Penzance's Briars; Gloire des Polyanthas; Homère and other well-known favourites. There were beside these two not usually seen, Lucida Plena, a double variety of the pretty old Lucida, and Purity, a seedling

raised by Messrs. Cooling & Sons, most floriferons and likely to prove a most usefnl flower both for garden purposes and exhibition.

In the amateur division Mr. A. Tate of Leatherhead occupied the chief position, and amongst his flowers were Alister Stella Grey, which was very well shown, and is an exceedingly pretty garden Rose, very free flowering and very vigorous. There was also a good bunch of the Crested Moss, a Rose which is not very often seen and always attracts people by its curious buds. Mr. Campion of Reigate and Miss G. Carter of Ryde were also successful exhibitors. People sometimes wonder that there are not more exhibitors in this class, but the flowers require a great deal of trouble in bringing them to the exhibition tent.

There are one or two regrettable incidents, one in which Messrs. Frank Cant & Co. were disqualified for a Rose, unnamed, and marked as a sport from Susanne Marie Rodocanachi. It was only last season that a somewhat similar case occurred, and the Committee decided that it was irregular; the sport may not be a fixed one, and may revert to the type. The other case was that of a local exhibitor, where duplicates were shown, two blooms of Charles Lefebvre being in the stand and one bearing the name of Camille Bernardin. The exhibitor stated that she had received it from the grower of whom she purchased it under the name of Charles Lefebvre, and consequently the case was a very hard one, but still the Committee can have but one rule by which to go, however hard its application may seem at times

The Judges and exhibitors were hospitably entertained in the beautiful new Town Hall, which adjoins the park where the Exhibition was held, by Mr. Alderman Evans, who introduced the happy innovation of dispensing with toasts; in fact everything was done that lay in the power of the local people to remedy those evils over which they had no control.—D., *Deal.*

FIG. 9.—THREE NEW ROSES.

BRIEF NOTES ON ALPINE FLOWERS.

(*Continued from p.* 11.)

DIANTHUS ALPINUS.

THE dwarf Dianthi are deservedly favourites with growers of alpine flowers, and a good collection of such plants generally contains at least a proportion of these Pinks. Some growers are rather unsuccessful in retaining them for more than a year or two, and the species under notice is one which gives some trouble to these cultivators. I do not pretend to offer a panacea certain to remove these difficulties, but if one can state the conditions under which Dianthus alpinus succeeds in some gardens it may be a help to those who have hitherto failed with it.

In order to raise a satisfactory stock of plants to begin with it will be found a good plan to obtain a packet of seeds. Seedlings are, as a rule, more vigorous than plants from cuttings or divisions. Seeds can be procured from some seedsmen, and with proper treatment germinate quickly and satisfactorily. Take a pot or pan and fill it nearly half full of drainage, composed of broken pots properly laid so as to allow free drainage. Fill up to within an inch of the top of the pot with light soil composed of equal parts loam and leaf mould, with a good dash of silver sand thoroughly mixed. Press the soil firmly so as to make it level, but not too hard.

On this sow the seeds thinly, and cover these with about a quarter of an inch of similar soil, sifted through a fine sieve. Press this gently down with a flat piece of wood or metal, water gently, and place the pot or pan in a cool shady frame or in a cold greenhouse. Take care that the surface of the soil does not become too dry. To prevent this, without giving too much water, it is a good plan to cover the pot with paper, removing this gradually as soon as the seedlings appear. When these make their appearance they ought to have air and light, but need to be shaded from strong sun. As soon as large enough to handle the seedlings should be pricked out about an inch apart in other pots or boxes filled with similar soil. When a little larger they may be planted out in the places they are intended to occupy. Care must be taken to prevent the young plants from being destroyed by snails or slugs, which are often destructive to both young and old plants.

This Alpine Pink succeeds best in a rather gritty soil, with a good admixture of peat or leaf mould and sand. Here it is found to thrive best on a rather elevated terrace of the rock garden, and where it has full exposure to the S., S.W., and W. It is thriving admirably in this position, whereas on lower and moister terraces it could not be persuaded to live long after flowering. It has also been seen to do well only a little above the ordinary level, but facing due south, and in dry gritty soil, in front of a greenhouse. It appears to be partial to dry soil in the climate of Great Britain, and provided the arch enemies—the slugs—are kept from it, there should be little difficulty in many gardens if this advice is followed. This note is long enough to be hardly in keeping with the word "brief" at the head of these notes, but the beauty of this exquisite little flower warrants one in straying somewhat from our usual in speaking of its requirements. Its beautiful deep rose flowers with crimson spots, and produced so freely on the dwarf stems as to cover the foliage, are worthy of our highest praise amid the rival claims of the gems of the alpine flora. So charming a flower deserves full notice.

ONOSMA ALBO-ROSEUM.

It is unfortunate that this pretty and distinct alpine is even less amenable to cultivation in our climate than the more showy O. echioides, which was spoken of on p. 10, and illustrated on the following page. Whatever may be the reason, it usually succumbs after having been grown for a year or so, even if protected overhead from the winter's rain. The leaves appear to dry up gradually, and the plant in time becomes weaker until it finally dies off. One would like to be able to say that this can be avoided, but so far as we know the plant can only be depended upon as a biennial, to be raised from seed, which is not readily obtainable. Sometimes young, fresh shoots may be taken off with a heel and struck in a similar manner to those of O. echioides; but these are seldom produced, and cannot be relied upon, so far as it has come under the writer's observation in his own garden and elsewhere.

O. albo-roseum is much less robust in its habit of growth than O. echioides, and its pretty white flowers have a tendency to hide themselves more than those of the better known species. Altogether it cannot be said that it is a satisfactory plant, nor one to be recommended to the ordinary grower of alpine flowers. The flowers are similar in form to those of O. echioides, and the foliage, which is lighter and more greyish in colour, is also hairy. O. albo-roseum is a native of Asia Minor, &c.

SAPONARIA CÆSPITOSA.

It is not to be supposed that high-priced or rare plants are necessarily the best of those in the genera to which they belong. Unless in the case of newly introduced plants a high price is generally an indication that the species offered is difficult of propagation, or is not very satisfactory under cultivation. This little Soapwort may be included in the latter class, and those who wish to have a satisfactory representative of the Alpine Saponarias cannot do better than grow S. ocymoides splendens, although this also presents difficulties in some gardens.

The one under notice comes from the Pyrenees, and its defects in gardens are its shy flowering and liability to destruction from slugs. I grew it for several years, but had only the pleasure of seeing a flower

to two occasionally during that time. This will not prevent some from trying it, and, for the benefit of these it may he said that this "Tufted Soapwort" is a neat habited plant, with its linear leaves in tufts like those of a dwarf Thrift. The flowers, should they he formed, may be expected to appear in June or July, and are produced a few together in a cluster on very short stems. They are bright rose in colour. S. cæspitosa likes a sunny airy position in sandy soil. It is increased by division or by seed.—ALPINUS.

(To be continued.)

HORTICULTURAL SHOWS.

FARNHAM.—JUNE 30TH.

THE twenty-seventh annual Show of the Farnham Amateur Rose and Horticultural Association was held in the Gardens of Farnham Castle on Wednesday, June 30th, by the kind permission of the Bishop of Winchester. The Show was certainly one of the largest and best that has ever been held by the Society, and the four large tents were closely packed with exhibits, which even overflowed on to some staging placed under the Castle wall.

In the open classes for Roses there were some splendid blooms exhibited, Mr. Taylor of Hampton being first in the class for twenty-four; Mr. West, Reigate, second; and Mr. Bide, Farnham, third.

It is, however, in the members' classes that one best sees how strong a hold Rose growing has taken in the neighbourhood, for in the class for the Association's challenge cup there were as many as twelve competitors. Mr. Knight, Leigh House, one of the oldest and most successful members of the Society, was first, with Mr. Anderson of Waverley Abbey, an equally successful member, and donor of the present challenge cup, second.

Mr. Knight also showed the best bloom in the members' classes in a "Her Majesty," Mr. Anderson's Catherine Mermet being the best Tea. The best bloom in the whole show was, however, found in the open classes, an Ulrich Brunner, shown by Mr. West.

If Roses were good at the show, herbaceous plants were better, and the two large exhibits, not for competition, made by Mr. Prichard, Christchurch, Hants, and Messrs. G. Jackman & Co., Woking, were quite the grandest feature of the show, completely filling as they did one of the tents. The local exhibits of hardy flowers were also good.

The arrangement of flowers in vases and haskets has always been noteworthy at this show; and this year, though hardly as many as last, the tasteful decorations showed that the hands of the ladies of the district had not lost their cunning. In groups of plants, General Marsack was first with a fine arrangement, containing many Orchids and other good things, the Bishop of Winchester being second with a group nearly as good. Strawherries were not so good as last year, and the same may he said of Potatoes and Peas, but there were some fine dishes of Tomatoes shown.

During the afternoon the mounted band of the Royal Artillery played on the lawn of the Castle, and at five o'clock the prizes were distrihuted by Mrs. Davidson, the wife of the Bishop of Winchester.—M. P. T.

HANLEY.—JULY 2ND.

WELL done, Hanley! may be exclaimed on this the first attempt of the busy Staffordshire town to hold a flower show, and the promoters of it are greatly encouraged by the satisfactory results that are forthcoming. The show was held in the new park, which is 85 acres in extent, with all the modern conveniences, grand buildings, a fine lake, and well-kept grounds. Five years ago this place was a disused fen and swamp, now it is a most enjoyable place for the recreation of the public. One can hardly imagine in the densely populated district to find such an extensive place. There are many difficulties also to overcome in gardening, for the park is surrounded by manufactories. Various styles of gardening suitahle for the district are well carried out, over 200,000 plants of various kinds having been bedded out. The grounds are hilly, there are fine terraces, and the place is greatly appreciated by the inhabitants.

A better arranged show we have never seen for a first one. Four enormous marquees were arranged side by side, all being provided with that grand illuminant at night, the electric light. This was a great novelty and happy introduction; the plants, flowers, and fruit looked remarkably well under the strong light. Water was also laid down in each tent, while in the Secretary's office a post office and telephone were introduced, to the great satisfaction of many. To Mr. Joseph Kent, the Superintendent, we offer our congratulations upon the splendid arrangements he made for the exhibitors; everything was well studied and as well carried out. The show was a great success in every way; over 20,000 people paid admission the first day, and considerably more, we should say, the second day. There is a most promising future for this Society, which we trust it may long live and prosper.

The principal feature at most shows now are the groups arranged for effect. It was so here. With 300 square feet groups there were five competitors. Various strong opinions were freely expressed by many regarding the awarding of the first prize, which went locally to Messrs. Jenkinson & Son, Newcastle, Staffs, but many persons thought the second should have had the honoured position—viz., that shown by Messrs. J. Cypher & Son, Cheltenham. The prize was £20 and a special "heraldic porcelain flower centrepiece," presented by Mr. W. H. Goss. In the class for a group of Orchids arranged for effect, in space not exceeding 100 square feet, Messrs. W. Thompson, Stone, Staffs, and Messrs. J. Cypher & Son were the successful competitors. These famous exhibitors also took premier honours for specimen plants in flower, Palms, Ferns, and Orchids. Other successful exhihitors in the above classes were the Duke of St. Albans, and Messrs. C. H. Wright, Oswestry; W. Vause, Leamington; F. Maddock, Alsager; and A. S. Dix, Skelton.

Roses were admirably represented, as will be understood from the prize list as under. Forty-eight distinct varieties.—First and special (presented by Messrs. Beck & Moss), Messrs. A. Dickson & Son, County Down, Ireland; second, Messrs. Harkness & Sons, Bedale, Yorkshire; third, J. Townsend & Sons, Broadheath, Worcester. Thirty-six distinct varieties, three blooms of each variety.—First and special (presented by Mr. Pennington), Messrs. Harkness & Sons; second, Messrs. J. Townsend and Sons; third, Messrs. A. Dickson & Sons. Twenty-four distinct varieties.—First, Messrs. J. Townsend & Sons; second, Messrs. A. Dickson & Sons; third, Messrs. Harkness & Sons. Twelve distinct varieties.—First, Messrs. A. Dickson & Sons; second, Messrs. J. Townsend and Sons; third, Messrs. Harkness & Sons. Twelve distinct Teas, three blooms of each.—First and special (presented by Mr. R. Hastings), Messrs. J. Townsend & Sons; second, Messrs. A. Dickson & Sons. Decorative arrangements of Roses, not exceeding 12 feet by 5 feet.—First and special (presented by Mr. J. R. Howlett), Messrs. M. Jenkinson & Sons; second, H. Chandos Pole Gell; third, Messrs. J. Townsend and Sons. Twelve Hybrid Perpetual, one variety.—First, Messrs. A. Dickson & Sons; second, Messrs. J. Townsend & Sons; third, Messrs. Harkness & Sons.

Fruit and vegetables were excellently represented. Good collections of fruit were staged; black Grapes were very good, but many bunches of white Grapes were not finished. It seems a pity to cut Muscats so green, though the bunches were very fine. The prizes in the chief fruit were adjudicated in the following order:—Collection of nine dishes of fruit.—First and special (presented by Messrs. Bratt and Dyke) and second, divided between the Earl of Harrington and Lord Bagot; third, Duke of St. Albans; fourth, Earl of Carnarvon. Two bunches Black Hamburgh Grapes.—First, Lord Bagot, Rugeley; second, Earl of Harrington, Derby; third, Alderman Ridgway. Two bunches black Grapes, any other variety.—First, Earl of Carnarvon; second, Lord Bagot; third, H. H. France Hayhurst, Wellington. Two bunches White Muscat Grapes.—First, Lord Bagot; second, J. Bratton; third, T. Bolton. Two bunches of Grapes, any other variety, white.—First, Earl of Carnarvon; second, Lord Bagot; third, J. C. Waterhouse. Six Peaches.—First, Mrs. Meakin, Cresswell Hall; second, Duke of Sutherland; third, C. H. Wright. Six Nectarines.—First, Earl of Carnarvon; second, Duke of Sutherland; equal third, Lord Bagot and Mrs. Meakin. One Melon, green-fleshed.—First, H. H. France Hayhurst; second, B. Fitzherbert, Swynnerton Park; third, J. C. Waterhouse. One Melon, scarlet-fleshed.—First, Duke of St. Albans; second, Duke of Sutherland; third, Lord Bagot. In the class for a collection of nine dishes of vegetables, first and special (presented by Mr. J. G. Fenn, Stoke-on-Trent) Lady Guest; second, Earl of Carnarvon; third, H. H. France Hayhurst; fourth, C. H. Wright.

Commendable and successful endeavours were made to encourage school children to grow plants and flowers, and exhibit bouquets. This section was under the patronage of a special Committee, with the Mayoress as President. The object of the Committee was, as far as possible, to encourage, especially amongst the poorer portion of the inhahitants, a love of flowers, and the knowledge and method of their cultivation. Subscriptions, limited to 1s. each person, were invited, and these were devoted to the purchase of prizes. Rooted cuttings were supplied to the children who applied for them by Mr. Kent, the donors being Messrs. Wallis of Keele, Roherts of Oswestry, Bolas of Wirksworth, and Hill of Spot Acre, whilst Mr. R. Sydenham, of Birmingham, gave a large quantity of seeds. Numerous prizes were forthcoming, and the result was a very successful show, in which great interest was taken. There were over 350 entries, and the exhibits were excellent in quality. The Mayor of Hanley, M. Tunnicliffe, Esq., opened the show, and also presided at the luncheon. In all respects the exhibition appeared to be a gratifying success.

DISS.—JULY 6TH.

WANTED, by a gentleman beginning to call himself elderly, and obliged to do all his work himself, a nice quiet Rose show, in a secluded country spot, where he can escape such severe competition as is to be found in the company of Messrs. Orpen and Pemberton. Diss seemed to answer the advertisement, but things are not always what they seem. The show was held in the Rectory grounds, which are conveniently close to the station, and moreover have the reputation (not lost in this instance) of securing fine weather for the Rose show.

In the trade class, thirty-six Roses, Mr. B. R. Cant was easily first with a fine stand. His most remarkable Rose was a magnificent bloom of Luciole, wonderful in size, shape, and colour. Soft as this Rose is, with not many petals, it often "stands" well, and I believe has generally been in Mr. B. Cant's seventy-two at the Palace. It ought, I think, to be restored to the N.R.S. list of exhibition Roses. A grand bloom of Mrs. Sharman Crawford, with good examples of La Boule d'Or and Comte Raimbaud, were also here. Messrs. Frank Cant & Co. were second, some way behind, but a fine specimen of Victor Hugo, which has been good this year, was shown by him.

In the amateurs' class, of twenty-four Roses, for the challenge cup in memorial of Mr. Frere, Mr. Orpen was a good first, his magnificent Teas and neat method leading him to a decided victory. Comtesse de Nadaillac. Cleopatra, Maman Cochet, Madame Cusin, and Kaiserin Augusta Victoria were among his best. Rev. A. Foster-Melliar was

second, his best Roses being Charles Lefebvre, Mrs. Paul, and Horace Vernet. Rev. J. H. Pemberton third, his best being Charles Lefebvre (which beat Mr. Foster-Melliar's Rose of the same variety by a shade for the best amateur H.P.), and a good example of Charles Gater.

For twelve Teas (amateurs), Rev. F. Page Roberts was first, with good specimens of Ethel Brownlow and Catherine Mermet. Mr. Orpen was not more than a point behind, showing neatly and cleanly as usual. Mr. Foster-Melliar was third, his Souvenir d'Elise gaining the prize for the best Tea, as it will when perfectly shaped.

Mr. Page Roberts was first again with twelve Roses, showing a good Horace Vernet. Mr. Frank Cant showed some interesting garden Roses. The herbaceous classes were well filled—as they always are at this show, and the five dinner-table decorations created a good deal of interest. Some people may sneer at these classes (dinner-tables), but I am of opinion that they have done a great deal of good. I can see a very large advance in taste and grace in these matters during the last fifteen or twenty years, and I give these classes not a little credit in art education.

IPSWICH.—July 7th.

This show was held in the Upper Arboretum, and was favoured with fine weather and a good company. The Secretary, Mr. Archer, was absent through indisposition, but things worked fairly smoothly with the help of an energetic Committee.

In the trade classes Mr. B. R. Cant was first for thirty-six, Susanne Marie Rodocanachi, Horace Vernet, and Duchesse de Morny being among his best. D. Prior & Son second, some way behind, with a grand Maréchal Niel, rather "altered in character," and good specimens of Horace Vernet, Mrs. J. Laing, and Her Majesty. Mr. Green of Horkesley, the new Colchester professional, was third.

In twelve trebles Mr. B. R. Cant was first, showing Her Majesty and Mrs. John Laing well. Messrs. Prior & Son were not far behind, they, too, showing Mrs. J. Laing in good condition. In six H.P.'s of a sort Messrs. Prior won and Mr. Green was second, both with Mrs. J. Laing. In six Teas of a sort Messrs. Prior were very easily first with Maman Cochet, Mr. Green following at some distance with Marie Van Houtte. In twelve Teas the pointing was very close, two fine blooms, Innocente Pirola and Maman Cochet, giving Messrs. Prior the premier position over Mr. B. R. Cant, who had Cathorine Mermet and Madame Cusin in good order.

In garden Roses Mr. Green was first, Hon. W. Lowther of Campsea Ashe second, and Messrs. Prior third. The latter should hardly have got even the third place, for Madame de Watteville, well thinned, can scarcely be called a garden Rose, even under elastic conditions.

In the amateurs' classes there was not quite such high pressure competition, and a certain person or persons breathed more freely, and seemed generally more at ease. For twenty-four Rev. A. Foster-Melliar was first, Victor Hugo and François Michelon being among his best; Rev. H. A. Berners second, showing evident signs of the end of the season. In six trebles the position was reversed, the second prize stand being rough and coarse. In twelve Roses Rev. A. C. Johnson was first, Mr. Warnes of Eye second, and Mr. Berners third.

For twelve Teas Mr. Foster-Melliar was first with a good stand, Maman Cochet and Maréchal Niel being perhaps his best; and Mr. Berners second. The same order was observed in six H.P.'s of a sort, Mr. Foster-Melliar being first with La France, Mr. Berners second with Marchioness of Londonderry, and Mr. Haines third with Her Majesty. For six Teas of a sort Mr. Berners was easily first with Maman Cochet, Mr. Foster-Melliar second with Comtesse de Nadaillac, and Mr. Warnes third with Souvenir de S. A. Prince. In six Teas, distinct, Mr. Warnes was first, and Mr. Johnson second. There were two classes of dinner tables, some nine or ten being shown by amateur ladies, but they should remember that in the opinion of some judges all coloured drapery is objectionable, and ribbons are detestable.

TUNBRIDGE WELLS.—July 7th.

This, the thirty-ninth year of the above Society, was a really good show as regards Orchids, Roses, and stove plants. Fruit fell off very much, and there was also a decided decline in the number and quality of floral designs.

In the open class for four stove and greenhouse plants Mr. N. Turner, gardener to J. A. Le Lacheur, Esq., The Wilderness, Tunbridge Wells, beat Mr. J. Mason, gardener to H. J. Wood, Esq., Tunbridge Wells. Mr. S. Pope, gardener to J. J. Barrow, Esq., Holmwood, was well ahead for ornamental foliage plants, also for four and six stove and greenhouse plants in bloom, but was beaten by Mr. J. Mason for six ornamental foliage plants in the local classes. Mr. L. Dupond was first for single, and Mr. C. Dunk for double Begonias. One of the features of the show was the grand Caladiums from Mr. N. Turner.

Groups were good again, the first and second going to Mr. J. Howes, gardener to W. Cobb, Esq., Dulcote, and Mr. J. Mason. Orchids were excellent, especially Epidendrum vitellinum majus, Lælia tenebrosa, Cattleya Mendeli, Miltonia vexillaria leucoglossa, and Cypripediums Parishi and bellatum from Mr. Howes.

Roses were the main feature in the cut flower division, Messrs. F. Cant & Co., Colchester, beating Mr. G. Mount, Canterbury, in the classes for forty-eight distinct, and for twelve Teas or Noisettes. The N.R.S. bronze medals were awarded to Duchesse de Morny and Alfred Colomb. Mr. C. J. Salter, gardener to T. B. Haywood, Esq., Reigate, and Mr. Harris, gardener to E. M. Bethune, Esq., Horsham, were the most successful competitors among amateurs. Mr. G. Elwes, gardener to Major F. Luteridge, was the chief winner in the local division.

For herbaceous cut flowers Mr. H. Ware, gardener to Rev. J. Tillard, Penshurst, was ahead; Mr. T. Portnell, gardener to Sir A. Lamb, Bart., Battle, winning for a collection of stove and greenhouse cut flowers. Mr. F. Webber, Tonbridge, was first for a wreath, for sprays and buttonholes. Mr. S. Cooke, gardener to D. B. Crawshay, Esq., Sevenoaks, winning for a wedding bouquet, for three pieces, and for one piece of table decoration.

For three bunches of Black Hamburgh Grapes, Mr. C. Earl, gardener to O. E. d'Avigdor Goldsmid, Esq., Tonbridge, was well ahead; Mr. Laker beating him for three of any other black with Gros Maroc, and for three of Muscat of Alexandria. First prize for Nectarines was awarded to Mr. C. Harris for Elruge; to Mr. Allen for Peach Bellegarde; and to Mr. Carter for Melon Little Heath. A good collection of nine varieties came from Mr. C. Earl, who staged an almost perfect exhibit.

Non-competitive exhibits were good and in great numbers, but special mention may be made of Messrs. Charlton Bros'. grand herbaceous cut flowers.

HITCHIN.—July 7th.

On Wednesday last the summer exhibition of this Society was held in the grounds of the Priory, by kind permission of Mr. F. Delme Radcliffe. There was a large company present, especially in the evening when the three large tents were quite filled, and it was somewhat difficult for spectators to view the exhibits. The show of Roses was large, the blooms looked magnificent, and it was by far the best show of the last three years. No doubt this is owing to the weather having been more suitable for the flowering season. More superb blooms need not be wished for than those staged by Messrs. Prince (Oxford), Paul & Son, Burrell & Co., Harkness & Son, E. B. Lindsell, Esq., Rev. W. H. Jackson, and Mr. G. Moules. As time goes on, says a provincial contemporary, these growers run each other closer and closer for honours, and no doubt this Society, which originated in the Hitchin Rose Society, has been the means of stimulating to a very large degree the cultivation of the Rose in this neighbourhood, as specimens are now exhibited by amateurs and cottagers which a few years ago would not have been thought of.

The groups were very nicely arranged, and the first prize was deservedly awarded to Mr. W. Spencer, Codicote Lodge. The table decorations were remarkably pretty; there were eleven competitors, and Miss E. Logsdon was awarded first prize for a very delicate arrangement, and Mrs. W. Hill gained a second, Miss V. Shillitoe securing a third. The perennial and bulbous-rooted plants were very numerous, and added greatly to the appearance of the Show. The outdoor fruit was good considering the changeable season we have lately experienced, and the baskets of vegetables were excellent. Great credit is due to the Committee and Secretary for the excellent manner in which the arrangements were carried out. The following is a list of the prizes awarded in a few of the classes:—

In the open to all England class for forty-eight Roses, distinct.—First, Mr. E. B. Lindsell, Bearton, Hitchin. Second, Messrs. Harkness and Son. Third, Messrs. Burrell & Co. Fourth, Messrs. Paul & Son. Twelve Roses, two varieties.—First, Mr. E. B. Lindsell. Second, Messrs. Harkness & Son. Third, Messrs. Paul & Son. For eighteen Roses, Teas or Noisettes, distinct.—First, Mr. G. Prince, Oxford. Second, Messrs. Harkness & Son. Third, Messrs. Burrell & Co.

Several classes were open to members of the Society only. For twenty-four Roses, distinct, first Mr. E. B. Lindsell; while for eighteen, Rev. W. H. Jackson, Stagsden, was to the front. Twelve Teas or Noisettes.—First, Mr. E. B. Lindsell. Second, Rev. W. H. Jackson. Third, Mr. S. S. Berger, Bragbury End. Twelve distinct.—First, Mr. G. Moules, Hitchin. Second, Mr. W. O. Times, Hitchen. Third, Mr. W. Kingston, Bedford. Six Teas or Noisettes.—First, Mr. W. Kingston. Second, Mr. J. T. Hunt. Third, Mr. W. O. Times. Six distinct.—First and silver cup, Mrs. E. A. Moulden, Bandra House, Stevenage. Second, Mr. J. T. Hunt, Hitchin. Third, equal, Miss Alice Lucas and Mr. W. T. Lucas. Six single trusses of any Hybrid Perpetual.—First, Mr. E. B. Lindsell. Second, Mr. S. S. Berger. Third, Rev. W. H. Jackson. Six Teas or Noisettes.—First, Rev. W. H. Jackson. Second, Mr. E. B. Lindsell. Third, W. Kingston, Bedford. Six distinct single trusses.—First, Mrs. E. A. Moulden. Second, Mr. W. Furr. Third, Mr. J. Pollard, Highdown.

The bronze medal for best H.P. in the show was awarded to Mr. E. B. Lindsell for a fine bloom of Alfred Colomb. A bronze medal for best Tea or Noisette was awarded to the Rev. W. H. Jackson, Stagsden, for a splendid bloom of Comtesse de Nadaillac.

WOODBRIDGE.—July 8th.

Woodbridge is a clean, substantial, prosperous-looking Suffolk town of some 4000 inhabitants. As Mr. Mackellar, the Prince of Wales' gardener at Sandringham, observed on the occasion of his first visit as a Judge, it has a live-and-let-live look about it that it is pleasant to see; and a gayer and brighter town could not have been seen in all England on the day of the forty-sixth annual exhibition. The streets were canopied by flags and streamers, in which it would almost seem as if every householder had been anxious to share. The bells in the magnificent tower of St. Mary's church commenced the jubilation soon after sunrise, and continued at intervals till the full and splendid band of the Scots Guards arrived in the beautiful Abbey grounds, again kindly placed at the disposal of the Committee by Captain R. J. Carthew. The site is an

ideal one for a flower show on a fine day—a sort of grassy dell surrounded by luxuriant trees, suggestive of the famous Shrewsbury site in miniatnre, the visitors reminding also of the Shrewsbury enthusiasm—as fine a company as could be imagined in a town of much larger dimensions. The enterprising Great Eastern Railway provided special trains, with the result that the show grounds presented a highly animated appearance.

Only the general character of the Show will be indicated, as seeing that the schedule contained no less than 176 classes, a detailed report is out of the question. The products were arranged in five large marquees, one being devoted to plants, a second to Roses and cut flowers, a third to floral decorations mainly, a fourth to fruit, and a fifth to vegetables. The plant tent was better furnished than it has ever been before. Tuberous Begonias made a splendid display, both as arranged in groups with Ferns and in the form of specimen plants, and the prizewinners, General Farren, Mr. J. A. Burness, the Rev. T. Hanscroft, Mr. W. H. Crisp, Mr. T. Grimwood, and Major Howey, with their respective gardeners, are deserving of warm congratulations on the high excellence of their products. In Major Howey's group (gardener, Mr. W. Sowman), from Melton Grange, a double salmon pink variety, was very striking, and named Melton Beauty. Groups of Gloxinias with Ferns were also very charming as arranged by the gardeners to Miss Walford, Mr. A. Hayward, and Mr. Webster Adams. Fuchsias also were attractively prominent, relieved by remarkably fine specimens of exotic Ferns

The Rose tent contained many beautiful stands of blooms, also a fine group of decorative Roses arranged by Messrs. F. Cant & Co. In this group a new climbing variety with large semi-double rich maroon flowers may be expected to have a great future before it. Mr. "W. R. Raillem" obliges with the following notes on the competitive section :—In the trade classes Messrs. Frank Cant & Co. were first for the 25-guinea challenge cup of twenty-four Roses, this being the second time they have won it. Horace Vernet, Niphetos, and Marchioness of Dufferin were among the best examples, and the new Rose, Mrs. Frank Cant, was fairly well shown. Mr. B. R. Cant was a good second with a very fine bloom of Le Havre and a capital Horace Vernet. Messrs. D. Prior and Son were third with a splendid Maréchal Niel, rather dwarfing the quality of the other blooms. With thirty-six blooms Mr. B. R. Cant was first, the sheen of old gold on a rather damaged bloom of Luciole being conspicuous in the centre. Messrs. Frank Cant & Co. were second, but first in the next class of twelve Teas with Bridesmaid and Catherine Mermet (a good deal alike) in fine condition. Messrs. D. Prior & Son were second, Madame Cusin being their best bloom, and Mr. B. R. Cant third. In trebles Mr. Frank Cant was again first, a good triplet of Captain Hayward being in his stand ; Mr. B. R. Cant second, and Messrs. D. Prior & Son, who, perhaps from a misconception, showed nothing but Teas, third.

In the amateur classes Rev. J. H. Pemberton won the challenge cup for twenty-four for the second time in succession, but the blooms were hardly up to his usual standard. He took the medal with Marshal P. Wilder, but it was not an extra good bloom. Mr. Orpen was second, showing some splendid Teas, only twelve of which were allowed by the schedule. Maman Cochet, a slightly damaged bloom, took the medal, and he had also all the other well-known members of the Mermet family, Mermet herself, Bridesmaid, The Bride, and Muriel Grahame. He was also first in twelve Teas, but these were not so good. Mr. Foster-Melliar was second, showing Maman Cochet and Madame Cusin well. Mr. Orpen was also first in six H.P.'s of a sort with S. M. Rodocanachi, and with six Teas of a sort with Maman Cochet, and in six trebles, all of very fine Teas. He had practically no opposition in these classes. In twelve Roses Mr. Parsons showed a good stand, two of his blooms, Horace Vernet and Duchess of Bedford, being taken into competition for the medal H.P.

The fruit tent contained wonderful collections of the smaller kinds, such as Currants, Gooseberries, Raspberries, all in fine form ; also a grand display of Strawberries, and out of the whole great display Gunton Park was adjudged the chief prize for flavour. With a collection of fruit Mr. W. Messenger, gardener to C. H. Berners, Esq., Woolverstone Park, won the premier prize with good Black Hamburgh and Buckland Sweetwater Grapes, fine Peaches, Nectarines, Waterloo Strawberries, Cherries, Figs, and a Melon. Mr. Rogers, gardener to Lord Rendlesham, and Mr. Andrews, gardener to the Hon. W. Lowther, followed in close order with excellent produce. They were also successful in many other classes.

The competition for the prizes offered for collections of vegetables by Messrs. Sutton & Sons, Carter & Co., and Daniels Bros. were great and good, the results being creditable to all concerned.

The marquee devoted to floral decorations was a source of great attraction. More than a dozen tables were placed in competition, and it was no small triumph for Mrs. Orpen, West Bergholt, to have won first honours in the open class. The dainty Garland Rose was employed with much taste in association with Ma Capucine and Madame C. Guinnoiseau, relieved with light touches of Gypsophila and Fern. In the local class Miss W. Carter was the premier exhibitor with a bright and light association of Iceland Poppies and Ferns. There was a great display of Sweet Peas, baskets of Roses, and other ornaments. Mr. R. C. Notcutt was the chief prizetaker with hardy border flowers, and Messrs. R Wallace & Co. had a charming display of choice Liliums and Calochorti.

From whatever point of view regarded the show was a great success, thanks to an efficient Committee, good supporters, and the genial and zealous Secretary, Mr. John Andrews.

HARROW.—July 8th.

On Thursday last, in the grounds of Julian Hill, the Harrow Horticultural Society held its annual exhibition. Though there were open classes and others subject to the customary restrictions the display was not a very great success ; indeed, had it not been for the superb Roses staged by C. J. Grahame, Esq., and Messrs. B. R. Cant, G. Prince, J. Veitch & Sons, Ltd., F. Cant & Co., and W. Paul & Son, it would have been very poor. Hardy flowers were splendidly shown by Mr. E. Beckett, and table decorations by ladies were charming. The terrific hailstorm of some days ago cut a considerable amount of produce to shreds and entirely prevented many growers from competing.

As has been said the Roses shown were of magnificent quality, and make by far the finest feature of the exhibition. The chief class was for thirty-six distinct single trusses, the premier award being taken by Mr. B. R. Cant, Colchester, whose exhibit was composed of even, well-coloured blooms. The varieties represented were Her Majesty, Gustave Piganeau, Marchioness of Londonderry, Fisher Holmes, Marchioness of Dufferin, Marquise de Litta, Mrs. John Laing, Ulrich Brunner, Helen Keller, Comtesse d'Oxford, Mrs. R. G. Sharman Crawford, Marie Baumann, Duchesse de Morny, Madame de Watteville, A. K. Williams, White Lady, Mons. E. Y. Teas, Merveille de Lyon, Jean Soupert, Lady Mary Fitzwilliam, Star of Waltham, Mrs. Paul, Dupuy Jamain, Madame Eugène Verdier, Golden Gate, Horace Vernet, Kaiserin Augusta Victoria, Xavier Olibo, Marchioness of Downshire, Comte de Raimbaud, Ethel Brownlow, Capt. Hayward, Madame Cusin, Le Havre, The Bride, and Charles Lefebvre. Messrs. F. Cant & Co., Colchester, were second, their best varieties being Comte de Raimbaud, Ethel Brownlow, Kaiserin Augusta Victoria, Maman Cochet, Fisher Holmes, Jeanie Dickson, and Madame de Watteville. Mr. Geo. Prince, Oxford, was third.

The only other class open to all comers was for twelve Teas or Noisettes, distinct varieties, one truss of each. Mr. Geo. Prince secured the first prize, followed exceedingly closely by C. J. Grahame, Esq, Leatherhead. The winner staged Comtesse de Nadaillac (superb), Souvenir de S. A. Prince, Madame Cusin, Innocente Pirola, Catherine Mermet, Maman Cochet, The Bride, Ernest Metz, Cornelia Koch, Francisca Kruger, Alba Rosea, and Princess of Wales, the last two being weak, and detracting materially from the quality of the stand. Mr. Grahame's examples of Maman Cochet, Ethel Brownlow, and Muriel Grahame were superb, the first named being perfect. The third position was assigned to Mr. B. R. Cant.

There was also a class for twenty-four distinct single trusses, open to all amateur growers, and here C. J. Grahame, Esq., showed his strength in a most decisive manner. In the whole twenty-four there was scarcely one really weak flower, though there were several as good as any we have seen this season. The varieties included Gustave Piganeau, Her Majesty, Charles Lefebvre, Mrs. R. G. Sharman Crawford, Horace Vernet (quite perfect), Susanne Marie Rodocanachi, A. K. Williams, Marchioness of Londonderry, Maman Cochet (superb), Le Havre, Mrs. John Laing, Maréchal Niel, François Michelon, Marchioness of Dufferin, Ulrich Brunner, Comtesse de Nadaillac, Dupuy Jamain, Catherine Mermet, Alfred Colomb, Lady Sheffield, Louis Van Houtte, Madame Cusin, Victor Hugo, and Star of Waltham. R. E. West, Esq., Reigate, was second ; and J. Bateman, Esq., Highgate, third.

Besides the Roses in the section to which we have just alluded, there were other classes of minor importance, but no specimens of special merit were staged therein. Of non-competitive exhibits of Roses there were two only, one from Messrs. J. Veitch & Sons, Ltd., Chelsea, and the other from Messrs. W. Paul & Son, Waltham Cross. Both of these firms sent some splendid Roses, and in so doing added considerably to the interest and beauty of the show. Messrs. Veitch showed amongst many others Susanne Marie Rodocanachi, Etienne Levet, Bridesmaid, Comtesse de Nadaillac, Alfred Colomb, Duke of Wellington, Madame Cusin, Francisa Kruger, Catherine Mermet, Madame Lambard, and Dr. Andry. Messrs. Paul staged Her Majesty, Pride of Waltham, Merveille de Lyon, Mrs. W. J. Grant, Viscountess Folkestone, Grand Mogul, La France of '89, Marquise de Litta, and the beautiful Waltham Standard.

Mr. E. Beckett, gardener to Lord Aldenham, Aldenham House, Elstree, was an easy first in the class for twenty-four bunches of hardy flowers, distinct, each bunch to be shown in a separate vase. The first prize took the form of a silver cup, presented by H. W. Bryans, Esq., the Hon. Treasurer of the Society. The exhibit included amongst others Galega officinalis, Potentilla Mrs. W. Rollinson, Catananche cœrulea, Delphinium exaltatum, Phlox Le Soleil, and Chrysogonum virginianum. A. Kingswell, Esq., Harrow Weald, was second.

In the class for a group of flowering and foliage plants, arranged for effect in a space not exceeding 50 square feet, Mr. W. Smith, gardener to S. Gardner, Esq., was first with a somewhat heavy and dull exhibit of Ferns, Caladiums, Palms, Gloxinias and Begonias. This would have looked much better had the plants not been so packed together. Mr. E. Hawkins, gardener to J. M. Stuart, Esq., was second ; Mr. W. Elvey, gardener to R. Bosworth, Esq., third. Messrs. W. Cuthush & Sons, Highgate, sent a fine exhibit of Hydrangeas, Carnations, Liliums, and Begonias, not for competition, while Messrs. J. Laing & Sons, Forest Hill, sent superb Begonias.

In the several classes for vegetables, fruits, and plants, the competition was in no case particularly keen, and there was nothing staged that called for special mention here. Tables and vases of flowers staged by ladies showed much beauty and taste, but no notable originality. Several were completely spoiled by careless arrangement, whilst others were militated against by the use of paper and ribbons.

LEEDS.—July 7th, 8th, and 9th.

For ten years previous to this Jubilee year Leeds has not had the privilege of a summer flower show. This statement will naturally create inquiry why a city of the wealth of this great commercial centre should hold this anomalous position amongst other places of similar and even less importance horticulturally. In former times this much to be deplored state of matters was in no way due to the need of public spirit of the "good old town." At any time a hint in this direction would be considered a reproach amounting to an insult by its people, who, by the sheer force of their public spirit have lifted their town into the dignity of a city of such importance as to confer the title of Lord Mayor on its chief magistrate.

The times were in Leeds when first-class exhibitions were annually provided, but unfortunately the most persistent ill luck year after year in shape of rain and storm dogged the efforts of as plucky management as ever attempted to win success by deserving it. Year by year the weather proved so consistently bad that "Leeds show weather" became the tritest of proverbs, and as regularly the Committee had to fall back upon its supporters for money to carry on the war against the elements, and, as it eventually proved, a war with fate itself. The exhibitions, under the management of the old Committee having ceased as the years went by, those interested in the advance of horticulture have felt at a decided disadvantage, and the question of resuscitating the Show has often been discussed; but the old management have naturally fought shy of the matter, and as the difficulties of a reorganisation rested in getting together a body of business men not only possessed of the necessary qualifications to organise a show worthy of the city, but also having such confidence in each other to promote unity of effort as to deserve success if the weather were favourable, or on the other hand to stand back to back and accept the onus of failure.

The new Committee has had a somewhat mixed experience in the way of encouragement, accompanied by great difficulties and prejudices to combat. For the manner in which they have met and overcome them they fully deserve the thanks of their fellow citizens. By reason of the blank of ten years it would be difficult to estimate the loss to the neighbourhood from a horticulturist's point of view; but in the late treat provided by the Flower Show Committee, Leeds people should at least realise that by the Committee's exertions the reproach of neglecting their duty to the important art of horticulture has been removed, and their confidence and support be awarded to them as matter of duty, in the interest of all concerned.

The recent wholesale destruction of exhibits by the storm which entirely wrecked the York Show no doubt had a marked effect both on the quality and quantity of exhibits at Leeds. In many cases, but for their destruction, many would have found their way to Leeds, whilst the continuous boisterous weather had a deterrent effect on others for fear of the same fate of York overtaking their exhibits. The leading feature at Leeds undoubtedly was the open class groups of miscellaneous plants arranged for effect, occupying space not exceeding 250 square feet. Mr. J. S. Sharp, Valley Nurseries, Almondbury, secured the first prize of £15. The excellent colouring and free growth of the Crotons, added to the fact that the flowering plants generally were fresh and well timed, were strikingly evident, whilst the important features of the group were kept sufficiently low to bring them with the line of sight from any point, abundant scope for variety of detail and pleasing variation of the under surface were maintained. In fact, the whole arrangement was in excellent taste, including a more natural background than was shown in the other collections. Mr. R. Simpson secured the second prize of £10 with a very high group, the background being somewhat stiff and formal, otherwise the arrangement was exceedingly good, the Crotons being highly effective; and Mr. W. Townsend, gardener to E. Beckitt Faber, Esq., J.P., Belvedere, Harrogate, the third; Mr. A. Taylor, Allerton House, was fourth.

In the class for six stove and greenhouse plants the only prize awarded fell to Mr. J. Sunley, Monkfuston Nurseries. The prizes for six ornamental and fine-foliage plants fell to Messrs. Simpson, Townshend, and Sharp in the order named. In this class the Judges awarded to Mr. Sunley a special prize for a magnificent plant of Cycas revoluta. For three Crotons, distinct, Messrs. Sharp, Townshend, and Simpson and Sons won in the order named.

The classes for exotic Ferns were very good. The first prize for six distinct varieties was won by J. Rhodes, Esq., Potternewton House (gardener, Mr. R. Mason); Mrs. Tetley, Weetwood (gardener, Mr. J. Eastwood), second; and Mr. Taylor third. In the class for three Messrs. Rhodes, Kitchin, and Mrs. Tetley were the prizewinners. The Orchids were not numerous, but comprised some fine specimens from the collection of T. R. Jessop, Esq, J.P., Roundhay Mount (gardener, Mr. T. Tyson), who won the first prize for six plants, including Cattleya Mossiæ, C. Mendeli, Oncidium macranthum, and a fine plant of Saccolabium guttatum, carrying thirteen beautiful spikes of well-marked blooms. Messrs. J. W. Moore, Rawdon, and J. Sunley secured the remaining prizes.

Roses in pots were moderate in quality; the only prize awarded fell to Mr. H. Pybus, Moore Monkton, Leeds. Table plants were good, but did not include anything new or specially striking, the prizes falling to Messrs. Townshend and Sharp for specimens in 6-inch pots, whilst Mr. J. W. H. White, Mr. M. Kitchin, and Mr. Eastwood won the prizes limited to within seven miles of Leeds.

In the cut flower classes, whilst the quality was generally good, there was abundant room for more competition. The most noticeable were the stand of twelve Tea-scented Roses shown by D. & W. Croll of Dundee, and stands for twelve bunches of stove and greenhouse cut flowers (open). The winners were Mr. Tyson and Sir J. Pease, M.P., Hutton Hall (gardener, Mr. McIndoe). Messrs. Shaw Bros. of the Covered Market, Leeds, showed baskets of flowers and bridal bouquets, winning first prizes in the several classes; Mr. A. Taylor being second.

The fruit classes were highly meritorious. The first prize for ten kinds was won by Mr. J. Edmonds, Bestwood Lodge, Arnold, Notts; the second prize went to Mr. McIndoe, and the third to the Earl of Harrington, Elvaston Castle (gardener, Mr. Goodacre). In the class for three bunches of Black Hamburgh Grapes Lady Beaumont, Carlton Towers (gardener, Mr. W. Nichols), was first with well-finished bunches; W. Sheepshank, Esq., Ripley (gardener, Mr. A. Large); Mrs. Braithwaite, Throstle Nest, Horsforth (gardener, Mr J. W. Pybus). For three bunches of white Grapes Mr. Nichols was again deservedly placed first with three bunches of finely finished Buckland Sweetwater; second, Mr. McIndoe. The first prize for a tray of vegetables of eight varieties was won by Mr. Nicholls; second, Mr. McIndoe; third, Mr. A. Radcliffe, Elland.

NEW BRIGHTON.—July 10th.

Known as a health-giving resort rather than for its prominence as a floral centre, this seaside rendezvous on the banks of the Mersey is noted annually for its excellent Rose show, the proceeds being given to the Wallasey Cottage Hospital, and so instead of partaking of the usual orthodox system of shows it resolves itself into more of a large garden party. And what a delightful garden is Dr. Bell's, the ever popular and esteemed President! Woodland walks where one can listen to the music without fear of interruption, and watch the players at lawn tennis striving for the victory on the sward in front. The day was perfect, and the ladies in their bright colours left nothing wanting in their efforts to try to make the day a success. T. R. Bulley, Esq., J.P., the courteous Secretary, had made excellent arrangements for exhibitors.

Many of the old growers were no doubt at Manchester, but their absence was more than compensated for by the splendid array brought together by the Irish firm of Alex. Dickson & Sons, Newtownards, Co. Down. They were something to remember by reason of the many new seedlings, and the perfect condition of the older of this firm's raising. A few of the newer ones must be reserved for a later article, but one named "Ulster," an ideal light Rose of fine form and great substance, will almost surpass anything yet seen by the best of our growers, and the New Brighton people are greatly indebted to Messrs. Alex. Dickson and Sons for such a fine display. Dicksons of Chester, too, were in capital form, their flowers being extremely good.

For forty-eight, distinct, single blooms, Messrs. Alex. Dickson and Sons, Royal Nurseries, Co. Down, were well first with probably one of the finest stands this firm ever staged. The varieties were Caroline Testout, Mrs. Jowett, Countess of Caledon, Gustave Piganeau, Lady Mary Currie (seedling), Louis Van Houtte, La France, Abel Carrière, Mrs. J. Laing, Victor Hugo (grand in colour), Madame Eugène Verdier, Alfred Colomb, Marquis Litta, Miss Bessie Brown (handsome), Charles Lefebvre, Kaiserin Augusta Victoria, Star of Waltham, Marchioness of Londonderry (splendid), Horace Vernet, Lady Mary Fitzwilliam, Etienne Levet, Pink Seedling, Earl of Dufferin (charming), Souvenir d'Elise, Souvenir de S. A. Prince, Madame Cusin, The Bride, Exposition de Brie, Rosamaine, Alix Huguier, Beauty of Waltham, Avoca (new seedling Tea), Maman Cochet, Muriel Grahame, S. M. Rodocanachi, Marie Van Houtte, Countess of Rosebery, Robert Duncan (new), Dr. Andry, Ulster (new seedling H.P., and quite the gem of the Show), Devienne Lamy, Her Majesty, Marie Rady, Mrs. W. J. Grant (splendid), Niphetos, Marie Verdier, Lady Moyra Beauclerk, and François Michelon. The second prize fell to Dicksons, Ltd., Chester, with a fine stand of more than passing interest. Most noticeable were Her Majesty, Mdlle. Eugène Verdier, Captain Hayward, Fisher Holmes, Pierre Notting (very fine), Susanne Marie Rodocanachi, Comtesse de Serenye, White Lady, and Paul Neron.

For twenty-four varieties, three trusses of each, the Irish firm was the only exhibitor, but with a faultless stand that would have won a position at any show. Mrs. W. J. Grant, Marchioness of Londonderry, Alfred Colomb, Caroline Testout, Horace Vernet, Ulster, Marie Baumann, Alice Lindsell, Earl of Dufferin, Lady Moyra Beauclerk, Jeannie Dickson, Dr. Andry, Bessie Brown, Gustave Piganeau, Maman Cochet, Dupuy Jamain, Alice Grahame, Louis Van Houtte, Countess of Caledon, Kaiserin Augusta Victoria, La France, A. K. Williams, Souvenir de S. A. Prince, and Heinrich Schultheis.

For twelve blooms one colour Alex. Dicksons and Dicksons, Ltd., were awarded equal first, the former with Marchioness of Londonderry and the latter with Mrs. R. G. Sharman Crawford. The former were the only exhibitors of twelve Teas and Noisettes, but again the same excellence was maintained, Miss Bessie Brown, Comtesse de Nadaillac, Souvenir d'Elise Vardon, Ethel Brownlow, Maman Cochet, Madame Hoste, Madame de Watteville, Muriel Grahame, Niphetos, Madame Cusin, Souvenir de S. A. Prince, and Catherine Mermet being the varieties.

Amongst amateurs the best prize was for twenty-four distinct, the N.R.S.'s gold medal accompanying it. Here, as in all the other classes, the enthusiastic amateur H. V. Machin, Esq., Worksop, was a capital first, the varieties being Ulrich Brunner, Marchioness of Londonderry, Xavier Olibo, François Michelon, Earl Dufferin, Caroline Testout (superb), Gustave Piganeau, Mrs. J. Laing, Mrs. R. G. S. Crawford, Duke of Teck, S. M. Rodocanachi, Horace Vernet, Her Majesty (grand), A. K. Williams, Eugène Verdier, Dupuy Jamain, Louis Van Houtte, Merveille de Lyon, Charles Lefebvre, Margaret Dickson, Alfred Colomb,

Mrs. W. J. Grant, Victor Hugo, and Madame Gabriel Luizet. A capital second was staged by Wm. Stubbs, Esq., the best being Marchioness of Londonderry, Ulrich Brunner, Mrs. J. Laing, Her Majesty, Emilie Hausburg, and Général Jacqueminot. Mr. Machin won with eighteen distinct, Ulrich Brunner, Her Majesty, Maurice Bernardin, Louis Van Houtte, S. M. Rodocanachi, and Etienne Levet being superb. H. G. Roberts, Esq., was an excellent second.

Mr. Machin again scored easily for six light varieties with Mrs. J. Laing, and six dark with handsome Ulrich Brunner; also for twelve Teas and Noisettes, the silver medal of the N.R.S. being awarded. Very choice were Catherine Mermet, Jeanne Ducher, and Innocente Pirola. H. J. Roberts, Esq., had a nice stand for second place. T. R. Bulley, Esq., staged well for twelve distinct, fine being Caroline Testout, Ulrich Brunner, Marchioness of Londonderry, Mrs. J. Laing, Earl of Dufferin, Margaret Dickson. Dr. Bell second. Alex. Dickson and Sons were granted a first-class certificate for six new Roses with Lady Moyra Beauclerk. A. J. Mead, Esq., won the N.R.S. bronze medal and prize for six varieties. T. R. Bulley, Esq., had a charming stand of twenty-four distinct hardy perennials. Amongst the number of good things noted being Liliums giganteum and testaceum, and Dianthus Atkinsoni. Dr. Bell was first for twelve varieties, and A. J. Mead, Esq., for six; Mr. Jowett following in each class.

The two Dicksons had also splendid stands, the Belfast firm staging eighty bunches of new and rare types, and the Chester firm a lesser number, but all in the same good condition as the former. Hinton Spalding, Esq., had twelve choice Carnations. Mr. C. A. Young, Floral Nursery, West Derby, Liverpool, had a stand of one hundred flowers of the choicest and best Carnations and Picotees, the Malmaisons, for which he is celebrated, being to the fore. It was a grand exhibit, and deservedly admired by all present.

BATH.—JULY 10TH.

THE Rose Show was held in the Sydney Gardens under blue skies and bright sunshine. Of the Show itself, says the "Bath Herald," very little room for adverse criticism can be found, the high character of the exhibits being fairly well maintained, while the prize fund offered had sufficient attractions to guarantee a good average show. The past season has probably been the most favourable for Rose growing experienced for some five or six years, and its effect was wonderfully apparent in the excellent condition of the exhibits and their general brightness of colour. This year the Committee has exhibited a commendable spirit of enterprise, and several attractive features appear which are novel to a Rose show. Classes have been introduced exclusively for ladies, and the interesting display of decorated bicycles and tastefully laid out dinner-tables, which lent such attractions, must sufficiently compensate the Committee for making the experiment. The inclusion of such a novelty for a Rose show as a musical bicycle ride also aroused additional interest in the fixture, and in every respect the Committee is to be congratulated upon the departure from the old-time régime. Messrs. Cooling & Sons scored a big success in the nurserymen's department, carrying off the first awards in both the premier Rose classes, while in the amateurs' section similar distinction was gained by the Rev. J. H. Pemberton, Mr. S. P. Budd being placed second in the leading class. To Messrs. Cooling & Sons was also awarded the silver medal of the National Rose Society for the best Hybrid Perpetual Rose in the Show for Susanne Marie Rodocanachi, the other medal given by the National Society being secured by Mr. J. Mattock of Oxford for The Bride. Begonias made a charming display. We subjoin the prize-winners in a few of the principal Rose classes.

The chief Rose class was for seventy-two distinct varieties, single trusses.—First, Messrs. G. Cooling & Sons. Second, Messrs. Paul and Son. For thirty-six, three trusses of each.—Messrs. George Cooling and Sons received the premier award, while for eighteen Mr. J. Mattock was first, Mr. G. Mount second, Mr. C. Turner third. In the class for thirty-six single trusses.—First, Mr. J. Mattock. Second, Mr. G. Monnt. Third, Mr. S. Tresedar; and for eighteen Teas or Noisettes, distinct varieties, single trusses.—First, J. Mattock. Second, S. Tresedar. Third, G. Mount.

In the amateurs' division the first prize for thirty-six distinct varieties, single trusses, went to Rev. J. H. Pemberton, and the second to Mr. S. P. Budd. For twenty-four distinct varieties, single trusses, the prize-winners were Messrs. T. Hobbs, J. Parker, and Rev. Powley in the order named. For twelve.—First, Rev. R. Powley. Second, T. Hobbs. Third, J. Parker. While for twelve, three trusses of each, T. Hobbs was first, Rev. R. Powley second, and J. Smith third.

In the class for eighteen Teas and Noisettes, distinct varieties, single trusses—First, A. Hill Gray. Second, S. P. Budd. For twelve—First, R. Foley Hobbs. Second, J. Parker. Third, J. Hinton. Six ditto, three trusses of each—First, A. Hill Gray. Second, Rev. R. Powley. Third, J. Parker. The most decorative arrangement of Roses, space not exceeding 10 feet long by 4 feet wide (small plants of Palms, Ferns, or Mosses in pots may be used in this group)—First, Messrs. George Cooling & Sons. Second, Mr. George Garraway.

THE WEEPING OF VINES.—After the spring pruning in the vineyards, water is seen trickling down the stems, and in France this is poetically called the "weeping of the Vine." Prof. Cornu, a botanist, has recently studied this phenomenon, and he says it is due to the abundant absorption of water by the roots of the Vine in spring time. The water is forced through all the branches and stems to their very tips, and where they are cut by the pruner it oozes out like teardrops.

DWARF PHILADELPHUS.

THE tall-growing species and varieties of Philadelphus are well known to most people. The dwarf ones, however, are by no means so universally grown. As far as beauty and use go, they are quite as pretty, and, if anything, more useful than their taller growing relatives, as they can be grown in a number of places where tall ones would be out of place, and a good constitutioned, quick-growing, and free-flowering shrub is wanted. The dwarf race of Philadelphus has been brought about by the dwarf species P. microphyllus being crossed with P. coronarius, Messrs. Lemoine of Nancy being the principal workers in this direction.

P. microphyllus grows to a height of about 2½ feet when mature, and forms a dense bush made up of slender, upright branches. The leaves are about half an inch long covered (especially on the under surface) with silvery down. The flowers are half an inch across, and freely produced during June.

P. Lemoinei is a hybrid, one of the offspring of the foregoing parents. It may be grown to a height of 3 feet, but can be kept for several years at little more than half that. The branches are thin and pendent, the leaves ovate with an acuminate apex, 2 inches long, the upper half slightly serrate, with a few minute hairs on both surfaces. The flowers are pure white, three-quarters to 1 inch across, and very sweetly scented. The flowers are produced along the whole of the past summer's growth. A variety of this, known as "P. Lemoinei var. erectus," is similar to the former in all respects save in its more upright habit; if anything it shows its flowers off to the better advantage of the two.

P. Gerbe de Neige is much like the former, but the flowers and leaves are larger. P. Boule d'Argent is very similar in habit to P. Lemoinei, but the flowers are double, and inclined to cream rather than white. The golden-leaved variety of the common Philadelphus, P. coronarius var. foliis aureis, never grows very tall. It forms a thick bush, which by pruning can be kept from 1½ to 2 feet high. The leaves are of a beautiful golden colour, which makes the plant worth growing for that cause alone.

The cultivation of these plants is simple. Given almost any kind of soil with top-dressings of manure occasionally, they are almost sure to thrive. After flowering in the P. Lemoinei section the shoots should be cut back to where young growths are springing from the base. By keeping the old wood cut out more room is left for long new branches to be made, the consequence of which is a greater wealth of blossoms. People who intend planting shrubs, especially those whose shrubbery room is restricted, cannot do better than include these in their selection. —W. D.

THE CALIFORNIA ORCHARDS.

THE fruit crop of California is again below the average, owing to frosts in some districts, and to hot dry winds in others. A few valleys report larger crops than usual, and single orchards are in some cases well laden, though surrounded by others that have no fruit. The following notes are from personal observation and the reports of correspondents:—

Almonds are much below the average, but in a few districts show a large crop. Apricots are generally excellent, except in Sacramento, Kern, and parts of Ventura counties. Cherries are below the average, particularly the large, light-coloured varieties, such as Royal Ann. Peaches are difficult to report upon, because districts vary so greatly, but the crop is thought to be only an average one. Pears, Plums, and Prunes promise a fair crop in a few places, but seem to be short in many orchards. Los Gatos, San Benito, and Solano districts report the Prune crop as from one-third to one-half of the average season. The Pears also have fallen badly. In fact it is too early to determine exactly the prospects for either Pears or Prunes. Apples seem to be in good condition. Walnuts are up to the average. The Grape crop, so far as reported, is better than usual.

In most cases under my own observations, more injury was done by the failure of late rains and by the hot days of early April than by frosts. But in the parts of the State subject to frosts there has been much injury to deciduous fruit trees from "sour sap," which, as Professor Woodworth of the University of California recently explained, consists in the fermentation of the sap of the plant by apparently the same organisms that cause the souring of milk. Root sour sap occurs after very wet winters, in badly drained soil, and the smaller roots rot away. Sour sap in the trunk and branches of trees occurs when late frosts, after warm days, rupture the growing cells, so that decay organisms find entrance. One orchard association has reported the loss of a thousand large trees from this sour sap.

Taking a general view of the fruit industry of California, as should be occasionally done so as to prevent people from making unprofitable investments, the outlook is not very encouraging except in a few limited directions. Of course, reports of large profits made by persons engaged in fruit growing still continue, but at present they should be believed only after careful judgment. The average orchardist has not made any money to speak of for three seasons past, and some of the leading men in the business have become bankrupt. Some orchards have been cut down and many have been regrafted. This is particularly true of Almonds, which have been grafted over to Prunes.

There is now a general feeling in California that the fruit industry ought not to have much, if any, expansion for several years to come. Perhaps one fruit grower in a hundred will find orchard extension

profitable, but nearly all will lessen their area and specialise their products.

The wiser residents regret to see sales of colony lands at high prices to non-residents for orchards which must be planned, planted, and cared for by agents or by those who sold the land. California offers many and great inducements to persons who are able to buy land, live on it, and begin work there, supporting themselves by plain, old-fashioned, mixed farming until they have learned how to specialise. And this kind of pioneering, of growing up with the country, appears needful to later contentment.

One colony in this State boasts that it has more than a hundred non-resident investors, most of whom will not see the land they own until it is covered with bearing Vines and trees. For five or six years they have paid for the planting and care, hoping to find their orchards and vineyards profitable. But such tracts, managed by syndicates and associations, have never been satisfactory, even from a financial standpoint, while the poor instalment-payers are without that homely attachment to trees that one has planted, and to gardens that one has created, which is really the only salvation. Thousands of acres of these alien and hireling orchards are likely to go back to pasture and Wheat fields.—CHAS. H. SHINE (in "Garden and Forest.")

LILIUM CONCOLOR.

A GRACEFUL plant is Lilium concolor when flowering in gardens where Lilies are prized. The flowers are of moderate size, the petals narrow and recurving, but the colour is a peculiarly bright orange red, and the whole appearance is light and elegant. Variations from seed are not uncommon, and they differ chiefly in the depth of the colouring on the prominence of the spots. One variety is noticeable for its soft tint, all clearly defined spots, a flower of which is reproduced in the accompanying woodcut (fig. 10). In some old works this Lily is referred to as a greenhouse plant, and in the early part of the present century it was so grown. Long since, however, it was proved to be hardy, and is now the occupant of many borders. It succeeds wherever the soil is not excessively heavy, cold, or waterlogged, but is also adapted for culture in pots.

THE YOUNG GARDENERS' DOMAIN.

PEACHES AND NECTARINES.

(*Continued from page* 35.)

WHEN the trees are in full growth the leading shoots may be stopped at the fourth large leaf if the allotted space is covered, if not the growths may extend to their full length. All sub-laterals on established trees should be stopped at the first joint.

Thinning the fruit is deferred too long in many if not most cases. Peaches and Nectarines generally set well if the blooms are protected in some way. As soon as can be seen, deformed fruits and a number of crowded fruits should at once be removed, leaving about double the quantity required for ripening till stoning commences. The crop required to ripen must then be decided upon, bearing in mind that large fruits of good varieties are always the best flavoured. Watering the trees must be attended to if the best results are expected, and if the borders are mulched early in the summer with strawy manure a great saving is gained. It is best to leave the soil loose around the trees for an inch deep, as the water soaks in better, and prevents the soil cracking.

Insects most commonly found on Peach trees are aphis and red spider. Both of these pests require early attention to prevent their increasing, or the result will be disastrous. Quassia extract and softsoap will destroy aphis of all kinds if applied in liquid form. As soon as the buds begin to swell or break into growth is the best time to grapple with spider or aphis. Choose a warm day, and when the sun is shining set the garden engine or syringe to work, following it up about three times a week, excepting when the trees are in flower, and not much trouble from these pests should occur. Syringing with clear water, late in the afternoon of hot days, until the fruits begin colouring is beneficial to the trees.

The following are good varieties for succession: *Peaches.*—Waterloo, Hale's Early, Rivers' Early York, Crimson Galande, Magdala, Royal George, Dymond, Bellegarde, Stirling Castle, Goshawk, Barrington, and Walburton Admirable. *Nectarines.*—Cardinal, Early Rivers, Lord Napier, Stanwick Elruge, Pine Apple, Dryden, Milton, and Spencer. —J. L. G.

THE MEANS AND MODES OF PROPAGATING PLANTS.

(*Continued from page* 12.)

PLANTS are broadly classified by the character and permanence of the stem, this being annual, biennial, or perennial. Thus in the annual the plant is raised from seed in the spring or the winter preceding the spring in which it appears above ground, the stem attaining its fullest development in summer when the blossom appears, and the seed is subsequently produced and ripened. When the seed is ripe the functions of the roots and stem are performed, and the plant dies to be reproduced from the seed that it has yielded. The various cereals, many vegetables, and all the flowers popularly termed annuals may be cited as examples of this class.

A biennial lives, as the term implies, for two years. The seed from which it is raised is sown in the spring, and during the first year of its existence the plant produces leaves, and in some cases develops a fleshy, tuberous, quasi root. In the second year, as spring is ripening into summer, the plant sends up a strong stout stalk, which blossoms and yields seed. As in the annual, when the seed is ripe the work of the root and stem is done, and the plant perishes. Parsley, the Carrot, the Parsnip, and Beetroot afford familiar examples of plants of this class.

Perennials differ from annuals or biennials in the length of their duration. They live more than two years, and in some cases for hundreds of years. Among such may be named ancient Oaks and forest trees in various parts of the world, the Vine at Hampton Court, and the still more wonderful Rose tree at Hildersheim in Germany. All perennials are not long-lived. They last a few years, some dying down to the ground and sending up fresh stems yearly, and others retaining their

FIG. 10.—LILIUM CONCOLOR.

branches and shedding their leaves in the autumn, or from time to time gradually and almost imperceptibly, as evergreens. But many show deterioration in every way as they advance in age, and ultimately perish or are rooted up to make room for plants of a similar kind in full strength and vigour.

Advantage has been taken of the varying character of perennial plants to classify them in accordance with their habit of growth and appearance. Thus plants whose stems are soft and succulent, and contain but little woody fibre, and die down to the roots annually to spring up again next year from buds formed at the base of the perished stems, are called herbaceous plants. The Lychnis, the Phloxes, some of the Delphiniums or Larkspurs, and Michaelmas Daisy are examples of herbaceous plants. Trees, on the contrary, whose stems are composed of hard woody fibre, are classified as ligneous plants. Shrubs are ligneous plants by reason of the hardness and toughness of their stems, although they differ widely in height and dimensions from trees properly so called, varying in altitude from about 2 feet to 20 feet. The stems of shrubs throw off an undergrowth at their base which develop into new stems in

time, and produce flowers. The Rose is an example of the smaller kinds of shrubs, the Laurustinus of shrubs of intermediate size.

Between herbaceous and ligneous plants is an intermediate link, consisting of plants which partake partly of the nature of each, but are dissimilar in some respects. These are termed sub-ligneous plants. The hard lower portions of the stems of these are lasting, and put forth fresh shoots every year; but the extremities of the shoots perish year after year, and are again renewed when the plant makes fresh growth. Among these may be named Sage, Rue, and Southernwood.—C. W. M.

(To be continued.)

Cultivation of the Melon.

The Melon is one of the most important of dessert fruits. Although the style of growth appears similar to the Cucumber, quite a different course of treatment is required. For the first crop seeds may be sown in December, and afterwards at intervals for succession; but no sowing should be made after July, for the Melon requires a long period of sun for ripening its fruits, and by the time those on plants raised at the end of July have attained their full size very little sunshine can be expected.

When sowing, one seed in a 3-inch pot will be sufficient, and a few more pots should be sown than the number of plants required. Place the pots in a temperature about 75°, and cover them with pieces of glass or paper. When the seedlings appear remove the covering, and afford all necessary light for keeping them sturdy. Prepare a hotbed of litter and leaves, and upon this place a layer of turves, the grassy side downwards. A narrow ridge of heavy fibrous loam, broken into small lumps, with a little crushed lime rubble added, is placed upon the turves. When the temperature of the bed has sufficiently cooled down to be safe the plants are inserted at a distance of 2 feet apart. Next, fix a wire trellis to the roof of the house to train the plants upon, placing it about a foot from the glass.

The plants when growing require copious supplies of water, both at the roots and in the atmosphere, taking care not to apply the water too near the stem, as that is apt to cause canker. Occasional applications of liquid manure are beneficial after the fruits are set, and when these show signs of ripening water must be gradually withheld. Syringing will be required on bright days, regulating it by the condition of the weather, for a too moist atmosphere inside the house on dull days causes the plants to canker. The paths of the house should be kept damp in bright weather; but when the plants are in flower both syringing and damping must be discontinued, as a dry atmosphere is required to set the fruit. After the set has been obtained recommence syringing and damping, and continue until the fruit begins netting, when damping alone will be sufficient, and even this should be stopped when the fruit changes for ripening. No shading will be required, as the Melon is a sun-loving plant.

The night temperature ought not to fall below 70°, and may be allowed to rise to 90° or 100° in the daytime Air must be admitted on bright days when the temperature reaches 80°, gradually increasing the amount as the temperature rises. The house must be closed early in the afternoon, with adequate moisture for the well-being of the plants.—Elveden.

(To be continued.)

Hardy Fruit Garden.

Propagating Strawberries.—The best and strongest plantlets showing a few roots at the base may now be layered in quantity on the surface of pots filled with good soil, on the soil or under surface of moist squares of turf, or in the natural soil between the plants in the beds. In the latter case, a little preparation may be necessary, loosening and breaking up the surface, if hard. A little fresh material, such as leaf soil, decayed manure, and old potting soil lightly worked in, will be of assistance in retaining moisture, and so promoting the early emission of roots. Secure the plantlets in position by hooked pegs or stones.

When pots or turves are used, sink them slightly in the ground; 60 size or 3-inch pots are the most suitable. No more drainage is required than can be afforded by one crock at the bottom and a piece of fibrous turf. Loam and manure in equal parts pressed firmly in the pots is the best compost. By all means select runners from fruitful plants. Daily waterings in dry weather are imperative, especially for the pots, which frequently require water twice a day. Cut off the runner wires beyond the plantlets. Superfluous runners ought to be thinned out so as to afford those selected the most favourable conditions for rooting freely and growing sturdily.

Summer-pruning Apples and Pears.—The long foreright shoots or breastwood issuing from the main branches of trained trees on walls, pyramids, and bushes in the open, require now to be gradually pruned back. Select the point of shortening immediately above the fourth good leaf, counting from the base of the shoot, though not including the small examples known as the small basal leaves. Commence in all cases where the growths are strongest, such as the upper parts of trees, working gradually downwards to the weaker parts. It is a good plan to divide the removal of the whole of the shoots into two or three operations, which will not make the check to growth so sudden. This may very conveniently be carried out when a number of trees require treatment by going over the upper parts first. Trees in a generally fruitful condition do not produce long annual shoots to the same extent as those in a less satisfactory state, therefore the first summer prunings can be completed on each tree in one or at most two operations.

If sappy or rampant shoots appear, cut such out entirely. They usually issue from the old wood, and are seldom required. They are not often found on trees well furnished with fruiting spurs.

Young trees still extending main branches ought not to have the leaders shortened, but the side shoots or forerights should be shortened as indicated to the fourth leaf. This assists the formation of spurs naturally and artificially.

Regulating Wall Tree Growth.—Frequent attention must be given throughout the summer to wall trees needing to be kept furnished with wood for bearing. Apricots, Peaches, and Nectarines, as well as Morello Cherries, Figs, and to some extent Plums and Sweet Cherries, are provided with bearing wood by the annual laying in of young shoots. Those growths which have previously been secured in the proper position will only demand slight attention now, simply nailing or tying in the parts which have extended. The objects attained in doing this are riper wood, and a more finished appearance of the trees, together with the early removal of superfluous shoots. The freer admission of light and air is secured, which acts upon the foliage retained, finally completing the full maturation of the wood and buds.

Outdoor Vines.—The full exposure of the principal leaves is important. Break out all laterals issuing from below the bunches of fruit. The side shoots having been stopped one or two joints beyond the bunches, lateral shoots will require repressing at the first leaf. This will prevent overcrowding and shading of the fruit and large leaves. Reduce the number of bunches to one on a shoot, and thin out half the berries. If successional shoots from near the base or other parts are being trained in give them space to develop.

Outdoor Figs.—Shortening the summer shoots of Fig trees intended to be retained for future bearing must not be practised. Shoots bearing the fruit this season require pinching a few leaves beyond the fruit. These growths may eventually be cut out. Crowded growths should be thinned, and foreright, ill placed, and rampant, strong and sappy shoots cut out entirely. Those retained train in neatly and regularly to the wall or trellis, leaving them full length.

Removing Suckers.—Suckers spring up freely round Plum trees. These ought to be carefully dug up or pulled out. When roughly cut off just below the surface they soon appear again. All sappy shoots that spring from below the soil round Gooseberry trees should also be cleared away. Cuttings properly prepared when propagating do not produce trees that form suckers. The sucker growths from Raspberries may also be thinned out round the stools, and those a distance away dug up.

Fruit Forcing.

Vines.—*In Pots for Early Forcing.*—The canes for starting the first week in November, to ripen the fruit in March or early in April, should by this time have completed their growth, and must not have any more water than will prevent the foliage from becoming limp. Expose fully to light and air, so as to thoroughly ripen the wood and the buds. If the laterals have been allowed to extend with a view to thickening the cane, they must be brought back gradually by cutting away part at a time, reducing each by degrees to one leaf. The Vines should be kept free from insects, syringing occasionally if red spider appear, for it is important that the leaves perform their functions. When the wood becomes brown and hard, place the Vines on a board or slates in front of a south wall, securing the canes to its surface to prevent the foliage being damaged by wind. Afford water only to prevent the leaves flagging; cut away the laterals close to the cane, and in a few days shorten the cane to the length required. The principal leaves must not be injured, but left to die off naturally. The best varieties for early forcing are White Frontignan, Foster's Seedling, Black Hamburgh, and Madresfield Court. Later Vines should be encouraged to make a good growth and perfect it, keeping them clean, also exposed to all the light and air possible. They must not be overwatered, nor neglected for due supplies of water or liquid manure. Cut-backs are much the best for early forcing, as the Vines make an earlier and sturdier growth, and perfect it sooner than others. This is important, for the Vines have more rest and start with greater regularity.

Early Forced Planted-out Vines.—It is not advisable to force Vines year after year to ripen their crops before May or June, and houses which are started in December or at the new year to afford ripe fruit at the times mentioned respectively are best planted with varieties that ripen together, the structures being only of sufficient size to admit of a supply of Grapes for a period of not more than six to eight weeks. This is as long as black Grapes will hang under a May, June, and July sun without turning red, or white Grapes from becoming brown on the exposed side of the bunches, even when a slight shade is afforded from sun. Such arrangement admits of the foliage being cleansed with water from a syringe or engine, but when there are late as well as early varieties in the house the dry atmosphere that must be maintained on their account when the Grapes are ripening causes red spider to increase on the foliage, and this is very disastrous to present and future crops of Grapes. Early Vines that ripened their crops in May or early June

will soon be cleared of Grapes. They shonld be thoroughly cleansed employing an insecticide if necessary, and the foliage be preserved in health as long as possible by occasional syringing, full ventilation constantly, and due supplies of water or liqnid manure at the roots.

Muscats Ripening.—Unless the season is exceptionally fine, and tbe Vines started early, Muscats reqnire fire heat to insure their perfect maturation, even when ripening at the hottest part of tbe year. The time taken by Muscat of Alexandria to ripen is not less than six to eight weeks from commencing to colour, and if the Grapes are extra fine, and the Vines in vigorous healtb, perfect finish is not bad for some time longer. They require time, with assistance from fire heat, so as to secure a night temperature of 70°, 75° to 85° by day, up to 90° or more, with abundance of air. A ratber dry atmosphere is essential to tbe attainment of tbat golden hue characteristic of rich and full Muscat flavour. This is secured by free ventilation, a little constantly, but the atmosphere must not become arid, damping down occasionally. In large houses the moisture arising from the borders is enough, except in hot weather, then the borders and patbs should be damped daily. Too much moisture is fatal to Muscats when ripening, causing them to "spot," tberefore it is necessary to have a gentle warmtb in the hot-water pipes, and a little air constantly to prevent the deposition of moisture on tbe berries. Abundant supplies of water must be given to the roots, for when tbere is a deficiency of moisture the Grapes shrivel. With the borders properly constructed, and the drainage thorough, too much water can bardly be given at the roots, after the leaves are full-sized, until the Grapes are well advanced in ripening. Needless waterings, however, are baneful, causing shanking, and driblets, mere damping of the surface, very ineffective, doing quite as much harm as good, besides being deceptive of the right indication of the soil beneatb as regards moisture.

Young Vines.—Canes planted this season should, provided they are to be cut down to the bottom of trellis, leaving tbree buds there for furnishing a continuation of tbe rod and two side sboots for bearing next year, be allowed to grow unchecked, so as to secure a good root formation and sturdy stems. Any Vines intended for producing full crops next season on the extent considered sufficiently stout in rod, should have the laterals issuing from the side of the buds to which they are to be shortened, stopped to one leaf, and the principal leaves kept free of growths. If permanent Vines tbe cane need not be shortened till it has grown to the top of the bouse, cutting back at tbe winter pruning to three good buds from the bottom of the rafter or trellis, and only allowing the side growths to bear each a bunch of Grapes in the second year to prove the variety, taking the leading growths forward without cropping. Supernumeraries intended for next year's bearing and then to be removed should be stopped at a length of 7 to 9 feet, pinching the laterals to one leaf, and sub-laterals in like manner. Tbese ought to be shortened in September, and by degrees cut away close to the cane, and in a fortnight afterwards the Vines should be pruned to the first plump bud below tbe first stopping, leaving tbe old leaves to die off naturally. Thorough ripening of the wood is important, a free circulation of air being necessary. with fire heat if tbe weather be cold and wet.

Melons.—*Stopping and Removing Growths.*—During moist and warm weather tbe plants grow rapidly, and should be gone over at least once a week, and in tbe case of vigorous plants twice, for the removal of superfluous shoots, tbe principal growths being fully exposed to ligbt. Overcrowding is the greatest evil in Melon culture, because the excessive foliage mnst be thinned, and its removal results in exudation from the wounds, gangrene sets in, and the affected parts perish through "wet rot" (bacterial growths) or mould (fungoid developments). To arrest tbese antiseptics must be used. The best for the purpose is quicklime, rubbing it well into the affected parts, and repeating as necessary. But the worst effect of removing a large quantity of growtb is giving a check to the fruit, not unfrequently causing it to cease swelling, and it becomes hard in the flesh. Fungoid growths fasten on the exudation, and moisture settles on. the fruit, commonly at the blossom end, where ripe rot fungus obtains a seat, and gaining access to the flesh causes it to decay wben it should ripen. Tbese disasters are generally preventible by attending to the thinning and stopping of the growths. Therefore when the fruit is set and swelling tbe laterals should be pinched to one leaf, and if this results in too much foliage, so tbat the leaves on the primary growths are crowded or shaded by them, thinning must be resorted to, removing a little at a time.

Watering.—If Melons are kept too dry a check is given that will canse the plants to collapse before the fruit is fully developed, and that ripens prematurely. The great point is not to allow flagging at any time, and yet not to give water until the soil is getting rather dry, when a thorough supply shonld be afforded. Plants witb a large extent of rooting space usually need water or liquid manure once a week, those with less rooting area twice a week, and those in pots or boxes once or twice a day. Regard mnst be had to the weather and the actual needs of the plants. When setting and ripening it will be sufficient to keep the foliage from flagging, and if watering is necessary it sbould be given without wetting the surface more than can be helped.

Damping and Syringing.—At the time of setting and ripening moisture must be entirely withheld from the atmosphere, but tbe paths and walks of houses may be damped in tbe morning and early afternoon, or occasionally only in not very bright weatber. When the blossoms are about expanding witbhold water from the foliage or the fruit will not set, and when the fruit is ripening it must not be wetted or a close moist atmospbere kept, as these are fatal to flavour and often the cause of the fruit cracking. With the fruit swelling syringe well at closing time, and if morning syringing is practised it should be done early; but the liberal damping of the paths is better than wetting the foliage. Plants in frames shonld be sprinkled at closing time, being careful to keep the water from the neck or collar of tbe plants.

Temperature.—In most cases fire heat is not now reqnired, as witb due regard to early closing tbe night temperature may be kept from falling below 65°. In dull periods, however, a little fire heat may be desirable to maintain a buoyant atmosphere when the fruit is setting or ripening. Plants at those times are better for linings, so as to allow of a circulation of air, otberwise the temperature will be ruled by external conditions, yet it ought to be maintained at 65° at night and 70° to 75° by day.

Ventilating.—Nothing answers better than leaving a little air on at night to prevent excessive moisture, increasing the ventilation early in the morning of fine days when the temperature bas advanced to 75°, and gradually increase it witb the rising beat, keeping through the day at 80° to 90°, and closing sufficiently early to rise to 95° or 100°, and before nightfall admit a "crack" of air at the top of the bouse. When tbe fruit is ripening admit air freely, a little constantly, as it is moisture on tbe rind and pent up moisture in the fruit that causes cracking. Likewise when the fruit is setting allow a circulation constantly, as moisture on the fructifying organs causes their destruction.

Routine.—Put supports to the fruits before they become beavy and kink the Vine, letting the board slant so as not to bold water. Place slates beneath the fruits of plants in frames, raising the Melons as they advance in swelling on inverted flower pots above the foliage, but retaining the slates for the fruit to rest on. After a period of dull weather it is desirable to afford a slight shade for a few hours in the hottest part of the day to prevent the foliage flagging, and tender fruit from being scorched. A slight shade is useful over fruit in the ripening stage when it is exposed directly to the sun, especially when the plants do not, from indifferent vigour, supply moisture to the fruit freely.

Insects.—Black apbides sometimes become troublesome. The best remedy is fumigation with tobacco paper on two or tbree consecutive evenings, taking care to bave the foliage dry and to deliver the smoke cool. Avoid an overdose and mat up frames to keep in the smoke. Thrips also yield to tobacco smoke. For red spider there is nothing better tban proper moisture in the atmospbere and soil. A little flowers of sulphur on slates so that tbe sun can act upon it gives off fumes bateful to red spider and fungous pests. Canker is caused by damp in many cases, but it is inherent in some varieties. It is averted by a drier atmosphere and keeping water from the stems; to arrest it rub quicklime into the affected parts until dry, repeating if necessary. By tbose means tbe plants can generally be kept alive until the crop is perfected.

THE FLOWER GARDEN.

Carnations.—If not already done a mulching of old Mushroom-bed manure or leaf soil should be given Carnations after very lightly loosening the surface, and giving a good watering. Tbis will serve to prolong tbe display considerably. The Margaret Carnations, if raised moderately early and duly planted out, will flower strongly in August or September, tbough not if they are topped; give these also the benefit of a mulch.

Propagating Carnations.—If the smaller side shoots are slipped off now these will root quite as readily as Pinks in a frame or handlights placed at the foot of a north wall or fence. In warm moist localities bottom heat may be dispensed witb, but a very slight hotbed is of good assistance. Pack enough material inside the frames to raise about 4 inches of loamy gritty soil well up to the light, and face over with sharp sand. Little or no trimming is required by short slips, but longer cnttings or any upwards of 4 inches in length should be shortened, not, however, by cutting with a knife, the better plan being to pull tbem cleanly apart at a joint. Fix them firmly in the soil, give a gentle watering, and keep close and shaded from what brigbt sunshine reaches the frame till rooted.

Saving Pink Seed.—Seed if ripe may be either stored till next spring, or else be sown at once. When quite new yet properly ripened it germinates quickly either on a well prepared border or in boxes set in a cool shady position. If not sown very thickly neat little plants will be formed before the winter arrives, those in boxes being kept in cool frames. Mrs. Sinkins, and varieties raised from that robust popular form, come quite true from seed, and young plants partaking somewhat of a perpetual flowering character are more likely to flower the same season they are planted out than are the more delicate varieties.

Hollyhocks.—Red spider can be destroyed by mixing a handful of flowers of sulphur into a paste and then mix it with two gallons of clear water, and with a syringe tboroughly wet both the under and upper surfaces of the leaves. Black fly is also prevalent on Hollybocks in some gardens, and this may be got rid of by means of tobacco powder or strong snuff, puffing this well over the under side of the leaves. No side shoots should be allowed to grow on any of the plants. They ought to be kept well supplied with moisture at tbe roots, and be given a mulching of short manure. If leaf buds are found at the axils of the leaves of any side shoots removed, tbe latter may be cut into short lengtbs, placed singly in small pots, and rooted in a gentle but not very moist heat. All that develop into plants should be shifted into larger pots before they become much root-bound.

Dahlias.—Old stools push up very many more shoots than should be left to grow, much better results following upon tbe practice of confining the plants to a single stem, or at the most two stems. These being kept properly secured to a strong stake, will branch strongly and produce either a few extra fine blooms for exbibition purposes, or an abundance of ordinary good flowers. If the former are desired about

four stakes should be placed to each plant, and some of the best placed branches be fastened to these, the rest being cut away, or better still early pinched out. Dahlias require abundance of moisture at the roots, a good mulch of strawy litter further serving to keep the ground cool and moist.

Gladioli.—Stakes should be placed to these before the spikes become heavy, frequent syringings and waterings also being necessary if fine spikes and large flowers are desired. In order to have the spikes for exhibition with the flowers well together and all facing one way they ought to be enclosed in a V-shaped trough, made by nailing two long thin pieces of board about 4 inches wide to a strong stake. With the aid of these troughs it will also be an easy matter to shade the lower flowers with newspaper, with a view to keep them fresh and of good colour to match the upper flowers.

THE BEE-KEEPER.

Honey Prospects.

The first week in July has been dull and cold, and as there has been little sunshine, this combined with a low temperature and high winds has kept the bees comparatively idle. This is discouraging to bee-keepers, as in this district the bee forage has been better than usual. The white Clover is still a mass of bloom, and the Limes are just opening their flowers; but unless a change soon takes place in the weather the honey crop will be a light one. It, however, illustrates what I have often stated—that, given fine weather, bee-keepers in this country could hold their own both in quantity and quality with bee-keepers in any part of the world. In some countries fine bright weather may be depended on for several weeks in succession, and a large surplus of honey is stored in consequence, although the flowers from which the finest samples of honey are obtained are not nearly as plentiful as during the honey flow in favoured districts in this country.

As is well known to all bee-keepers, white Clover yields a superior sample of honey; and showing to what an extent it is cultivated in some parts of the country, I may state that within a radius of two miles of my apiary there is nearly, if not quite, 500 acres grown. Bee-keepers can imagine the benefit bees derive from such a source if the all-important factor the weather is favourable; but when day after day is sunless, or nearly so, and the flowers are gradually dying after being developed for several weeks without the bees obtaining any benefit from them, it is discouraging.

From numerous letters received, I am inclined to think that the honey harvest has been much better in the south and west of England than it has been in the northern and midland counties. "S. T.," writing on the 30th ult., says, "I am busy extracting from full sized frames worked on the doubling system, as advocated in the *Journal of Horticulture*. My first eleven frames gave me 60 lbs. of beautiful honey. My numerous shallow frames and sections are well sealed over. I, however, prefer the standard frame for doubling, and shall use it more largely in the future, as a greater bulk of honey is obtained, and not so much risk from the bees swarming." The above is very gratifying, and shows what can be done under good management, where the bee forage was at least a fortnight earlier than in this district; and as much more favourable weather for honey production prevailed at that time, it will doubtless be found at the end of the season that bees in the more forward districts will have done much better than those in the later parts of the country.

Bees in Straw Skeps.

Bees that are in skeps, whether old stocks or swarms, may be utilised in many different ways without destroying the bees, and a much larger surplus can be obtained than by working on the orthodox system associated with straw skeps. If a glass super is placed on the top of skep, which is still done by many bee-keepers, at the most it will only hold a few pounds of honey. The same may be said if the bees are allowed to swarm, and after they have filled the skep with combs no extra room is provided for them. Of course under the modern system a crate of sections may be worked on the top of a skep and be as well finished off as those placed in an elaborate and more expensive bar-frame hive.

At the present time I have several straw skeps that for weight of honey will compare favourably with my frame hives. Although the honey may not be of as good quality according to modern ideas, still some of my customers ask for it; there is therefore no difficulty in finding a market for it when obtained. Early in the spring the bees in straw skeps were encouraged to breed early by being fed daily, and as they were kept warm they increased at a rapid rate. By the first week in May they were ready for swarming. An artificial swarm was then taken from each in the usual manner, care being taken that sufficient bees were left in the skeps to cover the brood, and to raise a young queen. The bees so obtained were placed in frame hives with fully drawn-out combs, each stock being given a frame of brood taken from a strong colony. They increased at a rapid rate, and were afterwards used to obtain a surplus in the usual manner.

Bees from Skeps to Frame Hives.

Three weeks after the queen and worker bees were driven from straw skeps the same operation was again repeated, until the young queen, which had now hatched out, was seen to run up into the empty skep with her attendants. These were then shaken into a skep filled with clean combs, the hole in the crown being covered with a piece of queen-excluder zinc. The skep from which the queen and bees had been driven was then placed on the top of skep containing the queen, the latter being kept in the bottom skep by the excluder zinc on the top, through which the bees would gain access to the combs in the skep, which now formed a super. Within a few days the young queen had become fecundated, and was laying. As soon as the combs were filled with brood the driving process was again repeated until the queen was seen to run up into the empty skep.

The queen and bees were then placed in a frame hive on frames of fully drawn-out combs, a sheet of queen-excluder zinc being placed on the top of frames. The two straw skeps were then placed on top of frame hive and covered up warm. The queen is now filling the frame hive with brood, the honey being taken into the skeps which form supers over the brood nest. When the honey flow is over all that is necessary is to remove the skeps a short distance from their stand, and the bees will fly home, or they may be driven in the usual manner. A strong colony headed by a young fertile queen will now be in the frame hive, which if supplied with sufficient stores will doubtless winter well and come out strong and healthy in the spring, and may then be used for whatever purpose they are required.

This is a simple way of working bees from skeps into frame hives, as the operation does not take many minutes to perform, for directly the queen is seen to run up into empty skep the drumming should cease, as the workers will not leave the queen without supplying her with plenty of attendants. If there is an objection to honey obtained from a straw skep it may be removed from the top of frame hive as soon as the brood is all hatched out, and a crate of sections or shallow frames placed on the top instead of straw skep.—An English Bee-keeper.

TO CORRESPONDENTS

*** All correspondence relating to editorial matters should, until further notice, be directed to "The Editor," *8, Rose Hill Road, Wandsworth, London, S.W.* It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects, through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Thrips on Vines (*A. F.*).—The best means of dealing with thrips on Vines is to fumigate with tobacco paper or vaporise with nicotine essence. There are self-acting fumigation rolls and other advertised preparations, all answering for the destruction of thrips. It is necessary, however, to repeat the fumigation, at intervals of about four days, two or three times, so as to destroy any hatching out from the eggs, which are not reached destructively by the fumigation or vaporisation. Sometimes, also, stray thrips escape being killed, hence the need of following up so as to get rid of the pests effectively. With care, neither the smoke nor vapour will injure the foliage; but, of course, it must not be overdone, and the foliage must be dry.

Photograph of Grapes (*Barry Dock*).—One of the best photographs of Grapes we have seen has been sent to us, but as it contains no endorsement, and as a letter referring to these Grapes cannot he found, we shall be obliged if the grower of them, if this request should meet his eye, will communicate with us on the subject. We have been informed that they have been grown by following instructions which have been given in the *Journal of Horticulture*.

"Rust" on Grapes (*Blakedown*).—This is occasioned (1) by excessive moisture suddenly evaporated from the berries, such as allowing the house to remain closed for a time in the morning when it ought to have air, and then throwing the ventilators open; (2) rubbing with the hands or head in thinning, &c.; (3) steam arising from hot-water pipes; (4) using hard or irony water for syringing; (5) fumes of sulphur arising from it on hot-water pipes; and (6) sudden depressions or fluctuations of temperature. It may also arise from insect or fungoid attacks, but generally through cultural defects.

Judging Flowers (*H. W. G*).—We do not know whether all judges have a copy of the Royal Horticultural Society's Judging Code with them when adjudicating at shows; but we know that some of the most experienced judges have it in their possession. Not judges only, hut exhibitors, should have a copy of the rules for reference from time to time, as may he needed. This Judging Code, which contains the chief points of merit and defects in various kinds of flowers, fruit, and vegetables, can he had in return for 1s. 1d., sent to the Secretary, Royal Horticultural Society, 117, Victoria Street, Westminster.

Exterminating Cockchafers (*Chy*).—The hest plan of dealing with the adults infesting trees is to place sheets on the ground in the morning, or on dull days early in the afternoon, when the beetles are clinging beneath the leaves, and are dull and not likely to take wing. They may he swept together, after shaking off the trees or shrubs, and destroyed. There is no better plan than the shaking down to get rid of the heetles, hut children on a summer's evening will catch hundreds with an ordinary butterfly net on a cane. We hardly think, however, that you have the May hug (Melolontha vulgaris), but the June bug, or lesser May bug (Phyllopertha horticola), generally the commoner insect, and usually confounded. Both have a similar life history. After pairing the female hurrows into the ground to a depth of about 6 inches, and deposits thirty or more whitish or pale yellow eggs, from which hatch small whitish-yellow grubs, and in the spring feed on roots of growing plants, where they soon become thick and fleshy, and often so shear off the roots as to make the affected plants wither, especially grass on lawns in had cases. In the winter they descend deeper into the soil, hut only to come up again the following spring and pursue their feeding. Thus they work for three seasons until full-fed, when the gruhs are large and descend deep into the earth, sometimes 2 feet or more, change to pupæ in oval cells, becoming perfect insects hy the following spring, and in due course appear ahove ground. At that time the starlings are ready to receive them, as they have young with strong appetites, and poultry delight in the chafers, also pigs. Thus in May, June, and July the beetles appear in the fourth year from the depositing of the eggs. For the grubs there is nothing better than a dressing of kainit and nitrate of soda, 7 lbs. of the first and 1¾ lb. of the latter per rod, applying when the gruhs are active near the surface. The amount named is for had cases; in moderate affections half quantity suffices.

Melon Leaves Diseased (*D. J.*).—The leaves have succumbed to the attacks of a fungus, Phoma lanigera, which, hy its mycelial hyphæ in the tissues, causes them to wither as if scorched. The germ tubes from the spores of the parasite enter the leaf tissue where the spots appear, and the minute pustules or receptacles of the "fruits" appear later. In some seasons the pest is very troublesome, as it causes the destruction of the foliage to a great extent before the fruits are fully swelled, and they in consequence do not finish, while in had cases the plants die from the leaves downwards, being perfectly sound in stem and roots, yet so affected as not to push laterals, and the fruit cannot possibly swell or ripen. The cause is the spores of the fungus gaining access to the plants, but how is matter for speculation, and the predisposition commonly arises from excess of vegetahle matter in the soil, with a somewhat close and moist atmosphere. The best preventive we have tried has heen the addition to the soil of calcareous matter; we having used hasic slag phosphate, a good handful (4 ozs.) per square yard, mixed with the soil after placing in the hed, with good effect. The hetter plan, however, is to use a mixture of hasic slag phosphate and kainit in equal parts, sprinkling 2 ozs. of the mixture on each square yard of the turves as placed in the layers of about 3 inches thickness in the autumn. The lime evidently gets converted into nitrate, and thus readily taken up hy the plants, appears to act against the inroads of the fungus. We have also found that top-dressings of the advertised fertilisers act well as preventives by fortifying the plants with lime and other mineral elements, so that they successfully resist the fungus, especially when the structures are well ventilated, particularly in the early part of the day, so as to prevent the germination of the spores. Indeed, air appears the best preventive combined with lime in the soil. We have known a dressing of three parts bone superphosphate, one part muriate of potash, and half a part sulphate of magnesia, mixed, using 2 ozs. per square yard, to act well; but the usual fertilisers contain these ingredients, and are handy.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool the worst. Not more than six specimens can he named at once, and the numhers should he visihle without untying the ligatures, it being often difficult to separate them when the paper is damp. (*C. G. M.*):—1, Habrothamnus elegans; 2, Coprosma Bauriana variegata; 3, Centropogon Lucyanus. (*D. S.*).—1, Odontoglossum citrosmum; 2, Cassia corymhosa. (*T. C. R.*).—1, Tradescantia virginica; 2, Lucalia gratissima; 3, Centaurea speciosa; 4, Alströmeria aurantiaca; 5 Astrantia minor. (*V. Z.*).—Crinum capense. (*R. P.*).—If growing under glass the specimen is Jasminum rubigerum, if out of doors J. revolutum.

TRADE CATALOGUES RECEIVED.

Letellier et Fils, Caen, France.—*Cinerarias and Cannas.*
J. Sharpe & Son, Bardney.—*Agricultural and Vegetable Seeds.*

COVENT GARDEN MARKET.—JULY 14TH.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	0 0	to 0 0	Lemons, case	11 0	to 14 0
Filberts and Cobs, 100 lbs.	0 0	0 0	St. Michael's Pines, each	3 0	8 0
Grapes, lb....	0 8	2 0	Strawberries, per lb.... ...	0 3	1 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, ½ sieve	0 0	0 0	Onions, bushel	3 6	4 0
Beet, Red, doz	1 0	0 0	Parsley, doz. bnchs	2 0	3 0
Carrots, bunch	0 3	0 4	Parsnips, doz	1 0	0 0
Cauliflowers, doz.	2 0	3 0	Potatoes, cwt.	2 0	4 0
Celery, bundle	1 0	0 0	Salsafy, bundle	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Seakale, basket...	1 6	1 9
Cucumbers...	0 4	0 8	Scorzonera, bundle	1 6	0 0
Endive, doz.	1 3	1 6	Shallots, lb.	0 3	0 0
Herbs, bunch	0 3	0 0	Spinach, pad	0 0	0 4
Leeks, bunch	0 2	0 0	Sprouts, ½ sieve	1 6	1 9
Lettuce, doz.	1 3	0 0	Tomatoes, lb.	0 4	0 0
Mushrooms, lb.	0 6	0 8	Turnips, bunch	0 3	0 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var. doz. ...	6 0	to 36 0	Heliotropes, per doz. ...	4 0	to 6 0
Aspidistra, doz....	18 0	60 0	Hydrangeas, doz.	8 0	10 0
Aspidistra, specimen ...	5 0	10 6	Lilium Harrisi, doz.... ...	12 0	18 0
Calceolarias, doz.	3 0	6 0	Lobelias, doz.	2 6	4 0
Coleus, doz.	2 6	4 0	Lycopodiums, doz.	3 0	4 0
Dracæna, var., doz.	12 0	30 0	Marguerite Daisy, doz. ...	6 0	9 0
Dracæna, viridis, doz. ...	9 0	18 0	Mignonette, doz.	4 0	6 0
Euonymus, var., dozen ...	6 0	18 0	Myrtles, doz.	6 0	9 0
Evergreens, var., doz. ...	4 0	18 0	Palms, in var., each... ...	1 0	15 0
Ferns, var., doz.	4 0	18 0	,, specimens	21 0	63 0
Ferns, small, 100	4 0	6 0	Pelargoniums, doz.	8 0	12 0
Ficus elastica, each	1 0	7 0	,, Scarlet, doz.	3 0	5 0
Foliage plants, var., each	1 0	5 0	Rhodanthe, doz.	4 0	6 0
Fuchsias, doz.	4 0	6 0	Spiræa, doz.	6 0	9 0

Bedding plants in great variety.

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchid Blooms in variety.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms ...	2 0	to 4 0	Marguerites, 12 bnchs. ...	2 0	to 3 0
Asparagus Fern, bunch ...	2 0	3 6	Mignonette, doz. bnchs. ...	2 0	4 0
Bouvardias, bunch	0 4	0 6	Myosotis, doz. bunches ...	1 6	2 0
Carnations, 12 blooms ...	1 0	3 0	Orchids, var. doz. blooms.	1 6	12 0
Cornflower, doz. bnchs. ...	1 6	3 0	Pelargoniums, 12 bnchs. ...	4 0	6 0
Eucharis, doz.	3 0	4 0	Pinks, doz. bnchs.	2 0	6 0
Gardenias, doz....	2 0	4 0	Pyrethrum, doz. bnchs	1 6	3 0
Geranium, scarlet, doz. bnchs.	4 0	6 0	Roses (indoor), doz.... ...	0 6	1 0
Gladioli, doz. bnchs. ...	4 0	8 0	,, Tea, white, doz. ...	1 0	2 0
Iris (var.), doz. bnchs. ...	4 0	0 0	,, Yellow, doz. (Niels)	1 6	4 0
Lilium longiflorum, 12 blooms	2 0	4 0	,, Red, doz. blooms ...	1 0	3 0
Lily of the Valley, 12 sprays	1 0	2 0	,, Safrano (English) doz.	1 0	2 0
Maidenhair Fern, doz. bnchs.	4 0	8	,, Pink, doz....	3 0	5 0
			,, outdoor, doz. bnchs.	2 0	6 0
			Smilax, bunch	3 0	4 0
			Tuberoses, 12 blooms ...	1 0	1 6

CROP PROSPECTS AND THE FOOD SUPPLY.

IT has been generally understood of late—that is to say, during the last few months—that the world's supply of Wheat, and other breadstuffs equal to Wheat, has been barely sufficient for the demands which would be made upon it before the forthcoming harvest could be placed upon the market. That this idea may have been an exaggerated one is probable, for the price of Wheat has

steadily declined since the autumn, and is falling still; yet the fact that the sufficiency of the world's food supply has been called in question lends additional interest to the prospects and estimates of the produce of the crops now growing. Our own crop is so insignificant in proportion to the world's growth, that it is hardly worth taking into consideration; but we may observe in passing that though the Wheat crop cannot approach the fine crop of last season, owing to thinness of plant, it may yet turn out to be an average one.

The chief interest as regards foreign Wheat supply centres in America. The June report of the American Department of Agriculture has been published, and should give us a good estimate of the position of the growing Wheat in the United States. The great difference between this report and the unauthorised newspaper or trade reports previously published, is very marked, and it is quite evident that either a great change for the worse has come over the American Wheat crop, or that organised and systematic attempts have been made to unduly "*bear*" or depress the markets for speculative purposes. To take the case of the Wheat in California, the condition of the crop in May was stated to be 97 per cent. of a full crop; but the official report only estimates the condition for June as 73 per cent.

The condition of winter Wheat in the States taking the whole country is 78·5 against 80·2 for May, and 77·9 for June, 1896, whilst the acreage has been reduced by 1,232,000 acres in the year, or more than 5 per cent. The condition of spring Wheat is 89·6, or 10·3 less than last year, but the acreage is larger by about the same amount that the winter Wheat has decreased. Taking winter and spring Wheat together the condition is 82·7 against 87·6 last year, thus we have a 5½ per cent. diminution in condition on a similar acreage. The statements that have been made that the crop would be one much heavier than that of 1896 must therefore be very far from the truth; on the contrary, a much smaller yield must be expected, and English farmers must take this into account when estimating the probable run of prices for the winter.

On the continent of Europe crop prospects vary considerably. In France things are not promising, and expects a deficiency of 6,000,000 qrs. on the year. In Russia, Hungary, and Roumania a very similar state of things prevails. Spain, Germany, Holland, and Italy report an average prospect, but nothing more. India has not yet recovered from her year of famine, and at present will be fully occupied in supplying her own needs; whilst in Australia and Argentina the weather conditions have been very unfavourable. Taking the world's Wheat therefore as a whole there is little probability of a fair harvest; indeed, there is every likelihood of a poor one. There have been so many scares in the past as to the possibility of a food famine on a small scale, scares which have been proved to be entirely unfounded, that the consumer has become lulled into a sense of security. We trust the awakening may not be a rude one, for a very small real deficiency would lead to a very large increase of price.

We think we have shown that there is good reason for believing that Wheat will not come any lower in price, but will more likely have a rise. As regards Barley it is to be feared that another tale will have to be told. The growing crops look well enough, and we should think that the yield so far as we have observed will be an average one; also the straw is not too long, and appears able to keep upright if the weather be anything like favourable. But Barley is now imported from so many new sources, and so much of it is sounder and paler in colour than our own, that maltsters and brewers can afford to look on with equanimity when, as last season, the English farmer's crops are being ruined.

Our readers may remember how rapidly the price of sound Barley rose during and immediately after the disastrous weather of last September. The brewers were alarmed and anxious about their malt supplies; but what was the outcome? Fine Barley from abroad was provided in abundance, and before the season was over the price of fine English had fallen 10s. or 12s. per quarter. With an experience like that fresh in our minds, can we expect to get much more than 25s. for our Barley, even if it be good enough for Bass?

Oats have been suited by the recent forcing weather, and will be much better all round than last year, which will help to make up for lower prices which are certain to prevail.

We are very curious to see the agricultural returns with the present acreage under Potatoes. There is hardly a grower to be found who does not confess to having reduced his acreage of Potatoes. In some cases not half as many are being grown as in 1896, and we shall be much surprised if we do not see something very striking in this direction in the returns. The crop promises fairly well, but is backward; as, however, there is a large increase in the proportion of early varieties as compared with late ones, there will be an ample supply during the early months of the season. The diminution in the area of good-keeping kinds may make itself felt as spring approaches. The Potato grower needs a turn, having had two bad seasons in succession, bad, not from the smallness of the crops, but owing to very inferior quality and too much bulk.

If growers could only be induced to combine in growing high quality the crop would be a paying one, but the Giants and Colossals now grown so largely draw heavily on the land, and only benefit the salesmen and the railway company.

WORK ON THE HOME FARM.

We have had a fine week, and very fortunate has it been, for what with haymaking and Turnip hoeing we have not known which way to turn first. Mangolds having been backward have wanted attention just when the Swedes were beginning to do so, and the later Turnips having grown more rapidly than either, all the striking and singling wants doing at once. So necessary is it to have Turnips thinned out and weeded at the proper stage of growth, that we are allowing some of our hay to stand a little longer.

Swedes are all singled, but will require looking over again for weeds, those struck out during the wet weather having grown a little between the rows, and the few weeds it is inevitable to leave behind being now much in evidence, and soon will be in flower. The horse hoe must be kept constantly at work as long as it is possible to get it between the rows comfortably.

It has been splendid weather lately for the hay, windy, with not too much sun. The Clover and grass have made beautifully, without being unduly shrivelled. A continuance of such weather for another fortnight would see the hay harvest finished, and with a fine crop well gathered the farmers of the country would have great cause for self congratulation.

Having got the Mangolds hoed, we are now giving them a top-dressing of sulphate of ammonia at the rate of 2 cwt. per acre. There is nothing better for Mangold than this. The roots grow rapidly, get a good size, and are very solid and sound. The few bits of corn laid by the rain has been blown up again by the wind, but there has been quite wind enough for the corn generally, as the ears begin to fill and gain in wet the high winds knock them about sadly.

Pastures are now good everywhere, and by emptying a field or two where the grass has run away from the stock and running the machine over them an extra hayrick may be picked up easily and put by until there is a less favourable season.

The horses have had an easier time of late, and are now eating vetches without corn; in fact, we knock off the corn for a couple of months from midsummer. This course has an excellent effect on the limbs and general health of the animals.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

DATE.	9 A.M.					IN THE DAY.				Rain.
1897. July.	Barometer at 32° and Sea Level.	Hygrometer. Dry.	Hygrometer. Wet.	Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature. Max.	Shade Temperature. Min.	Radiation Temperature In Sun.	Radiation Temperature On Grass.	
	Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Inchs
Sunday 4	30·047	63·5	52·4	N.W.	62·8	68·0	52·4	116·2	47·4	—
Monday 5	30·029	61·8	57·9	S.W.	62·6	76·8	50·2	124·9	43·9	0·010
Tuesday 6	29·760	60·0	54·7	W.	63·3	71·0	58·1	125·2	56·8	0·010
Wednesday 7	29·792	59·6	51·4	W.	62·9	69·2	50·3	117·8	46·9	—
Thursday .. 8	29·981	61·2	51·2	S.W.	61·9	72·2	44·0	117·7	36·1	—
Friday 9	30·002	59·4	54·3	S.W.	62·6	73·6	55·8	119·8	52·3	—
Saturday .. 10	30·214	68·1	58·7	N.	63·2	78·6	59·8	130·1	56·4	—
	29·975	61·9	54·4		62·8	72·8	52·9	121·4	48·5	0·020

REMARKS.

4th.—Bright early; alternate cloud and sunshine during the day.
5th.—Bright early, generally cloudy from 8 A.M.; a little rain at night.
6th.—Fine, but generally cloudy, and overcast at times.
7th.—A sprinkle of rain early; fine and sunny throughout the day.
8th.—Generally sunny in morning, but much cloud in afternoon.
9th.—Overcast morning; bright sun at times in afternoon.
10th.—Bright sunshine throughout.

Another very fine week, but with no very high temperatures.—G. J. SYMONS.

Journal of Horticulture.
THURSDAY, JULY 22, 1897.

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CHISWICK:
Its Work, Wants, and Possibilities.

BEYOND a passing allusion, or brief records of the decisions of examining committees little has been said in these columns of late on what may not be inappropriately referred to as this ancient and modern seat of experimental horticulture.

There was a time when Chiswick seemed almost to be abandoned by those who were responsible for the conduct of the Royal Horticultural Society. The gardens were starved, the structures neglected, and the resources of the late Superintendent, who conducted them so well over so many years, were often taxed to the utmost in keeping them in presentable condition, and the crops in a healthy state.

For some time, however, prior to Mr. Barron's well-earned rest from active labour, both the disposition and the means were forthcoming to give better support to the famous old enclosure, the result being steady progressive improvement. The foundation was laid in recent years for still further progress, and while it must in justice be said that the present Superintendent has made the best of his opportunities, he would be the last man not to recognise and appreciate the share of the able gardener whom he has had the honour to succeed, in bringing them into the present satisfactory state.

An opportunity was afforded on the 14th inst. for a considerable number of scientific and practical men to inspect the gardens and spend a most enjoyable day therein. The President and Council of the Royal Horticultural Society issued cordial invitations to the several members of the respective Committees to meet them on the occasion, and a concise programme was prepared for the guidance of all. It was briefly (1) the inspection of the gardens at 12 o'clock, (2) luncheon at 1.30, (3) discussion at 3 o'clock, terminating at 4.30—a business-like allocation, and convenient to many busy men. "Time" was kept with admirable promptitude, and it will be admitted by all who had the good

fortune to be present that every item in the programme was highly appreciated.

The day was one of the brightest and hottest of the season, but this did not deter most of those who assembled from making a thorough exploration indoors and out, seeing what was to be seen, and it may safely be said that little was missed in any of the departments. Those who could enjoy, as surely all must, a sight in the cultivation of Figs in pots had the opportunity of admiring, no doubt, the finest and best-grown collection of trees in Europe. Many of them were collected by the late Dr. Hogg. They were preserved and cultivated by Mr. Barron for many years, and it is fortunate that they have fallen into able hands. The present condition of the trees are a credit to all who have "handled" them, and a cherished possession of the Society.

Then the Vines were not overlooked, as they could not well be; for apart from other structures, have we not here the finest vinery of its kind in the kingdom, the large and lofty curvilinear span-roof, with its ladder on wheels like a gigantic moveable bridge, for attending to the Vines and thinning the four or five thousands of bunches of Grapes? The Vines are old, but show no deterioration in the condition they have presented any time during the past twenty years; but, on the contrary, invigoration.

This has been brought about mainly by a reduction of old rods and the increase of young canes, which produce better foliage, bolder axillary buds, and, consequently, finer bunches of Grapes than can possibly be obtained by the stereotyped close pruning of small laterals from generation to generation. It was also understood that there had been some "notching" of large fibreless roots in the hope of inciting the production of food-gathering fibres in the upper layer of soil. More time is needed for proving the results of the experiment, but having regard to the effects of similar practice we shall be a little surprised if still greater improvement does not follow in these forty-year-old Vines.

But speaking of surface fibres in a border previously destitute of them, it is possible that some of the visitors may not have observed a striking example of their quick production by a method as simple as it has proved effectual. It is not new, neither is it common, but because it has succeeded is worthy of mention here. As a matter of fact, the interlacing mass of quill-like roots referred to could not be seen by passers through the long and much too narrow structure without moving the thick mulching of lumpy manure under which they are happily working to the obvious advantage of the Vines. We have seen below the surface, however, and believe that more fresh young roots have been induced to take possession of the border in six months than could have been discovered at any time during the past six years. Will they remain? We must wait and see. We have known roots to permeate this narrow inside border before, and then depart either downwards or outwards, no one knows where. They have simply escaped, as Vine roots will sometimes, through some cause not easy to discover.

But how were they produced? We have said the structure is narrow. It is a mere glazed corridor, nothing like half wide enough. It would pay to widen it, and pay well. We know well that the idea of making Chiswick "pay" is shocking to some excellent educationists who have souls high above such sordid work as market gardening. We do not quarrel with them. They are right from their own point of view, but it is a point of view that is becoming obsolete by the great majority of students who are seeking knowledge in gardening. "Do nothing with the object of making Chiswick pay" was the substance of a letter read at the afternoon meeting; but it contained this significant proviso—"except it may be necessary for the instruction of the students." Exactly. That is the whole case. Students, above all things, want to see and learn those methods by which the greatest and most profitable returns are produced. Let science and practice go hand in hand, achieve the best results, and prove that they are so. If that is not educational, what is it?

There is no necessity to make Chiswick a "market garden" in the ordinary acceptation of the term. It should be essentially a garden of instruction, and show, so far as is practicable, the results of cultivation as based on sound principles, with contrasting examples of erroneous methods and the penalty of failure arising therefrom. Let it do that in Grape culture, Peach culture, Tomato culture, or any other culture, and let the reasons for success in one case and the cause of failure in another be clearly and precisely set forth; and here a scientific coadjutor might be of advantage in not only tracing effects to their cause, but making clear in exact terms the reasons for the differences that had to be recorded.

Returning to the Vines, which might have been made to illustrate in the most convincing way the value of the means resorted to for accomplishing the object desired. They had reached the limit, all too short, of extension. Nothing but repression, which, under the circumstances, amounted to mutilation, could keep them within bounds, by constantly pruning away the upper and better parts—a war of so-called Art against Nature struggling to be free. Mr. S. T. Wright, instead of further shortening these cramped Vines—mainly Gros Colmans—at the top, shortened them, so to say, at the bottom by drawing down the rods and bending them into excavations made in the border, affixing them firmly with stout pegs, packing fresh soil round them and keeping it moist. Thus 3 or 4 feet of head room was obtained for the best portion of the Vines, while the lower parts, which practically gave no fruit, were made to bristle with roots as shown in fig. 11, and from these in turn issued innumerable food-imbibing organs, the Vines responding by deeper green and stouter foliage, and freely swelling fruit. This is good, very good, and fuller effects will be seen next season than this, as the Vines were only "layered" early in the present year.

But now comes the point we wish to urge, and by which Chiswick, while proving by the best of all tests—crop values—the most excellent work, may, and should, be something very different from a market garden. If a few of these Vines had been left to struggle their way, and bear such crops as they could, and if these crops proved markedly inferior by comparison with the others wisely treated, then surely would the power of superior cultivation be impressed so firmly on the minds of inexperienced students as to never be forgotten; and further, if exact records were kept of the results of different methods, and these methods were carefully described, the published information would be of value far beyond the confines of the seat of such practical educational experiments.

Similarly, in the case of pruning the much older Vines in the much larger house, if a few of those Vines were allowed to carry an over-profusion of thin laterals and small leaves, and these laterals were closely spur-pruned, then would be seen by force of contrast the fallacy of such treatment, and the value of intelligent routine as represented by the far larger and more lucrative crop borne by contiguous Vines to which such routine had been applied. There are thousands of old and comparatively fruitless Vines almost all over the country that might be made to bear—as many have been made to bear—crops of fourfold value and more by a simple change in management, that costs no more than the old stereotyped rule-of-thumb method, which might have answered well when the Vines were young and the roots under the control of good cultivators.

Visitors to the gardens last week would see more Vines than those to which we have referred, including the high-sided span-roofed Muscat house, in which the Vines were not trained by Mr. Barron to the apex of the lofty roof, but horizontally across the house, a little above the base of the rafters. The result will soon be a golden ceiling of fruit. How much labour has been saved by this departure in dressing the Vines and thinning the Grapes it would not be easy to compute, while the Vines are in a great deal better state so far from the glass than are hundreds which are too near, or cruelly pressing against it. Most Vines are trained too near the roofs to which they are secured, and these Chiswick Vines tell us plainly that they suffer nothing by being

even some feet below the roof of the house; and their distance from it, in bringing the Grapes nearer, lends enchantment to the scene.

Passing from the Grapes in the course of inspection the substantial growth of Tomatoes in pots could not fail to be noticed — not sappy, flabby, luxuriant growth, but hard stems, with a minimum amount of pith in them, and leaves like cardboard. Why are Tomatoes, no matter what the varieties, nor whence the seeds come, invariably free from the "drooping" or other mysterious disease at Chiswick? Mainly because no mistakes are made in the treatment of the plants, though fungologists will scarcely be able to accept that reason. We have often wished that Mr. Barron had in his time purposely blundered, if he could, with some plants for "bringing on" the disease, as we have not the slightest doubt it has been brought on in hundreds of cases, though not in all, by errors in management; equally we should like to see Mr. S. T. Wright blunder also, with the same object, if he is capable of the task.

Dr. Masters, in his interesting address, which will be subsequently referred to, laid stress on the American practice of spraying for the prevention of fungoid attacks, and thought it might be tried at Chiswick. Dr. Plowright in response jocularly observed that after a search all through the gardens he "regretted" his inability to find any fungus to spray against. But if the resting spores of the "drooping disease" fungus lurk in the seeds, as seems to be the case, quicken and take possession of the plant germ, growing with the growth of the plant until this is overwhelmed, how is it that these fungus-bearing seeds fail to find their way to Chiswick? Seeds have come from nearly everywhere, but yet the plants are "clean." If Chiswick could "invite" the fungoid disease by ill-conditioned plants, and get the invitation accepted, it might teach a lesson of incalculable value.

A curious circumstance may be here related as bearing on the subject under notice. It may perhaps even be regarded as a "nut to crack" by some of our fungological friends. A small packet of Tomato seed was divided between Chiswick and a Tomato connoisseur. The Chiswick portion gave plants as healthy as plants could be. Every one of the gentleman's plants collapsed. They "looked queer from the first," his gardener said. Some of the miserables were examined by an "authority," whose verdict was "dirty seeds, fungus spores in them, bound to fail." The owner of the plants was of a different opinion. He saw all the seeds sown, as he thought much too thickly, and there was none to be examined. He found the young plants, after they had fairly started and looking well, one day quite sodden ed by, as he said an accident. They ceased growing, turned first a dark colour, then became mottled, and though the best was done to save them, they drooped and died. We wonder if such accidents ever happen at Chiswick. If they do, they should not be passed by in silence. The bad as well as the good should be noted there, and it would add to the instruction of the students and the public if there were something of both to note.

The desire to do all things well is a worthy aspiration, but a few blunders, and their results, such as in pruning for the production of wood and the prevention of fruit; in the non-thinning of fruit on an overladen tree or Vine, and in various other items of routine work in the several departments would afford object lessons which could not be ignored. Then what instructive themes would be afforded for lectures—which we think the Chiswick students should have from time to time—by scientific men; they can learn good practice from the superintendent. But it is feared that if the controlling power should decide to wait for the realisation of Dr. Masters' great conceptions before moving in the matter, it will only be the students of the distant future who will benefit by the teaching that he so laudably desires.

One other want of Chiswick—a very homely one, it is true, but if supplied would do more to improve the Gardens than anything else—is an extra generous supply of the best procurable manure, with as much good "holding" loam as could be obtained. The land has been overworked and underfed for years, and is getting poor and stale, especially the open vegetable and flower quarters. For fruit and Potatoes it may be rich enough, but for most other crops it is deficient in humus, and generally in a state that would drive a market gardener into the bankruptcy court. This is seen plainly enough in the Pea trials, where the land was well trenched.

Mr. Veitch thinks Chiswick is becoming too much of a town garden, and seems to favour emigration. True, it is the centre of a large population; but still, there does not seem to be much the matter with the forest trees around and the fruit trees in the garden, while it does not yet seem to be a struggle for life with the Roses. It is always well to look ahead and provide for the future; but as Chiswick in its structures has not been so well furnished

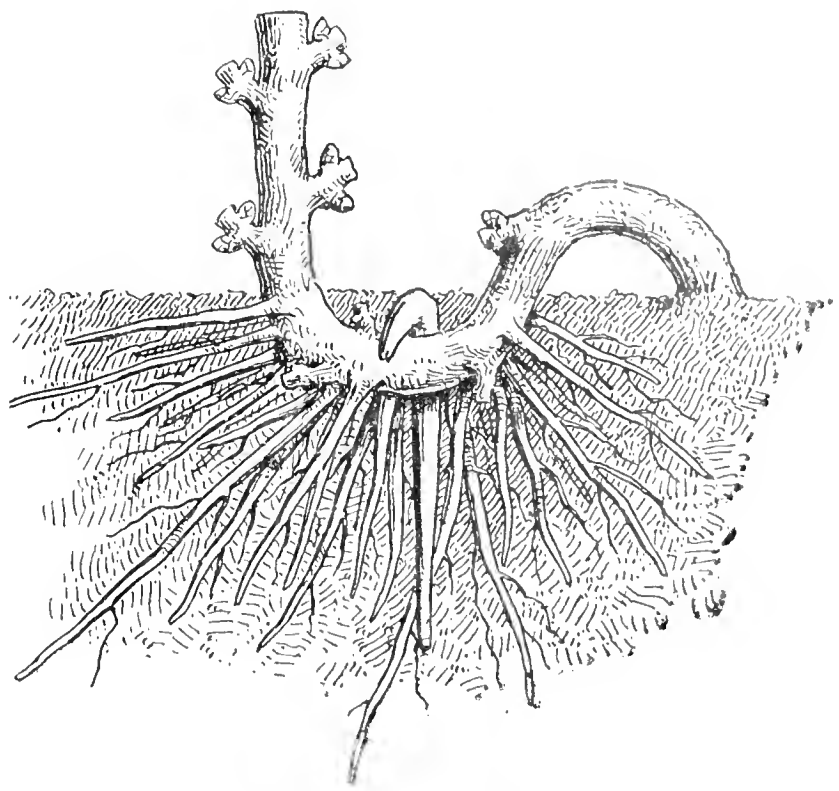

FIG. 11.—LAYERING OLD VINES.

before, and as the fertility of the soil can be increased, we suspect the cherished old garden will, under fair treatment, be capable of showing good results for several years to come.

Having entered somewhat fully, but by no means exhaustively, into the work, wants, and possibilities of Chiswick, as suggested by the first item in the programme, the other features may be dismissed more briefly.

THE LUNCHEON.

Provided in a large marquee on the lawn the repast was all that could be desired. We understood that 150 invitations were issued, and most of these must have been accepted. Sir Trevor Lawrence, Bart., presided, supported by Sir J. D. Hooker, F.R.S., and members of Council. Only one toast was proposed, "the Queen," and, as may be expected, it was accepted with unanimity.

The President then rose and gave to all a hearty welcome, expressing his pleasure that so many had been able to attend on the occasion. He desired to convey the Council's appreciation of the services of the different Committees, the members of which so willingly attended the several meetings for the sole object of aiding the Society to do all that could be done in the interests of horticulture. The Scientific, Plant, Orchid, and Fruit and Vegetable Committees did each in their sections work that could not be otherwise done so well, as the members possessed special qualifications, and some of them travelled long distances to discharge their duties without fear or favour. They gave their time freely, and not without cost to themselves, solely to advance the art in which all were interested, and in a spirit of good-will to the Royal Horticultural Society. The President's address and graceful references were accepted by the assembly in the same spirit that they were tendered, and this was of the best.

THE DISCUSSION.

"Dr. Masters, F.R.S., will open a discussion on Practical Suggestions for the Better Utilisation of Chiswick Gardens" was the announcement, and it brought together a large audience—at least,

all who attended the gardens appeared to be present. This is only what might have been expected, as not only is the Doctor a gentleman of distinguished scientific attainments, but the happy possessor of a charming disposition, and is one of the most popular men in the domain of horticulture.

An impression was prevalent prior to the meeting that an elaborate paper had been prepared to be read at the meeting; but this was not so, and the address was not the less acceptable because unconventional and, so to say, conversational, appearing to be based on a few jottings on a slip of paper and a couple of letters from America. What lecturers would do without America and its exhaustive "State" reports is not easy to conceive. They are wonderful productions truly, though we believe several of the best gardeners of the New World have "gone over" from the Old, and are still going. Let us hope it is a good thing for both—for the gardeners and for the great nation of the West.

In alluding to the Doctor's address we will follow his example, and make no attempt to give a formal report, but indicate the character of his observations in an unconventional way, and if the pen should be disposed to drop a comment here and there to let it have a run, regardless of consequences. First of all, and very appropriately, thanks were tendered to the Council of the Royal Horticultural Society for affording the opportunity for such a pleasant gathering of scientists and practicalists. The sundry responsive "hear, hears" suggested two things—1, that the Doctor had given expression to the feelings of his audience; 2, that the said audience would not object to anniversaries of the occasion. Wise audience.

We were then taken for a few moments to the "past" when "the area of the gardens was much greater than now, and their work wider in its scope; when plants were collected by Fortune and others, great and good work done in the fruit department by Robert Thompson, and meteorological observations carefully recorded." The pen seems to want to say certainly in the old days the weather records at Chiswick were looked for by many gardeners, and they would be welcome now if the same scrupulous accuracy in observation and presentation were forthcoming. The lecturer went on to note that "the times had changed, and Chiswick did not stand so much alone now as it did in the days of its ancient glory. Kew had become more and more active, more and more useful, and the enterprise of nurserymen and seedsmen was a great factor in the furnishing of gardens. The past, then, could not afford us much guidance now, and we must look to the present and the future."

As to the "present." Though we all know, and as the Doctor admitted, his inclinations are in the direction of scientific teaching, yet no one has a greater respect for and appreciates more the good work of practical gardeners than he does; and as he undoubtedly knows good work when he sees it, he "ventured to say that the gardeners present would agree that Chiswick was in excellent condition to-day, and a credit to its practical Superintendent, Mr. S. T. Wright, who was proving himself a worthy successor of a worthy man"—a remark that met with general acquiescence.

We were next asked to look to the "future." This was introduced by two questions—1, "Do we derive all the advantages we ought as a learned Society out of the garden at Chiswick?" 2, "Are we doing our duty to horticulture as well as it might be done in this matter?" These are significant questions worthy of serious thought. Evidently if the speaker had been pressed on the subject he would have answered both of them in the negative. And quite right, too, because if any body of men, however eminent, think they have gone as far as it is possible to go it is certain they will soon be left behind. Not for a moment is it implied that those who are responsible for the conduct of the Royal Horticultural Society are embued with any such feelings of self-sufficiency. If that were so they would not give facilities for and welcome suggestions for widening the usefulness of the gardens.

Dr. Masters has high aspirations, and he indicated what he would desire to see. "He would like Chiswick to be a great educational and instructional institution—a model garden, in which typical representatives could be seen of different kinds of vegetables, fruits, and flowers, with which varieties of the types could be compared." We suspect this is more easy to hope for than accomplish, even in the case of Cabbages, which were cited as examples. In the case of Peas well known standard varieties are grown this year, with which the new forms have been compared. Is not this of more practical service than having "types" merely—round-seeded white and blue, and of wrinkled types representing the different colours of ripened seeds, and so on with other things? It would be well to have good old standard varieties in all trials and invite improvers to excel them. Then the Doctor advocated "demonstrations in methods of cultivation, in pruning, training, trenching, mulching, and other routine work; also experimental trials, not with plants and crops only, but also of manures and with spraying, as in America, as well as of advertised remedies" which are supposed to make an end of all insects and plant and tree enemies. There is scope no doubt for carrying out at least some of those propositions, and more diversity might be displayed in the gardens both in cultivation and manipulative methods for educational purposes.

Passing to the Instructional section of his discourse, schools of horticulture naturally received attention. We have said before that in our opinion the best schools of horticulture (not botany) in the world are the best equipped and best managed private gardens of the United Kingdom, and from these have sprung the best gardeners on the face of the earth. It is all the same true that we have no experimental stations such as exist in America, and no properly equipped garden established for educational purposes in the various phases of horticulture, or in its utilitarian as well as its ornamental aspects.

We were told there are more than fifty State-aided experimental stations in America, and twenty of them of horticultural importance, conducted by practical and scientific men. Letters were read from two of the principals describing the good work conducted in those establishments, all the details of which are published for the benefit of the nation. One of the writers, with delightful modesty, gave an invitation to "send some wide-awake men over here to learn wisdom." They would no doubt meet with a welcome reception, see very much, and hear much more; but unfortunately we have none wide-awake enough to draw State aid from the British Government for supporting schools of horticulture.

Knowing this very well, the Doctor went on to suggest that "if we cannot have a fully equipped school at Chiswick, cannot arrangements be made for the students there to attend the lectures at Kew, whilst Kew students might in turn come to Chiswick to learn fruit and vegetable culture?" If any such arrangement could be effected the two sections of students would derive valuable instruction, which neither establishment can in itself afford. Kew is a magnificent institution, and has done splendid work for the empire, enriching the colonies by the Tea, Coffee, and other plantations, and in producing for home consumers greater and better and cheaper supplies of the necessities of life; yet Sir Joseph Hooker explained the great difficulty he had in obtaining the first £100 for scientific teaching at Kew, and he evidently foresaw difficulties in the way of the proposed amalgamation.

The Doctor's resources were, however, not exhausted as to the question of means. "There was the County Council. Could it not be induced to give monetary aid?" Middlesex benefits materially by its horticulture as practised in its market gardens and orchards; but we have not heard much of its county parliament doing much for horticulture. Derbyshire, Cheshire, Essex, Notts, Kent, Stafford, Surrey, Yorkshire, and other counties have made grants to scientific establishments and for practical work, while Middlesex has the most celebrated station of all within its confines, but its County Council as a body may not know it. Instead, then, of sending wide-awake men to America to gain "wisdom," let them go, with the Doctor at the head of them, to the headquarters of the Middlesex county authorities, and obtain a grant of £1000 a year for Chiswick, then will he add to his fame as a teacher of sciences that of a public benefactor in the horticultural world.

There could be no doubt about the speaker's earnestness of desire for sound systematic educational work, nor of the strength of his convictions that to be sound it must be scientific. He condensed his belief in the following pithy sentence:—"Brain work must be thrown into hand work, and practical subjects treated in a scientific way, as true progress could only be made when science was the basis of practice." Let all young gardeners write down that sentence, think it over till its full significance is comprehended, commit it to memory, act in accordance with it, and then may they in time to come benefit by this social and intellectual gathering at Chiswick.

The different speakers were listened to with great attention, the whole of them meeting with an excellent reception. This was

especially warm in the case of the wonderful octogenarian, with soldier-like carriage, bright eye, and strong clear voice, Sir Joseph Dalton Hooker of Kew, the grand old man of the botanico-horticultural world.

STRAWBERRY CULTURE.

Time of Planting.

The competition of present times demands that everything we take in hand must produce some result as quickly as possible. This remark applies with great force to Strawberry growing. No one likes to wait two seasons for a crop when, by a little extra attention, a good one may be secured ten months after the beds are planted. The secret of success in the whole matter is to start early with good plants as previously advised, and set them in their permanent positions during the first week in August. If this practice is followed with such early varieties as Laxton's No. 1, Noble, and Royal Sovereign, a warm position being chosen, ripe fruit will be obtained at least a week earlier than from two-year-old plants. From a market point of view this is, of course, an immense gain.

The next point to consider is the amount of space to be allowed for each plant. This must, to a great extent, be regulated by the nature of the soil and the length of time the bed is to remain before being destroyed. In light soils the early varieties are the most satisfactory if grown on the one-year system. The rows should then be 30 inches apart, and the plants 18 inches in the rows, each being kept to a single crown. This allows a good amount of vacant space between the plants, so that the warm sunshine of spring acting upon it induces early fruitfulness, a point which cannot be too strongly impressed upon the minds of all who strive to obtain early crops.

Early this season I called on a market grower noted for his early crops of Strawberries; he was at the time picking fine fruits of Noble, which were in great demand. I noticed at once that his young plants had plenty of space between them; but, curiously enough, he remarked in the course of conversation that he thought he would set his plants a little closer this year, as he hoped by so doing to get a still heavier crop. I at once told him that he would make a great mistake if he did, for although he might get a heavier crop it would not be so profitable, as thin planting and young plants were the two reasons why he placed his fruit on the market slightly before his neighbours; and I added, Plant closely so that the leaves of the plants almost cover the ground, and you will be no longer noted for early Strawberries. He was convinced at once, and will keep to his well-tried distances in the future.

Midseason and late varieties do not require so much space, as, of course, the object of the cultivator is not to get them early, but to secure heavy crops extending over as long a period as possible. Yet these are often planted too closely in gardens where the soil is very rich, through having been highly cultivated for years. In such instances 3 feet between the rows, the plants being set 2 feet asunder, is not too much. For field culture, and in moderately rich or light garden soils, plant in rows 30 inches apart, and 24 inches in the rows.

Planting.

After having been deeply dug and allowed to dry upon the surface, heavy soils will need little additional preparation; the little required is to reduce lumps to moderately small pieces with the hoe and make the surface of the bed uniformly level. Light soils should, however, be made firm by treading or rolling, so as to induce both roots and leaves to make short sturdy growth. If planted in loose soil the young plants make wonderful progress in the early stages, at the expense of fruitfulness at the critical time.

Good and careful planting is essential to success. Home-raised plants may often be lifted with a good ball of earth attached, then if care is taken to have the soil in a moist condition when lifting takes place, the plants scarcely feel any check from being transplanted. Plants turned out of small pots should have the roots disentangled and spread out in an even manner, so that every rootlet may be in a position to take hold of the new soil as quickly as possible. When the stock of plants is obtained from a distance there is, of course, practically no soil attached to the roots. In such instances proper or improper planting exercises a marked influence upon the future progress of them.

Sufficiently large holes should be dug with a trowel to allow the roots to be spread out evenly in all directions. When this is done the soil should be placed upon them, and be pressed or trodden firmly, or very firmly, according to the nature of the mould. The crown of each plant ought to be just above the surface of the soil, but the neck or collar must be covered.

After giving the plants a good watering mulch the ground with short manure, then, except in the case of prolonged drought, additional waterings will not be needed, but syringing on bright afternoons for a few days will greatly benefit the plants. Throughout the autumn and in early spring all runners must be persistently removed, so as to concentrate the energies of the plant in a single crown, as plump well ripened crowns thinly disposed are the delight of the experienced Strawberry grower, as they indicate the same promising state of affairs as do fruit trees bristling with buds, around which light and air have been allowed to perform their important work.—Pomona.

(To be continued.)

PRECEPT AND PRACTICE.

"The Amenities of Life."

(*Continued from page* 3.)

The transition from serving to ruling—from a subordinate position to that of a head gardener—however long it may have been anticipated, however seriously it may have been contemplated, brings one at a bound under the full fire of criticism, and, according to circumstances, within the pale of social laws hitherto but vaguely defined. Happy the young man who is prepared for such things. Classing bothy manners as a few that are good, more that are bad, and the bulk of which may be termed indifferent, the first we would retain, the next eliminate, and with the latter, the largest class, endeavour to feel the necessity of moulding them for use and adornment in the new position.

Here and there, in all phases of life, towers up some ragged character whose genius gives a license that few dare usurp; and in our own vocation are possibly to be found men of high ability and sterling merit who are known as "rough diamonds," who shine in barbaric splendour, free from that polish which would so greatly enhance their gifts. Politeness is a garment which shows to incalculable advantage upon the shoulders of youth, and superior judgment will award to the young wearer many marks towards the prize he seeks. It is not entirely a case of conversation or of correspondence, of dress and address, or of those little penalties exacted from all who form the links of a social circle; but it includes those nicer distinctions which on the one hand elevate a man above the commonplace, and on the other tone down that natural exultation attendant upon success, showing the possession of a well-balanced mind not swayed by every breeze of fortune, good or ill.

I have one example in my mind's eye of a head gardener who appeared to my youthful vision as an Admirable Crichton in his conformation to the amenities of life. His station of success was doubtless reached by two particular lines of conduct. The one of "scientific and practical competency;" the other by a clear understanding and due regard of our subject. As manners, good or bad, are decidedly contagious, and in no simpler way could much that the subject includes be more clearly conveyed, a brief biographical sketch of an honoured master may be given here.

He was a self-made man who, by sound judgment and sheer industry, overcame all obstacles in the race; his early life, indeed, being little less than an obstacle race. Native of a particular county, where, amongst the class from which he sprang, the Queen's English—"as she is spoke"—is all but unintelligible outside a given area, an indefatigable zeal to overcome what was early felt to be a serious disadvantage resulted in his becoming a veritable purist in conversation, whilst the same means, judging from various letters I, as a young man, was privileged to receive from him, showed that in the art of polite letter writing he was *facile princeps*. At any social function, where his services were required, a dignified demeanour with some practical knowledge of those duties, how acquired I know not, brought him through the ordeal with honours gracefully worn.

There is nothing, I believe, better calculated to self-advancement generally, or more conducive to self-reliance than public writing, and it is gratifying to find such excellent work telling its own tale in the "Young Gardeners' Domain." These young teachers and exponents of the art must, I think, take life as it should be taken, seriously. It would be well if every bothy in the kingdom took a keen interest in that privileged corner, and it is no disparagement to those whose practical pens are in evidence to say it would be equally gratifying to find its sphere enlarged by learners as well as teachers, to seek knowledge without diffidence, and to court criticism without fear.

Conversation in the bothy is not always of the most edifying kind, apart from the vernacular of those distressing dialects which

it behoves everyone who aspires to the higher ranks of our vocation in life to prune off, and engraft upon a stock, which surely is worth it, the elegant growth of our mother tongue. "Self-sufficiency" we have to be warned against; it is probably the most insidious and subtle enemy young life has to contend with. I do not think that any earnest student who seeks for truth beneath the surface of things will be its victim; it is rather with those who in skimming off a few showy superficialities to flaunt in their immediate circle are afflicted by this blight.

I now look back with disgust upon a period of life in which this sickness of self-satisfaction, with all its concomitant evils, infected me, and it affords unqualified pleasure in noting here and there some young gardeners who are apparently proof against the malady. Some few cases there are, however, observable which cannot but claim the sympathy we may award to them in noting how seriously they interfere with a due regard to the amenities of life, apart from which the patient must seriously suffer in mind, body, or estate. Ah! young Mr. Self-sufficient, "When next you talk of what you view, think others see as well as you."—AN OLD BOY.

(To be concluded.)

CYCLAMEN NOTES.

THERE is no flowering plant with which I am acquainted that will last so long in perfection as Cyclamen persicum, and produce such a succession of beautiful flowers of all shades of colours, useful alike for the embellishment of the greenhouse and conservatory and for cutting purposes. The marbled foliage, too, of these plants is pleasing, and some of the varieties are sweetly scented. Few plants are more easily grown or better repay good culture, and the enormous quantities now grown for market indicate the popularity of the Cyclamen.

Good well-flowered specimens may easily be grown in from twelve to fifteen months. The seed should be sown about the second week in August, in pans or 6-inch pots. I prefer the latter, using a compost of two parts leaf soil to one part of loam, with abundance of silver sand added. The seed should be sown thinly and covered slightly with fine soil. Place the pots on a shelf in a house the temperature of which is kept at about 60° to 75°. It is a good plan to place a sheet of glass over the seeds, and on this some moss or pieces of brown paper, which should be kept frequently moistened, thus preventing the soil from becoming dry. As soon as the seedlings appear the coverings must be removed, and the plants shaded from bright sunshine. When they show the second leaf it is the right time to pot singly in thumb pots, keeping them on a light shelf in a cool temperature all winter.

By February or March they should be in a fit state to be removed into the flowering pots—viz., 6-inch. Place them in a heated pit which has a good bottom of coal ashes on which to stand the plants within 2 inches of the glass. Keep the structure close for a few days, with occasional syringings. If the plants are well watered when potted they will require no more for some days, until the new roots are working into the soil, the moisture received through the daily syringings being sufficient to prevent their flagging. Keep the plants shaded from the hot sun at all times, and when well established take care that sufficient air is admitted on all favourable occasions, also leaving the lights off at night when fine weather prevails, as I have noted they are very partial to the night dews. The fire heat should also be turned off from this time onwards.

The compost recommended for sowing the seeds will also answer admirably for potting the young plants, but one part of sifted horse droppings (spent Mushroom bed) and some broken charcoal should be added. By the middle of September the plants will be growing luxuriantly, and will commence throwing up quantities of flowers. These may be pulled out if the plants are not wanted in bloom until later. Cyclamens are much benefited by frequent applications of liquid manure and soot water, which should be given alternately throughout the summer months. A little assistance in this respect is also beneficial at intervals after they are housed.

Those who require plants in small pots for the purposes of room or dinner-table decoration will find the Cyclamen answer admirably. A number of seedlings may be established in thumbs, and there remain until wanted for use, attending carefully to watering, and also feeding them rather highly. They will be found when turned out and mossed up of immense value, and have a very pretty effect. They will bloom freely, each plant carrying as many as two dozen fully expanded flowers at one time. It is advisable when potting these to select only two or three colours which are most appropriate to the requirements of the establishment.—H. T. M., *Stoneleigh.*

ORCHIDS AT MERE BANK, LISCARD.

AT his charming residence on the Cheshire shore of the Mersey the collection of Orchids brought together by the well-known enthusiast, D. B. Rappart, Esq., is noted for its quality rather than quantity. A recent introduction to the above gentleman led to a most enjoyable visit being paid, when I had the privilege of seeing many choice plants of Cattleya Mossiæ in flower. A fine piece of C. Mossiæ alba was pointed out, and some excellent C. Mendeli, Cattleyas Skinneri and superba, Cypripedium caudatum Wallisi, and the seldom seen Dendrobium rhodostoma. Overhead Cattleya aurea was in the most vigorous growth such as one rarely meets with, giving every promise of a charming feast later on. The Trianæ section is well represented, containing C. Trianæ alba and C. Trianæ Backhousiana. C. Gaskelliana is seen in abundance, and I hope, by the kind permission of Mr. Rappart, to send a bloom of the true C. Gaskelliana alba, which is now in sheath.

The white forms of Cattleya Skinneri are noticeable, and C. intermedia alba Parthenia is represented by a fine strong plant. The rare Lælia elegans blenheimense is doing well, as also are L. anceps in variety and L. majalis, growing on an old Dicksonia stem. Rich as are the varieties of Cattleyas, not less so are the Dendrobiums of the varieties barbatum, Schneiderianum, Amesiæ (strong), nobile album, n. nobilius, Backhousiana, Juno, Luna, Venus, Cypheri, albiflorum, and Apollo grandiflorum. The cool house Orchids are not quite so satisfactory, and Mr. Rappart takes rather a gloomy view of their ever doing well, thinking their situation rather low; but I am more sanguine, believing, as I do, that his new gardener, Mr. A. H. Nicholson (a young pupil of Mr. Barberry's), will work in the right groove, although I am well aware that no class of Orchids are so difficult to pull round when they have once gone back as the cool house section. Odontoglossums cordatum and crispum and a grand form of O. Uro-Skinneri were in bloom. Naturally, hybridising is made a prominent feature, seed pods being in abundance and the crosses choice.—R. P. R.

DENDROCHILUMS.

ALTHOUGH the correct name of this genus is Platyclinis, it is usual among Orchid growers to call them by the older name instead of that given by Bentham to part of Blume's original genus. I am not aware if any of the true Dendrochilums are now in cultivation, and if not it is perhaps the wisest course for orchidists to pursue. The plants are dwarf-growing pseudo-bulbous epiphytes of an evergreen character, at least under cultivation. The genus is not a widely distributed one geographically, chiefly occurring in the Malay Archipelago, Java, and the Phillipine Islands. They form beautiful objects when well grown and flowered, especially large specimens.

The natural habitat suggests the best temperature for them, that is the East Indian house. A brisk moist heat with all the light and sun possible, without injuring the foliage, they delight in, the moisture keeping insects at bay, and the quickened temperature causing the little pseudo-bulbs to swell to their fullest extent and to bloom freely. They cannot, in fact, do the one without the other, for if only ordinary care is taken with large healthy bulbs they are sure to produce a bounteous crop of blossom. In this, as many readers are aware, they differ from Dendrobiums and one or two other genera.

This strong moist heat must be continued as long as growth is active and until the pseudo-bulbs are well swelled out, and must be accompanied by abundant root moisture. Being quite finished and ripened a slight diminution must be made, and all through the autumn and early winter, if the roots are moistened when they begin to get on the dry side, the plants will take no harm. Dry rest, as the term is understood, is not required; on the other hand it is injurious, leading to shrivelling of the pseudo-bulbs and general weakness of the plant. But a natural rest, brought about by slightly lowering the temperature and decreasing the atmospheric and root moisture in a like ratio, is recuperative and helpful to the plants.

In early spring the flower spikes usually appear, and as soon as these can be distinctly seen the temperature may rise a little and the roots be kept rather more moist. They take some time to come to perfection, but on well grown plants are little trouble. When fully developed the plants may be taken for a few weeks to

a cooler and drier house, and have a very fine effect suspended from the roof. By the time these spikes are over there will often be signs of new growth from the base, and this is as good a time as any for propagation or renewal of the compost.

Large plants may, if necessary, be cut up into as many pieces as there are leads, first removing as much of the compost as can be got at conveniently, so that a few roots may be secured with each divided portion. Not that these are of any great value to the plant except as a means of mechanical support, for what is of much more importance is to secure the young roots that are put forth after these bits are separately potted. Get these to take a good hold of the new compost at once, and the future health of the plant is practically secured, but if through mismanagement these are lost it will be far from a healthy or thriving plant for years.

A very thin layer of compost will be found sufficient for these little pieces, the pots or pans used being then partly filled with crocks. The best material is peat fibre and sphagnum moss in equal proportions, with abundance of finely broken crocks and charcoal to insure a free passage for air and water. In repotting plants that have not to be divided let the drainage be thorough, as large quantities of water have to pass it, and in removing the plant from the old material be careful not to disturb the roots unduly. In finishing the line of compost let it form a very slightly convex surface, and just finish under the base of the last formed pseudo-bulb.

Both small and large plants must be carefully watered for some time after being disturbed, any excess causing both old and young roots to decay. Rather more shade also may be allowed for a time, and the house wherein they are grown kept fairly close. The most generally cultivated species is D. glumaceum, a very elegant and beautiful Orchid, a native of the Philippine Islands, where it was discovered, along with D. filiforme, by Cuming, and sent to Messrs. Loddiges of Hackney. It first flowered at their nursery in 1841, and a little later in the same year D. filiforme flowered in Mr. Bateman's then famous collection. The racemes of the former species are creamy white when fully developed, those of the latter bright golden yellow. Paler in colour, but of the same graceful habit, is D. Cobbianum, named after the gentleman with whom it first flowered in England—Mr. Cobb, of Sydenham. This was sent home in 1879, and flowered in August and September. D. uncatum is a pretty plant with shorter stouter racemes of pale greenish blossoms, produced very early in the new year.—H. R. R.

LILIUM CANDIDUM.

I NOTICE in last week's Journal one of those complaints which are constantly being made with regard to the failure of this old and beautiful favourite of our gardens. I am somewhat surprised at this, although the writer does not give any information as to the locality or soil. I have never in my experience of it seen it in greater luxuriance or beauty than it is this year. I have clumps of it which are a mass of flower, and this is more especially to be noted, because in one place in my garden they nearly all perished a few years ago. I attributed this to the Lily mite, and conclude that some small bulbs were left which have increased in size and vigour, and have this year bloomed. I did not disturb the soil, because in the bed in which they were planted there were Orange Lilies as well.

I have recently been through different parts of my parish, and wherever I have gone I have seen this Lily in the greatest luxuriance. There are some labourers' cottages on a sloping bank facing the south, where the soil is sandy, and altogether about as hot a spot as they could well be in, and here the gardens were quite a show, so strong and luxuriant were the plants. In another garden on the top of the hill, still facing south, they are equally vigorous, while I saw in a border to a drive leading up to a house, a large quantity of them in full flower.

I have also seen them in situations somewhat different from these, where they seem to be doing well; but I have come to the conclusion that a hot and dry situation is what suits them best. It may be asked whether these have had any special cultivation. My reply is, Certainly not; they have never been touched, and I believe this is one reason why they have done so well. Many Lilies resent disturbance, some more than others, and I think that candidum is one of those that least like it. When the bulbs get too much crowded together it may be well to take out some without disturbing the clump, so as to give room for the others to increase in size.

While writing of white Lilies I may mention a new one which I have in flower in my greenhouse, Lilium philippinense. I do not think it is quite ascertained to be hardy; it comes, as its name implies, from the Philippine Islands, and would, therefore, probably be considered as tender, but as it is found in the high altitude it may be like some of those plants from Kilemanjaro, situated almost on the Equator, which can yet bear open-air culture in our climate. It is dwarf in habit, with a long slender tube-shaped flower somewhat in the style of longiflorum but more slender, about a foot in length, with a pleasant fragrance. It is a very elegant and attractive Lily, and, so far as I can see, seems of easy culture, and will, I have no doubt when plentiful, be very popular. —D., *Deal*.

CROSSING AND SPOILING MELONS.

I DO not know how it is that Melons of the present day are such a medley and uncertain in quality lot. Very few have any merit beyond appearance, and scarcely any receive recognition from the Fruit Committee of the Royal Horticultural Society. I have only sent two in my time, and the Secretary wrote, saying "they were not superior to those in cultivation." Well, I was rather dumbfounded over this, as they were certainly more esteemed at home than any named varieties, and in Covent Garden Market brought 1s. more per fruit. In sending seeds to various growers I got invariably two replies—1, Extremely difficult to grow, and not of superior quality, which meant that Melons varied considerably in different soils and under diverse treatment. 2, Not two plants alike in growth, and the fruit even variable on the same plant; some oval, others spherical; some smooth, others netted; some ribbed, with others without ribs; some scarlet-flesh, others green or white, with some both scarlet and green or white, or all three mingled in the same fruit; some sweet, and others poor in flavour. Here again I had either sent the wrong sort or the varieties were wholly unreliable—a mongrel, wastrel lot.

The whole thing passed my comprehension, as with me the varieties grew like weeds, were always the same, never getting mixed, and invariably pronounced very good. Not being in the "pink of perfection" when cut by the Royal Horticultural Fruit Committee's knife, I can readily understand, and of their appreciative appetites I entertain no doubt, even when they do not agree to give a recognition of merit. That the Committee know a good Melon there is no question, and perhaps some of the members are old enough to remember Early Cantaloupe, Egyptian, Persian, and Cabul—the only four sorts grown in the garden where I first had anything to with Melons. If so, they will remember how true they were to type, and were grown from year to year without change of flesh by any process of crossing by natural or artificial means. There was the scarlet-flesh, green-flesh, and white-flesh, in their order, perfect—not a better Melon now—at least, I never taste their equal, if palate-memory tell truly; hence I have come to the conclusion, rightly or wrongly, that Melons have been "crossed and spoiled."

There are several types of Melons. Naudin makes ten groups of them, nine of which are concerned with the cultivated forms:—

1, Cantaloupes (Cucumis Melo var. cantaloupensis).—The name is derived from Cantaluppi, a former seat of the Pope near Rome, where the Cantaloupe Melons were early brought from Armenia. The fruits are characterised by a hard and more or less warty, scaly, or rough skin, and they are often deeply furrowed or grooved, the appearance belying their good qualities.

2, Netted (Cucumis Melo var. reticulatus).—This class comprises the greater part of the Melons now grown in this country. Some are ribbed (of Egyptian origin), others smooth, barring the netting (of Persian origin). All are very juicy fruits, very tender, somewhat watery, and thin rinded.

3, Sugar (Cucumis Melo var. saccharinus).—The Sugar Melons are small, hard rinded (Turner's Scarlet-flesh) or medium in that respect (Pine Apple), very firm, solid, melting flesh, deliciously flavoured. Some are ribbed, others smooth barring netting. They are merely forms of the netted or Nutmeg Melons, as highly concentrated a flesh and quality as it is perhaps possible to get Melons, and this may be where the spoiling begun—the endeavour to get the firm flesh into the soft, scarlet into green flesh, and neither one thing nor the other, as soft flesh ripens before the hard, and the scarlet mingle with the green.

4, Scentless (Cucumis Melo var. inodora).—This class comprises the long-keeping or Winter Melons, smooth or nearly so, large and oval. They are of very inferior quality, and probably of Central Asian origin. The fruits are different from the long-keeping Cabul Melons, the latter being exquisite, and certainly of similar type to the Persian.

5, Snake (Cucumis Melo var. flexuosus).—A snake-like fruit, more like a Cucumber than Melon, and of no use. The fruit is greenish yellow at maturity, and longitudinally ribbed. The fruit is sometimes preserved and considered fine. It must not be confounded with the Snake Cucumber (Cucumis lagenaria).

6, Cucumber (Cucumis Melo var. acidulus).—The fruits are more or less cylindrical or oblong, variously mottled or unicoloured.

This is probably the type parent of the Persian Melons, and a native of India.

7, Dudaim (Cucumis Melo var. Dudaim).—Fruit about the size of a small Orange, flattened like one at the ends, very regular in form, and beautifully marked with longitudinal bands of yellow, interposed with marbling of cinnamon-brown. The handsomest Melon and the most powerfully scented, a single fruit scenting a large room. There it ends, as the fruit is not edible. It is the well-known Queen Anne's Pocket Melon.

8, Chito (Cucumis Melo var. Chito).—This is the Orange or Lemon Melon, as the shape or colour may be, without markings and next to no odour. Its flesh is white or pale yellow, and about as useless as that of a ripe Cucumber.

9, Red Persian (Cucumis Melo var. erythraceus).—The true Persian, or rather red type; fruit long, somewhat intermediate in form between a knobby-ended Cucumber and a Vegetable Marrow. Whether the green and white are mere forms I cannot gather from Naudin, but there are manifestly only three distinct types, and all originated in India or adjacent parts of Asia.

The Cantaloupes were early in the century distinguished as Early, Netted, and Rock, and out of these issued the Nutmeg and Sugar forms. Egyptian may have only been a form of Cantaloupe, but crossed with Persian we get Egyptian from Cantaloupe without so much rib, and following it up get out of ribs altogether. In reverse order Egyptian or Persian give the ribs back again, and so we might go on indefinitely until we come to but three forms—(1) Cantaloupe, (2) Egyptian, and (3) Persian.

That is all I can make out in British Melons, and they have been so crossed and intercrossed as to be scarcely distinguishable, while some are all three in one, and as variable as the generations. Hence neither the Royal Horticultural Society's Fruit Committee nor anybody else can find anything distinct about Melons, one taste or quality militating against the other, and they escape doing anything, as the fruit is wholly divided against itself.

Surely it is high time that distinctness should be a decisive aim in Melon crossing, keeping as near to type and as far as possible seeking to have fruit of as clearly defined character as practicable. The whole system of crossing seems to be running riot in other fruits as well as Melons, and certainly not for the better, but worse in some cases. What present day Melon has the quality of Turner's Scarlet Flesh? In which is the juiciness and lusciousness of Egyptian? And where may be found the delicate flesh and agreeable taste without after-coming of the old white-fleshed Persian?—G. ABBEY.

VEITCH MEDALLISTS OF 1897.

THE following awards of Medals of Honour have been made by the Veitch Trustees. Circumstances have this year prevented the attendance of the recipients in person, and the medals have accordingly been sent to them.

NORMAN C. COOKSON in recognition of his great success in the hybridisation of Orchids. Among the earlier acquisitions, mention may be made of Cypripedium Io, C. Godseffianum, C. nitidissimum, and C. Sanderæ superbiens, still highly appreciated. Besides these, some of the finest hybrid Cypripediums obtained by other operators as C. Calypso, C. Morganiæ, C. cardinale, C. Niobe, have been raised by him from the same pairs of species, and have very properly received the same names. In other genera he has obtained Calanthe Cooksoni, Cattleya William Murray, Lælio-Cattleya Phœbe, Dendrobium Venus, D. Owenianum, Masdevallia Courtauldiana, all hybrids of great merit. With these may be grouped Phaius Cooksoni, a plant of exceptional interest, on account of its being the first hybrid Phaius in which the remarkable Madagascar species P. tuberculatus has participated in the parentage. Among later acquisitions Cypripedium Bryani, Lælio-Cattleya Doris, Dendrobium Sybil, and Phaius Cooksoniæ, are beautiful hybrids, but especial prominence must be given to Odontoglossum crispo-Halli, one of the most remarkable of artificially raised Odontoglots; and scarcely less interesting is the confirmation of the supposed parentage of Cattleya Hardyana. The hybrids raised by Mr. Cookson include a large range of subjects, and will bear enduring testimony of his horticultural skill.

MARTIN R. SMITH, in recognition of his great success in improving the garden Carnation. This success is the more remarkable from the fact that when Mr. Smith took up the subject he began to work in a field in which great results had been already obtained, especially by the late Charles Turner and Ephraim Dodwell, besides other cultivators of this popular flower, when further improvement seemed well nigh unattainable. It is well known among amateurs of the Carnation that of the numerous seedlings raised annually very few retain a permanent place in collections. A glance through the groups into which florists have distributed the different forms and colours shows that some of Mr. Smith's seedlings possess qualities that will make them exceptions to the general rule, especially in the group known as Malmaison Carnations. In this group Mr. Smith's acquisitions are particularly valuable, not only to amateurs, but to horticulturists generally.

CHARLES NAUDIN, for distinguished services to botany and horticulture. He is one of the most eminent French botanists of the present time, and has been for upwards of thirty years a member of the Académie des Sciences, the most important scientific body in France. He began his scientific career in the Jardin des Plantes, where he soon gained distinction by his accurate investigation of the subjects submitted to him. Among these were numerous experiments to determine the nature and validity of species, including the determination of the many cultivated varieties of the Gourd and Pumpkin. By carefully growing the numerous kinds side by side, by comparing one with the other, and by crossing or attempting to cross one with the other, he eventually succeeded in tracing all the edible and most of the ornamental forms to Cucurbita Pepo, C. maxima, and C. moschata. While connected with the Jardin des Plantes, he collaborated with Professor Decaisne a general treatise on horticulture, entitled "Manuel de l'Amateur des Jardins," still the most scientific and best illustrated work on gardening in the French language. Failing health obliging him to leave the Jardin des Plantes about the year 1870 after passing some years in experimental horticulture at Collioures, he accepted the directorship of the Villa Thuret garden, established by M. Gustav Thuret and Dr. Bornet at Antibes, as a botanic garden for experiments in the acclimatisation of subtropical plants. The villa and garden are now the property of the French Government, and form a sort of southern branch of the Jardin des Plantes, under the direction of M. Naudin, in which are cultivated Australian, South African, and many other subtropical plants, for distribution among the French colonies, and for the use of the Universities of France. Since his instalment at the Villa Thuret, M. Naudin has published a valuable "Manuel de l'Acclimateur," in which the author's extensive knowledge of the large and difficult genera Acacia and Eucalyptus is conspicuously shown.

MAX. LEICHTLIN, in recognition of eminent services to borticulture, especially the introduction of many new and beautiful plants. Max. Leichtlin occupies a unique place among the horticulturists of the present day. Apprenticed to a gardener in his youth, he subsequently held situations in several places, but finally settled down at Baden-Baden, where he founded a private Botanic Garden, which has since become a household word wherever rare and beautiful species of bulbous and perennial herbaceous plants are prized. In this remarkable garden, scarcely half an acre in extent, Max. Leichtlin has worked for upwards of forty years, with the assistance of only one or two skilled labourers. During this period, remote corners of the earth have been searched for plant rarities; and when once these treasures have found a home in the little garden at Baden-Baden, the skill of the owner has rarely failed to make them available for the gardens of Europe.

To enumerate the many plants introduced by Max. Leichtlin would require a very large page of letter-press; but to show how cosmopolitan his operations have been, a few representative instances should be noted. Thus, among his introductions we have Anemone blanda from Armenia, Colchicum Szwowitzi from Persia, Bomaria oligantha from Colombia (S. America), Calochortus Leichtlini from California, Eremurus robustus and Ostrowskya magnifica from Central Asia, this last the grandest of all Bell-flowers; Galanthus Reginæ Olgæ from Greece, Gladiolus platyphyllus and other species of Gladiolus from South Africa, Kniphofia comosa from Abyssinia, Leucocoryne purpurea from Chili, Meconopsis racemosa from China, Olearia insignis from New Zealand, Tigridia Van Houttei from Mexico, and many more, forming a surprising record for one man. Besides all these, many beautiful forms have been raised in the Baden-Baden garden by hybridisation and selection, as the Kniphofia hybrids, Pæonia Moutan varieties, Clematis coccinea major, Crocosma aurea imperialis, Aubrietia deltoidea Leichtlini, and many more.

The plan adopted for the cultivation of so large a number of species within so small a space is a very simple one. As soon as new plants and bulbs have been proved and multiplied, they are distributed among the gardens of the world, and room is made for new introductions. Novelty and change are the predominant features of the Baden-Baden garden; the occupants of it at one epoch disappear within a short period afterwards.

Professor L. H. BAILEY, for eminent services to horticulture. As Professor of Horticulture in the Cornell University in the State of New York, Mr. Bailey has laboured earnestly to promote the science and practice of horticulture in the United State in various directions. This he has done primarily by lectures, in which he has brought before his audiences, usually consisting of farmers and others engaged in the manual work of cultivation, the more important facts in plant physiology, which are apt to be overlooked by ordinary workers, besides other illustrations of plant life, some knowledge of which is indispensable to those engaged in gardening and agriculture. He has done essentially good work in teaching and illustrating the use of insecticides in investigating the origin of plant diseases, and experimenting on the means of arresting them, especially in fruit trees, in which he has rendered valuable service to the fruit growers of America. He is one of the most prolific writers on applied botany in the United States; the numerous year books on horticulture, and the useful bulletins issued by the Agricultural Station connected with the Cornell University, bear ample testimony to his great activity in disseminating useful knowledge, whether derived immediately from his own observations and experiments, or from the publications of others. He has published several important scientific works, among the latest of which is one entitled "The Survival of the Unlike," a collection of evolution essays, suggested by the study of domesticated plants.—("Gardener's Chronicle.")

ROSES

ROSE SHOW FIXTURES FOR 1897.

July 22nd (Thursday).—Halifax, Trentham, and Bedale.
„ 23rd (Friday).—Ulverstone.
„ 27th (Tuesday).—Tibshelf.
„ 28th (Wednesday).—Chester.*
„ 31st (Saturday).—Liverpool.*

* Shows lasting two days.

MEDEA AND MARÉCHAL NIEL.

I CANNOT suppose that there really exists much difference between "W. R. Raillem" and myself regarding the respective merits of Medea and Maréchal Niel. I was not thinking much of Roses for the conservatory (of which the Maréchal is unquestionably the king) when I wrote the article to which your versatile correspondent refers, but of Roses adapted for open air cultivation. I quite admit that of the two varieties Maréchal Niel has the deeper hue and, when fully expanded, the finer formation. But Medea is also a very impressive Rose. Here it has been of beautiful colour and of immense substance. It has, in addition to its distinctive beauty, the great merit of perpetuality. Maréchal Niel is not adapted, in Scotland at least, for garden cultivation. It is, on the other hand, a superb Rose for the conservatory, in which, as I have indicated, it reigns supreme.—DAVID R. WILLIAMSON.

COMMENTS.

THE Jubilee celebrations altered many things this year, and for the first time since the National Rose Society went to the Crystal Palace, the show was not held on a Saturday. To many of us this was a great boon, for as the parsonic element is very strong in the Society, the alteration of the day to Friday enabled them to get off comfortably home and have a day's rest before the Sunday; it added moreover to the comfort of the exhibitors and visitors, for as there was not anything like the number of people that there is on Saturday, locomotion was more easy, and many people said they enjoyed the Roses better than they had done previously. There was, however, this disadvantage, that there having been a promenade concert and fireworks the night before, the officials did not begin the arrangements for the show until 10 30, so that the whole had a very unfinished appearance.

The Show was held in the centre transept, opposite the great organ, and in the concert room—the latter a most inappropriate place. The day was dull though fine, and the consequence was that the Roses in this part of the exhibition did not show at all to advantage, and many a growl came from amateur exhibitors against the obscurity in which their fine flowers were placed. The complaint was a just one, but unfortunately the Society has no choice in the matter. Either the amateurs or professionals should be relegated to the concert room, and should the show be held next year in the same place the conditions must be reversed, and the concert room be assigned to the professionals.

I have attended all metropolitan exhibitions held by the Society, and I can safely say, according to my judgment, it was, as far as the quality of the flowers was concerned, the best that we have ever had. Mr. Mawley has already said how extensive it was, and how the English counties contributed towards it. Scotland was unrepresented, and, of course, we cannot call Messrs. A. Dickson & Sons of Newtownards Irish exhibitors pure and simple. One object they had, I believe, in taking up the old classic ground occupied by Mr. W. J. Grant at Ledbury, was that they might compete more favourably at the early English shows. The prize list gave ample evidence of the extent and excellence of the exhibition, for there were only two classes in which all the prizes were not awarded, and these were the garden Roses. This will of course tell heavily on the finances of the Society, for there have sometimes been upwards of £20 not awarded.

An attempt was made to connect the show with the Jubilee by having a special class for table decorations. In my judgment this was a failure. Roses, even under the practised hand of Mrs. Orpen, are very difficult to arrange, and although her arrangement was tasteful and she did the best that she could, yet one felt how much better she would have done had she been able to introduce other flowers. In regard to the vases of Roses there could be but one opinion as to which merited the first place, and the vase which was placed third would undoubtedly have been second but for for some unfortunately heavy grass which was introduced and entirely marred the lightness of the arrangement.

Another very pleasing feature about the exhibition was the considerable accession of new exhibitors; for while one is always ready to welcome the old practised hands, which have for so many years contributed to the success of our shows, the addition of new blood affords a surer guarantee for the future welfare of the Society. Looking back we cannot but feel how much we miss such names as Baker, Jowett, Hall, and Whitwell, and are, therefore, thankful when we find fresh names amongst our lists of prizewinners; and in looking through the lists of this show we find many who even at their first attempt have carried off honours. This is, no doubt, to be attributed in large measure to a system adopted on the initiative of Mr. Charles J. Grahame of classifying exhibitors according to the number of plants grown. Had the old system still been in vogue these persons would have been deterred by the feeling that they had to come into competition with growers who had big battalions to draw from, and had, therefore, of course, a greater chance of success on the show day. At the time this was proposed I very much doubted its wisdom, but I have for some time seen that the promoters of it were quite right.

This exhibition showed another great change, I mean in stands for new Roses. Formerly these were composed of flowers of which we could only say that we hoped some of them might turn out well. They were nearly all foreign-raised flowers, and as they were cut from under glass they were certainly in most instances flimsy and poor in colour. Now, however, since so many Roses have been raised in our own country, the case is completely altered, and it is certainly very remarkable that in the first-prize stand with which Messrs. A. Dickson & Sons were the winners all the flowers were of their own raising. They comprised Countess of Caledon, Tom Wood, Lady Clanmorris, Ulster, Killarney, Eileen, Mrs. W. J. Grant, Mrs. Mawley, Bessie Brown, First Cross, Mrs. Grahame, and Daisy; they also secured the first prize for the best twelve blooms of any new Rose with a splendid dozen of Mrs. W. J. Grant. In the amateurs' division the Rev. J. H. Pemberton was first with six new Roses—viz., Marquise Litta, Marchioness of Downshire, Captain Hayward, Helen Keller, Charlotte Guillemot, and Mrs. S. Crawford, and of these only two were from foreign raisers.—D., *Deal*.

NAPHTHALENE.

I HAVE read with some surprise, and not a little enjoyment, an article entitled "Naphthalene" in your issue of last week (page 47), and as its contents concern me personally in the dual capacity of chemist and inventor of the paraffin-naphthalene emulsion I feel called upon to set your readers right on certain points.

It would be well for the public to clearly understand that the formulæ and prescriptions put forward by your contributor Mr. Abbey are imperfect quotations from, and covered by, the complete specifications of my English patent (13201, 1895) or its German counterpart (88,566), that both these patents are the trade property of firms who might sue for damages any persons who infringed the patent rights by following Mr. Abbey's instructions.

It should also be understood that even preparing a patented article for home or personal use is legally an infringement of patent. This is a matter with which I have no personal concern, but I am concerned in the obvious failure that would follow the attempts of any gardener to make an effective wash from Mr. Abbey's directions, as he has strangely muddled and misinterpreted the instructions.

All residents in Kent and Surrey have been secured free rights under this patent, and any such persons with sufficient interest in the garden to seek a cure for its pests can obtain adequate instructions by applying to the South-Eastern Agricultural College, Wye, Kent.

Mr. Abbey's article, "Naphthalene," certainly holds pride of place in my album of curiosities of chemical literature. I picture the writer as a gentleman brimful of chemical zeal and horticultural acumen, and with the trifling assistance of his native genius and a chemical text-book a little out of date, he has certainly produced an essay of an extraordinary and astounding kind.

Some little experience in reading the papers of students of chemistry has brought occasional relief to the tedium of the task, but in all my life these eyes have never yet found refreshment on such a glorious and unstinted flow of chemical "bowlers" of the very finest type—no mere batch of unnamed seedlings, but stage flowers of the choicest named varieties.

Perchance your interesting contributor is merely joking, some hearty horticultural humourist who is having his little fling at the expense of the unfortunate complexities of organic chemistry. If so, I cry, "Hold, enough, have mercy, and vent your merry wit on some less serious science—entomology, nematodes, anything long-suffering, more fit for such attentions."

Meanwhile I would respectfully urge that Mr. Abbey be completely insulated in your readers' minds within his own charmed circle of chemical curiosities, where the naphthalene potassium ($C_{10}H_8K_2$)! raises no smile, where the fertilising assistance of nitrobenzene raises no blush to Flora's cheek, and the softsoap prepared from paraffin and potash proves perfect quietus for impetuous eelworm or lurking bacillus

Finally I would heartily congratulate so bold an investigator on his safe survival of such perilous laboratory exploits as are set forth in his paper on "Naphthalene," and that he still lives to enlighten, stimulate, and amuse is scarcely less astonishing than his literary production. I enclose my card.—THE PATENTEE.

[If patents were granted for good humour and happy, racy expression under trying circumstances such as alleged "infringements" and "misquotations," we think our distinguished correspondent would be entitled to the grant. His preparation we have heard spoken of in the highest terms of approval by a gardener whose facilities for testing various compounds for the destruction of plant pests are such as are possessed by few persons who are scientifically or practically interested in the important subject.]

Notes & Gleanings

EVENTS OF THE WEEK.—Besides the Rose shows, as on page 73, the Committees of the Royal Horticultural Society will meet on Tuesday at the Drill Hall. On Wednesday Chester is to be *en fête*, while the Woking Society holds its show on the same day.

—— WEATHER IN LONDON.—Until Monday night, when a heavy thunderstorm passed over London, no rain had fallen, and town gardens were very dry owing to both the sun and the winds. There was a shower on Monday afternoon, but the storm did not commence until about seven o'clock. The lightning was very vivid, and the thunder loud, the rain descending in torrents for some time. The air was fresher on Tuesday morning, and it was slightly cooler. Another storm with rain came in the afternoon of that day. Wednesday was very threatening.

—— MONARCH STRAWBERRY.—I think Laxton Bros. deserve to be congratulated for giving us a good Strawberry that will travel well. I planted a few runners last October, and they have exceeded my expectation. The plants are most robust, and produced an enormous crop for the first year, some scaling 2 ozs. I planted them by the side of Noble and Royal Sovereign, and gathered fruits off all three varieties on the same day. I predict a great future for this Strawberry in the south of England, as it will travel to Glasgow as well as the Royal Sovereign will travel to London. In fact there is very little difference in the fruit when it is two days old, which is an invaluable desideratum.—KENT.

—— THE CHESTER SHOW.—We may remind our readers that what is expected to be a great horticultural exhibition will open at Chester on Wednesday next, the 28th inst., continuing over the following day. The show of last year, as will be remembered by experienced visitors, was too large for the tents which were provided. This year, no doubt, better provision will be made in that respect, and as we are informed competitors are anticipated from various parts of the kingdom, a great and diversified display of garden products will be arranged on the famous Roodee of the historic city. A gala consisting of various attractions is also to be held, and with fine weather a great success in every way is confidently anticipated. The railway companies are offering special facilities in connection with the show, and horticultural vistors will not forget to call at the great nurseries of Dicksons, Ltd., which are only a very short distance from the station. Major Walker-Jones, Grosvenor Chambers, 6, Newgate Street, Chester, is the secretary of the exhibition.

—— CURRAGHMORE AND PENRHYN CASTLE.—I visited both of those beautiful Irish and Welsh gardens within the last few weeks, and shall state immediately why I mention both names together. I presume it is unnecessary to say anything of the wild picturesque grandeur of North Wales and its host of famous sights all within easy reach of Bangor, where I formed one of a small party for some days, seeing the famous castles of Carnarvon, Conway and Beaumaris, the Menai Bridges, Rhyll, Llandudno, Holywell, the various quarries, passes through the mountains, and delightful valleys, and, not least, a visit to Lord Penrhyn's castle and gardens. Enjoying some well-earned holidays, I took no notes, and will not go over the customary ground of describing, even from memory, fruit gardens and fruit houses, well kept, well stocked, and intelligently conducted; flower and terrace gardens, with greenhouses and conservatories, where some rare and new beauty meets the eye, peeping out here and there; nor even the tempting landscape as seen from the castle keep, where an American visitor exclaimed a short time previously to Mr. Speed, the head gardener, "Well, if there is a finer prospect in this wide world, I have no wish to see it." He had been after seeing a large portion of it. I have been about pretty much myself, and have inflicted many columns of what I have seen on readers of the *Journal of Horticulture* for twenty years, and I am inclined to agree with our American cousin. However, description is not my present object, but to refer to a curious coincidence. The worthy veteran above referred to, Mr. Speed, practically commenced his respected career near here, at Curraghmore, the well-known residence of the Marquis of Waterford, some thirty-four years ago, as head gardener. I spent yesterday there and in Portlaw adjoining, where a few of the old veterans who remember him still survive.—W. J. MURPHY, *Clonmel*.

—— GARDENING APPOINTMENT.—Mr. George Arthur has been appointed head gardener to E. D. Stern, Esq., Fan Court, Chertsey, Surrey.

—— GARDENERS' ROYAL BENEVOLENT INSTITUTION.—The Merchant Taylors' Company and the Skinners' Company have each given a donation of £10 10s. to the funds of this Institution.

—— ROYAL HORTICULTURAL SOCIETY.—The next meeting takes place on Tuesday, July 27th, in the Drill Hall, Victoria Street, at twelve. A silver Flora medal is offered for competition (amateurs) for best collection of Cactaceous plants. At 3 P.M. Mr. W. D. Druery will give a paper on "Familiar Garden Insects, Friends and Foes."

—— DR. JAMES CLARK, who has been so successfully engaged for the past six years in University Extension work in agriculture and horticulture, was in March last offered and accepted the Professorship of Agriculture in the Yorkshire College, and the Directorship of the Agricultural Department. It is the intention of Professor Clark to introduce regular horticulture into the College curriculum, and a prospectus of a short preliminary course on fruit culture has just been completed.

—— THE SOUTHAMPTON HORTICULTURAL SOCIETY.—It is satisfactory to be able to report that at the recent meeting of the Town Council the proposal to rescind the sanction given to the Horticultural Society to hold its annual summer Show in an enclosure on the Common of the town was withdrawn, and the Show will therefore be held as usual on the 31st and August 2nd. Some very foolish observations as to the right of the townspeople to clamour for free admission to the show grounds, and even to pull down the fence if not admitted; were very properly severely rebuked, as tending to incite breaches of the peace; whilst it is evident that no similar enclosure on the Common can ever again be permitted, it is hoped that the Horticultural Society may not only this year hold its Show in peace, but also have, what is so much needed, a very successful one.—A. D.

—— ISLE OF WIGHT.—The members of the Isle of Wight Horticultural Improvement Association, by the kind permission of Sir Charles Seely, Bart. (President), visited, on Wednesday, July 14th, Brooke House and gardens. The day was gloriously fine, and over fifty members availed themselves of the privilege to inspect the Island home of this gentleman, whose name and generosity extend far and wide. The party was met by Sir Charles and his daughter and son-in-law (Colonel and Mrs. Leech) at the front of the mansion. After preliminary introductions the President led the party round the park, which is beautifully undulating, and contains a mixture of many rare trees and shrubs, which are relieved by miniature lakes and cascades. The roseries and flower beds on the terraces were next visited; from the terraces there is a charming landscape view with the sea in the distance. A huge Oak, planted by Garibaldi in 1864, was next inspected. A tour of the extensive houses was much appreciated; the 3000 feet of Peach houses, with healthy trees bearing heavy crops of large and highly coloured fruits, received favourable comment, as did a large and miscellaneous stock of Orchids and stove and greenhouse plants, which receive excellent culture at the hands of Mr. W. Tribbick, F.R.H.S., who is a thorough all-round gardener. The vineries, in which are strong, healthy canes, carrying fine crops of fruit, particularly a lean-to house of Muscat of Alexandria, with large bunches of good shape and highly coloured berries. Before the inspection of the kitchen garden and fruit orchard tea was partaken of in the dining-room, where ample justice was done to the good things provided by the President. After tea the many valuable pictures which adorn the interior of Brooke House were seen and much admired. Then the party was photographed on the lawn, after which votes of thanks and cheers were given for Sir Charles Seely and Colonel and Mrs. Leech for their kind hospitality. Sir Charles, in acknowledging the votes of thanks, expressed a hope that he might at an early date have another visit from the members of the Association. The members afterwards broke up into small parties, some going to the kitchen garden, whilst others visited Brooke Church and mounted Brooke Hill, which is several hundred feet above sea level, and from which there is a commanding view of the southern and western parts of the Island. Many strayed to the shore, and were rewarded not only by the pleasures of a bathe, but by a view of the lifeboat. The day was thoroughly enjoyed, and the members returned to their homes in all parts of the Garden Isle feeling highly compensated for any little sacrifices they had had to make so as to visit the marine residence of their worthy President. The day can undoubtedly be counted a red-letter one in the history of the Association.—S. H.

—— PLANT COLLECTING IN ASIA.—Professor N. E. Hansen, Horticulturist of the United States Experiment Station of South Dakota, at Brookings, was recently appointed a special agent by the Secretary of Agriculture to visit Eastern Russia, Siberia, and the elevated plateaux of central Asia, to gather garden, farm, fruit, shrub and tree seeds. Professor Hansen states that the few plants from this dry inland European region already tested in South Dakota, Manitoba and the north-west territory have proved hardy, and it is his intention to collect during the present summer and autumn as complete a representation of the plants of that region as possible.

—— DIPLADENIA BOLIVIENSIS.—This pretty stove plant is perhaps, the most beautiful, and certainly the most easily grown Dipladenia in cultivation. As it is of free growth, and most floriferous in character and blooms when in quite a small state, it differs from the other members of the genus both as regards the habit of the plant and in the colour of its flowers, which are pure white with an orange coloured throat. These are most useful for cutting purposes, lasting a long time in water or when wired for wreath or bouquet making, provided a small piece of damp moss be wired on to the base of the tube. The Dipladenias succeed best in pots, and require a moist atmosphere during the season of growth with abundance of heat. For training along the roof of the stove it is unsurpassed.—H. T. M., *Stoneleigh.*

—— SHIRLEY GARDENERS' ASSOCIATION.—The monthly meeting took place on the 19th inst. at the Parish Room, Shirley, Southampton, Mr. B. Ladhams, F.R.H.S, presiding over a good attendance of the members. The subject of the evening was a Rose show and discussion on the exhibits; but owing to the exceptionally hot, dry period Roses in the district are practically over, hence a small display was the result. There were three prizes offered for twelve Roses, Rev. W. J. Rudge being first, and also securing certificate for best Rose in the show; Mr. W. F. G. Spranger (gardener, Mr. H. Curtis) being awarded second. There were good collections, not for competition, shown by Mr. W. H. Rogers, Red Lodge Nursery, and Mr. B Ladhams, Shirley Nurseries, and a collection of buttonhole Teas by Mr. T. M. Lord (gardener, Mr. W. Knapp). Mr. J. Key Allen, F.R.H.S., showed fruit, Mr. Curtis Tomatoes, Mr. Jeffrey Sweet Peas, and Mr. Ladhams a fine collection of hardy and herbaceous plants. The discussion was joined in by a number of the members, and was of an interesting and useful character. Votes of thanks to the exhibitors and Chairman closed the meeting.

—— WAKEFIELD PAXTON SOCIETY.—The annual exhibition of Pelargoniums was held on Saturday, 10th inst., when over seventy trusses of bloom were shown in glass bottles. It was declared to be a grand show, and the best yet seen there. There was an average attendance of members. Lieut. Goodyear was in the chair, and Mr. W. Hudson, Sandal Grange, in the vice-chair. Mr. W. E. Corden, Wakefield, who has often read papers on these occasions, contributed a short essay on the cultivation of the plant from seeds, in which he has been a distinguished specialist. He advocated a firm yellow loam, mixed with well-decayed cow manure, and that the effort should be made to have a bushy plant, and not one running up like a Hop. Watering regularly prevented the loss of rootlets, and the pots should be clean. He declared that two of the specimens shown of white double blooms, grown from his seed by two members, were as fine as any in England. Mr. Milnes proposed a vote of thanks to the essayist in some lengthened remarks, with thanks also to the exhibitors, who included Messrs. Corden, Moody, Hudson, Vere, Calvert, and Thomas.

—— PLAGIANTHUS LYALLI.—Until recent years this New Zealand Malvaceous shrub was treated solely as a greenhouse plant, and even now very few gardens can boast a really good specimen outside. In the south-western counties it is perfectly hardy, and attains a considerable size if planted in a sheltered corner where it will not get cutting north or east winds. About London and further north it is better to give it the protection of a wall, as the wood then becomes better ripened for the winter. The flowers are produced during June and July from several of the lower nodes of the current season's growth. They are pure white, about 1½ inch across, and produced three or four together from each node. The leaves are from 3 to 4 inches long, more or less ovate, inclined to cordate, with acuminate apex and deeply cut margins. Growths 2 to 3 feet long are often made during summer. These should be shortened to half that length the following spring before growth commences. A light loamy soil is suitable for this plant. Cuttings of half-ripened wood can be rooted if put into sandy soil in a close case during July. Young plants should be sheltered in a cold frame during their first winter.—D.

—— THE GARDEN ISLE.—Mr. C. Orchard writes:—"We are having glorious summer weather now, and it is checking the ravages of the Potato disease that set in so early throughout the Island. Apples in some places are plentiful, in others very scarce, and this occurs in places close to each other. It very much depended on the condition and position of the trees during the cold easterly winds that prevailed at the time they were in bloom. Strawberries have been plentiful, Plums and Pears scarce. The hay harvest is the best for years."

—— MELONS.—Although it is admitted that in granting awards to Melons it is ordinarily done in the dark as to the general merits of the variety honoured, one thing is very certain—that is, that a really good Melon is a very highly appreciated fruit. That fact, doubtless, has much to do with the practice of making awards to single fruits of seedling varieties. Whenever it is the good fortune of the Fruit Committee to have before that body a Melon that deserves an award of merit, nothing is more remarkable than is its quick vanishing properties. Doubtless it is due to its inherent goodness, and of the general desire shown to taste the *rara avis*. It is rather awkward for the reporters, no doubt, who in seeking for the subject of the award, find only a plate and a card. However, it doubtless gratifies the exhibitor to thus note the tribute paid to the excellence of his "fruit."—A. D.

—— JUBILEE DAY IN RHODESIA.—Jubilee Day in Rhodesia was observed as a great tree-planting day in honour of the Queen; but it is said the distinctive feature of the celebration was that each white man who planted a tree had himself to dig the hole for it 3 feet in diameter, and 3 feet deep. The planter was allowed to obtain the help of a friend in this task, but the essence of the celebration was that the hole should be made by the white planter himself. He was not allowed to hire a native to do the work for him. This labour was regarded as "a voluntary act of individual homage to the Queen." The Administrator, Lord Grey, himself set the example, and the natives on Jubilee Day saw a strange sight—white men voluntarily doing what they contemptuously call "Kaffir work" in honour of the Great White Queen over the water. Let us hope it would do them good.

—— USES OF THE POPPY.—The Poppy is cultivated for the sake of the opium which it yields. This is one of the most valuable of medicines, says an Irish contemporary, and one which, as a commercial article, exceeds in importance every other drug in use. Opium is the dried juice of the unripe capsules of the white Poppy. The Poppy is also of great value for its oil and other purposes. The seeds, which contain no opium or other narcotic principle, yield about 40 per cent. of oil, and the oilcake, which is much appreciated by the natives of India, is useful for manure and cattle feeding. These seeds were well known to the ancients as a pleasant article of food, and some German cakes have Poppy seeds plentifully sprinkled on the top. The oil expressed from them is perfectly wholesome, and it is supposed that one-half of the oil used for cooking and otherwise for alimentary purposes in France is of this kind. It is a valuable and much used medium for artistic oil painting. The inferior qualities are consumed in soap and varnish making, and for burning in lamps. The oil is also very extensively used in the valley of the Ganges and other opium regions for food and domestic purposes.

—— HOW FROST AFFECTS VEGETATION.—In his most exhaustive and instructive work, "The Student's Text-book of Botany," Professor Vines gives an interesting explanation of the manner in which extreme cold injuriously affects vegetation. Injury or death by exposure to cold is only induced, he says, when the temperature falls below the freezing point. The liability to injury from frost largely depends upon the amount of water contained in the plant. Dry seeds and the winter buds of trees can readily withstand very low temperatures, but when they contain much water—as when the seeds are germinating or the buds unfolding—they become very susceptible to injury from this cause. When any part of a plant which contains a large proportion of water is exposed to a low temperature a portion of the water contained in the cells escapes from them and gets frozen on their surface, the whole tissue at the time contracting; the water does not freeze in the interior of the cells. The water which has thus escaped and become frozen forms an incrustation; but it has been found that this formation of ice is not necessarily fatal in all cases. If the frozen part be slowly thawed the cells may gradually reabsorb the water, and so return to their previous normal condition. If, however, the frozen part is rapidly thawed the cells cannot absorb the water with sufficient rapidity, and it therefore either collects in the intercellular spaces, causing discolouration and decay, or runs off and evaporates, so that the part dries up.

Sheffield Chrysanthemum Society.

The usual monthly meeting was held on the 14th inst. in the Society's rooms. Mr. J. Haigh was elected to the chair, when a paper was read by Mr. Thos. Gartery of Rotherham, on the Tomato. It was a very interesting and instructive one, commencing with a few general remarks having reference to its names, date of introduction, medicinal qualities, methods of cooking, its uses for decorative purposes. He then fully explained his method of cultivation, beginning with the sowing of the seed, treatment of young plants, methods of planting in pots and boxes, watering, feeding, and concluding with the general management of mature fruit-bearing plants. Messrs. Marshall, Scott, Slaney, Winter, Hannah, and Morton, professional growers, either joined in the discussion that followed, or added to the information previously given.

The professional members competed for prizes with pot plants in bloom, amongst which were some good Gloxinias; the awards being to Messrs. C. Scott, T. Morton, and S. Lomas for first, second, and third prizes respectively. The amateur section exhibited cut blooms which contained Stephanotis, Cannas, Liliums, Gloxinias, and Roses. Messrs. P. Cox, W. Willgoose, and Mr. W. H. Willford were successful in the order in which their names are given. A vote of thanks to Mr. T. Gartery for his excellent paper, and one to the Chairman, concluded the meeting.

Chrysanthemums in April.

Chrysanthemum shows of 1897 in Australia have just passed (May), and as I have had an opportunity of visiting many of the leading competitions in this Colony, a few notes may be interesting.

The Best Twelve Japanese Blooms.—These were selected at ten shows, where there was good competition, with the result that 120 blooms were taken from thirty-seven varieties, ten of which were raised in Victoria, and in a few instances the first time exhibited.

The following are placed as nearly as possible in "the order of merit:"—Madame Carnot, Viviand Morel, Chas. Davis, Robt. Owen, Mons. Panckoucke, Mdlle. Thérèse Rey, Niveus, Good Gracious, Golden Gate, H. L. Sunderbruck, Mrs. H. B. Higgins, Etoile de Lyon, The Convention, The Wonderful, Euterpe, Mrs. G. Gunn, William Seward, Philadelphia, Rose Wynne, L. Cartelidge, E. Molyneux, Col. Smith, Silver King, Viscountess Hambledon, Duchess of York, Miss Nellie Pockett, Buff Globe, Pallanza, Abbé Mendenhall, Mutual Friend, Glen Eira, John Pockett, Lord Brassey, Eva Knowles, R. C. Kingston, Nyanza, and Amiral Avellan (of course the newer varieties are to a disadvantage on account of their not being grown by most of the exhibitors).

The neighbourhood of Malvern (Australia) has not been so favourable this season for developing colours, the wood not being so well matured as usual, probably owing to more than the average amount of rain falling when the plants were making the last growth previous to forming buds.

Saving Seed.—To those contemplating saving seed it may not be generally known that by saving from one plant (provided it has been fertilised with other varieties) nearly all the colours can be obtained that are known in Chrysanthemums, although one colour will generally predominate. The variety for bearing seed should always be carefully selected, as some varieties have a tendency to give the greatest rubbish imaginable, while others produce a good average of promising sorts. The worst of all that I know for seeding are the hirsute varieties. I have never, with one exception, obtained anything meritorious out of the hundreds of seedlings raised from that type, although one really good was raised here, and is known by the name of Australian Belle. I understand it will be sent out this season.

A correspondent of the *Journal of Horticulture* some time back wished to know of any sports that originated during the last year or two. Sports here this season have not been very numerous. There have been several of the Queen family, but none, so far as I know, of special merit.

Pride of Madford Sport.—I mentioned this last year, and I am able to say it is now fixed. The colour is chestnut crimson, reverse of petals lined and tipped with gold. It is named Pride of Stokell, as it originated in the gardens of Mr. S. Armstrong, Stokell, Malvern, Mr. F. Upton being the gardener.

I am sending photographs. The small one represents a bed of Chrysanthemums. The plants are about 1 foot 9 inches apart in the rows, and the rows about 2 feet 6 inches asunder. Each plant has about seven or eight shoots supported to one stake, which is completely hidden with the foliage. They are disbudded until the florets show colour, and then any lateral shoots that may start are allowed to remain for later flowers, which, although much smaller, produce a very good effect.

The larger photo shows plants grown in a more natural way; they are about 3 feet apart, one stake being used for each plant, and four to eight shoots tied to each stake. They are then allowed to make the flowering break without tying. The colours of the blooms are really good, and by not forcing them to the same extent as the others the flowers last much longer.—Thos. W. Pockett, *Curator, Public Gardens, Malvern, Australia.*

[We are very much obliged to our correspondent for his interesting communication, and for the April scene represented in fig. 12.]

HAREWOOD HOUSE.

Situated in one of the most picturesque dales in Yorkshire, eight miles from Leeds, on a commanding eminence, stands Harewood House, the seat of the Earl of Harewood. The park is 1800 acres in extent, and within stands the dismantled Castle of Harewood, built in the reign of Edward I. by the De Lisles. It is said to have suffered considerably during the civil wars. But Sir John Cutler, who held the lands of Harewood, and lived at Gawthorpe Hall, used a considerable quantity of the stone for the building and repairing of farmhouses. The palatial Harewood House was begun in 1759 by the first Lord Harewood and completed in 1771, when the old Gawthorpe Hall, which stood close to the site of the modern mansion, was pulled down. This was for several centuries the seat of the knightly families of Gascoigne, Redmayne, and Cutler, whose tombs are now within the ancient church of Harewood, standing at a short distance from the house. Within this church is the tomb of the celebrated Lord Chief Justice Gascoigne and his lady; he it was who, fearless in the discharge of his duties, committed the Prince of Wales, afterwards Henry V., to prison for contempt of court.

The park is entered from the village by a superb arched gateway with two dwellings. It is in the Doric order, and has eight columns 20 feet high, 17 feet of which is solid stone. It is supposed to be one of the most imposing entrance gates in the kingdom; the first stone was laid in 1801.

The house is a fine specimen of Corinthian architecture. The length, with wings, is 249 feet, the width 85 feet, and the height 62 feet. In the centre is a handsome pediment supported by six three-quarter Corinthian columns 35 feet high. The family of Lascelles, according to Burke, are descended from John de Lascelles of Hinderskelfe (now Castle Howard), living in 1315 A.D. The estates of Harewood, which are about 30,000 acres in Yorkshire, were acquired by purchase early in the eighteenth century by Henry Lascelles, Esq., whose son was created Baron Harewood of Harewood Castle.

The terrace at Harewood is about 350 feet in length. There are five fountains, two of which are in a line with the house, the others being on the second terrace, by which we descend by stone steps. It is laid out with geometrical beds, and is bounded from the park by a high balustraded wall. Within the pleasure ground is a lake of 60 acres fed by a grand cascade falling about 30 feet. The margin of the lake is fringed by Water Lilies and Nelumbiums, and running around the outside walls of the kitchen gardens facing the lake is a wide herbaceous border three-quarters of a mile in length, filled with a choice selection of all that is useful, beautiful, and interesting.

The kitchen gardens are 7 acres in extent. Many of the wall trees are young, having taken the place of worn-out specimens, for Mr. Jeffrey, the head gardener, has, during the five years he has been here, gradually renovated the fruit department. A north wall is covered entirely with Morello Cherries, and in one corner, between the south and east walls, is an ancient Mulberry planted in 1769. A wall with an eastern aspect, formerly occupied by Plums, is now being covered with Sweet Cherries, which are doing well. Another wall with a southern aspect, used as a Peach wall, is now being covered with thriving young trees of dessert Pears and Apricots. The vegetable quarters bespeak at once the impress of a master hand, and the supply of a nobleman's household in the abundance, quality, and perfect cleanliness of the whole.

The glass houses are fifteen in number, in two continuous ranges facing south, with a frame ground between. The first house to enter is a large vinery, 60 feet long by 25 feet in breadth, length of rafter 36 feet. Here is the famous Canon Hall Muscat Vine. It is planted in the outside border, and covers the entire roof of the house, and is bearing at present 120 bunches averaging 2 lbs. each, over 500 bunches having been removed. The whole of the wood is not more than four years old, the old rods running vertically from horizontal limbs on each side of the main stem. The next vinery is of the same dimensions as the first, and contained a grand crop, both in size of bunch and berry and colour, of Black Hamburgh. Two Vines of Muscat Hamburgh, perfect in finish, are in this house. Thin-skinned Grapes are only used at Harewood. The next vinery was also of Black Hamburgh.

In this range is also a Cucumber house, in which on iron supports had been trained Sutton's Climbing French Bean. Mr. Jeffrey speaks highly of it for forcing and flavour. A house containing Tomatoes in pots, which had good crops, some fruit ripe, the varieties being Perfection and Ham Green Favourite. There are also two Fig houses containing such varieties as White Ischia, Brown Turkey, and White Marseilles.

The other range of houses are principally devoted to plants, but in this range is also a vinery, mostly of Black Alicante with a rod or two of Lady Downe's, but this latter is not at all popular. Another house was planted with Tomatoes, and one had a crop of Melons, but these are not in much request at Harewood. Several of the plant houses here are to have new roofs; one is to be made into a loftier structure, and

is at present planted with Roses, Fuchsias, and many old-fashioned plants, such as Clianthus puniceus, Lasiandra macrantha, Chorozema cordata, Acacias, Myrtles, Scented Pelargoniums of sorts, the old P. tomentosum being amongst them. The stove is 80 feet long, and it is intended to re-roof this house. Mr. Jeffrey is a great advocate of the planting-out system, and in front of this stove in a walled-in bed having bottom heat below were growing Passiflora edulis bearing almost 100 fruits the size of a hen's egg. The same house contains Passiflora laurifolia full of bloom with some fruit swelling; it promises to be equal in every respect to its neighbour. Mr. Jeffrey considers the fruit quite equal in flavour to edulis. A really fine plant of Aristolochia

ROYAL HORTICULTURAL SOCIETY.

SCIENTIFIC COMMITTEE, JULY 13TH.—Present: Dr. M. T. Masters (in the chair); Mr. Veitch, Dr. Bonavia, Rev. W. Wilks, Prof. A. H. Church, and Rev. G. Henslow, Hon. Sec.

Malformed Fungi in Mushroom Bed.—A letter was received from Mr. Taylor, Penbridu, Mold, criticising the reports sent to the last meeting with reference to the loam, as he had splendid results last year with the same loam cut from the open pasture. As the specimens have been lost in the transit to Kew the Committee has been unable to receive the report of an expert upon the fungi themselves.

FIG. 12.—CHRYSANTHEMUMS IN APRIL.

elegans bearing hundreds of curious and beautiful blooms arrested attention, as did Ipomæa Horsefieldi and Stephanotis.

An exotic fernery contained fine plants of Adiantum farleyense and Cheilanthes elegans, and interspersed were a number of Rex Begonias. Amherstia nobilis is represented by three specimens brought from Trinidad, and recently planted here.

Another house contained Orchids, and then came two houses with greenhouse plants, in which were double Primulas, which are grown by the hundred; and here I observed at least a hundred pots, containing each three and four bulbs as large as a Spanish Onion of Amaryllis Johnsoni. The pots were mostly 7-inch in diameter, and the sight of the plants in flower must be very fine. Several hundreds of bush Chrysanthemums are grown, and I noticed a fine lot of Lilium Harrisi just flowering. In the large vinery at one end are planted two groups of Hedychiums coronarium and Gardnerianum remarkably strong, promising well for bloom. In one of the stoves were about half a dozen large Hibiscus in sorts. Mr. Jeffrey can use these for dinner-table glasses nine months out of the twelve. They are short-lived, but brilliant.—F. STREET.

Cucumber with Adherent Leaf.—A specimen was received from Mr. E. Horsley, gardener to Rev. W. Wilks. The petiole of a leaf had become fused with the base of the fruit, the result being a distortion in the latter—a not uncommon procedure.

Cattleyas, synanthic.—This was a fusion between two flowers, the effect being to arrest some parts of the whorls, so that each flower became dimerous. There were two lips.

Poppy with Pistilloid Stamens.—A flower of Papaver Rhæas was exhibited with this peculiarity. It is rare in this species, but not infrequently in some others, as the Icelandic.

Chemical Composition of Cattleya.—Two papers prepared by Mr. Smee were laid before the Committee by Mr. Veitch, to whom they had been addressed, as Chairman of the Orchid Committee. The first contained some figures connected with the composition of the atmosphere; analyses of old and young pseudo-bulbs were also given, and of the flower, including observations upon the colouring matters of plants. Prof. A. Church, having given careful consideration to the first of the two papers, reserving the second for a future meeting, remarked that Mr. Smee had scarcely paid sufficient attention to the more recent

analyses of the atmosphere and of rain ; the amount of CO_2 in the free air over land and sea being now found to be almost absolutely uniform everywhere (except where locally contaminated), and less in quantity than 3 parts in 10,000, so that no conclusions could be drawn from the data furnished in the paper on this point. With regard to the amount of ammonia in the air, it is so infinitessimally small in quantity, that it can only be estimated by the most modern and refined chemical operations, so that he was obliged to express some hesitation in accepting Mr. Smee's statements on this point. With regard to Mr. Smee's analyses of pseudo-bulbs and of flowers, Prof. Church observed that they agreed fairly well with average results hitherto obtained from terrestrial and epiphytic plants, but he thought that the percentage of undetermined ash constituents—viz., about one-half, was far too great, and he questioned the presence of aluminium, observing that though terrestrial species of Lycopodium contain much of this metal, epiphytal species of the same genus contain none. He felt sure that some ingredient was wanting which had not been determined. With regard to floral colouring matters, Mr. Smee did not appear to have consulted recent researches. Prof. Church had proved that a number of reds, blues, and purples, though called by different names—*e.g.*, colein in the Coleus, erythrophyll in Copper Beech, fruits, &c ; œnolin in black Grapes and anthocyan were absolutely the same thing, being represented by the formula, $C_{20}H_{20}O_{10}$. These became purplish in neutral cells, blue in alkaline, and red in acid cells. Even the blue-green of a certain Ixia was due to an alkaline solution of the same substance. With regard to the Beetroot, however, and plants allied to it, as the Amaranthus and Buckwheat, he found that the red-purple was of a different nature, and he had called it "amaranthin." It gave neither a scarlet nor blue reaction, neither green nor yellow with acids, but Prof. Church had as yet not determined its actual chemical composition, although he had found it to differ from anthocyanin by its insolubility in absolute alcohol, and by the absence from its spectrum of definite absorption bands. With regard to nutritive solutions, Prof. Church thought that the ordinary solutions for plant culture containing phosphates and salts of lime should be used for Orchids, not the solution surcharged with nitrogen compounds recommended by Mr. Smee. He would suggest spraying with "pulverised" solutions the epiphytic Orchids, for he had proved with Echeverias—as Boussingault had also long ago with other plants—that salts if moist could be absorbed by the surface of the leaf, so that when a lithium salt was placed upon a lower leaf it was detected in others above. Dr. McNab had previously proved the transmission of lithium salts imbibed by the roots throughout the plant, following the suggestion of Prof. Church to use this salt. Mr. Veitch and Dr. Masters called attention to the practice carried out by amateur Orchid growers of suspending a bag of carbonate of ammonia (smelling salts), so that the vapour might be absorbed. Mr. Henslow suggested that it might be absorbed with the aid of vapour of water, as he had found by experiments that this can be absorbed by leaves.—(*Transpiration in a Saturated Atmosphere*, Journ. Lin. Soc, Bot., xxiii., page 303).

CARNATIONS AT CHELSEA.

EVERY year now for several seasons there has been a rich display of Carnations in the Royal Exotic Nursery, Chelsea, and this year proves itself to be no exception to what has come to be regarded as a rule by horticulturists. As with other plants grown by Messrs. J. Veitch and Sons, Ltd., Carnations are done thoroughly well, and the arrangement of varieties in beds permits of their being readily inspected by the several visitors. The different shades of colour are of course very numerous, and the flowers are, as a rule, of high quality, though perhaps not quite so large as those that are cultivated in the purer atmosphere of the country.

There can, after seeing the Chelsea collection, be no question as to the adaptability of Carnations and Picotees for culture in towns. Here they make capital "grass," and produce large numbers of blooms over a considerable period of time. If these results can be achieved without any elaborate preparation of the soil in the beds, it may be safely said that better flowers and plants might be had by those persons who have abundance of time to devote to the plants. Not only are they good for large gardens, but also for small ones; indeed in the most enclosed suburban garden they may be grown to a state well approaching to perfection. Some varieties may thrive better than others, but it is not difficult for anyone desirous of doing so making a judicious selection under the advice of some experienced grower, such as Mr. Weeks at Chelsea.

In drawing attention to this collection it may be permissible for the writer to call particular notice to one or two which were apparently of more than ordinary merit. These, however, are somewhat numerous, so that those named must not be taken as the whole of the varieties in the selection, but simply as a representative selection from them. They have been chosen, not especially with regard to the quality of the flowers, but also with respect to their habit of growth, which is of almost equal importance to the amateur grower, though not so much so to the one who grows especially for exhibition. In this case, of course, the quality of the flowers is of paramount importance, as it is immaterial to him how many blooms he gets from any individual plant provided they are perfect, or nearly so.

It is noticeable that many of the best of the varieties have had their origin in the splendid collection of Martin R. Smith, Esq., at Hayes. Referring first of all to the selfs, we might call attention to Exile, a soft rose-hued flower of exquisite beauty. Her Grace, a delicate blush, is of fine form, as also is Nabob, an orange buff, which is very distinct. The bright scarlet of Paradox is very striking, as is the blush-tinted bloom of Seagull. Cantab and Joe Willett are older than those that have been mentioned, but it will be a considerable time before they are ousted from popular favour, and the same may be said of Rose Celestial and Winter Cheer. Of yellows, Corunna and Germania are very beautiful, as are the pure white Snowdon and Mrs. Frank Watts. Such old Fancy varieties as The Dey, Duchess of Portland, and George Cruickshanks meet with favour from many people, as do the lovely light and heavy edged Picotees.

Many of the yellow-ground flowers are exceedingly beautiful, and ought to have a prominent position in every garden where flowers are desired. Amongst the very best of these now in bloom are Eldorado, Mr. Nigel, Voltaire, and Golden Gate. In addition to those named, if one wished to augment the list one might add Hayes Scarlet, Sadek, Miss Audrey Campbell, King Arthur, Bendigo, and Miss Ellen Terry, and with these this brief notice must be brought to a close. Readers should take the first available opportunity of making an inspection for themselves.—SCRUTATOR.

HORTICULTURAL SHOWS.

NEWCASTLE.—JULY 8TH, 9TH, AND 10TH.

THE show was one of the finest ever held by the Society, and there were several new and interesting features. Some of the competitions did not bring forward so many exhibitors as formerly, one reason, perhaps, being the knowledge that certain famed prizewinners would be there to maintain their glory and renown in the world of frnit and flowers, and another, that several other important flower shows were being held at the same time Still, the magnificent show in the enormous tent erected for this occasion was one to be remembered. Nurserymen and seedsmen were exceptionally well represented, and many lovely exhibits not for competition were shown by eminent florists. An enormous trophy of Palms, Coniferæ and hothouse plants, surmounted by the national flag, did credit to Mr. W. R. Armstrong. Messrs. Wm. Fell & Co. made a characteristic display of flower and foliage by ornamental grouping on each side of the entrance, for which collection they again secured the silver medal. The Jubilee was regarded by another exhibitor, who with scarlet "Geraniums," Cornflowers, and white Pinks, garlanded a mail cart in a most interesting and artistic fashion. The herbaceous plants were a fine feature of the Exhibition, but still the ordinary visitor looked most at the flowers and fruit.

First of all the Roses. In this summer show a Victorian prize was offered under the designation of "cut flowers," not only for the best collection of Roses, but arranged for effect. The first award was the gold medal of the Society, and the first prize collection was of great beauty. The prize, as did most of the leading honours for cut flowers, went to Messrs. Perkins & Sons, of Coventry. The exhibits by other famous Rose growers—Harkness & Sons, of Bedale, Mack & Son, Catterick—showed the present perfection of the national flower. Violas and Pansies from Mr. T. Battersby, of Hagg Hill, Blaydon, were very pleasing, the blooms being of excellent quality. The Carnations were choice in quality and arrangement, Messrs. Laing & Mather, Kelso, having as fine specimens as we have ever noted. The Begonias shown by Messrs. J. Laing & Sons, Forest Hill, were superb with their delicacy of texture and colour. Fruit from Sir Joseph Pease, Bart., M.P., at Guisborough, provided a feature that attracted much notice. A few of the prizewinners are named below.

For a group of miscellaneous plants, arranged to produce the most artistic effect, Mr. J. McIntyre was first, Mr. F. Edmondson second, and Mr. J. Cocken third. For six plants in bloom, distinct, Mr. F. Nicholas was the only competitor, and received the premier award. For six foliage plants, first, Mr. J. McIntyre ; second, Mr. F. Nicholas.

The Victorian prize for a collection of Roses arranged for effect went to Messrs. Perkins & Sons, Messrs. Harkness & Sons being second, and Mr. F. Edmondson third. For seventy-eight Roses, thirty-six varieties, first, Messrs. Harkness & Sons ; second, Messrs. R. Mack & Son ; third, Messrs. D. and W. Croll. Messrs. Harkness & Sons were the only exhibitors of forty-eight Roses, dissimilar, and received the first prize. Thirty-six Roses, dissimilar.—First, Messrs. Harkness & Sons ; third, Messrs. D. & W. Croll. Twenty-four dissimilar, trebles.—Messrs. Harkness and Sons again secured the premier award.

In the class for eighteen bunches hardy herbaceous and border flowers, dissimilar, Messrs. Cocker & Sons were first, Mr. F. Edmondson second, and Messrs. Harkness & Sons third. Twelve bunches hardy herbaceous and border flowers.—First, Mr. M. Campbell ; second, Messrs. Harkness & Sons ; third, Mr. F. Edmondson. For forty-eight Pansies, Fancy, distinct, Mr. M. Campbell was first, Mr. A. Lister second, and Mr. K. H. L. Bell third. For twenty-four Pansies, Fancy, distinct.—First, Mr. M. Campbell ; second, Mr. A. Lister ; third, Mr. W. Archer. Twenty-four Pansies, Show, distinct.—First, Mr. A. Lister ; second, Mr. W. Archer ; third, Mr. J. Wright. Twenty-four spray Violas, six blooms in each, not less than fifteen varieties.—Mr. M. Campbell first, Mr. T. Battensby second, and Mr. J. Cairns third. Twelve specimen glasses of Carnations, not more than six blooms in each.—First, Messrs. Laing and Mather ; second, Mr. M. Campbell ; third, Mr. J. Cairns.

In the fruit division the chief class was for a collection of eight dishes of fruit, distinct kinds (black and white Grapes allowed as separate dishes), and Mr. J. McIndoe was a fine first, followed by Messrs.

J. Tullett, J. Cocker, and G. Lonsdale. Collections of four dishes of fruit (Pines excluded), distinct kinds (black and white Grapes allowed as separate dishes), Mr. J. McIndoe, Mr. J. Cocker, and Mr. G. Lonsdale, as named. For four bunches Grapes, not less than two varieties.—First, Mr. J. Tullett; second, Mr. J. McIndoe; third, Mr. L. Thompson. Two bunches Grapes (White Muscat).—First, Mr. J. McIndoe. Two bunches Black Hamburgh Grapes.—First, Mr. L. Thompson; second, Mr. J. McIndoe; third, Mr. J. Lonsdale. Dish of Peaches.—First, Mr. G. Lonsdale; second, Mr. F. Nicholas; third, Mr. L. Thompson. Dish of Nectarines.—First, Mr. J. Tullett; second, Mr. J. McIndoe; third, Mr. F. Nicholas. Collection of six dishes of Strawberries (six named varieties).—First, Mr. W. G. Macfarlane. Dish of Strawberries.—First, Mr. W. G. Macfarlane; second, Mr. J. Macfarlane; third, Mr. F. Nicholas. For a collection of vegetables, five distinct, to include two of Messrs. Webb's varieties, which must have been grown from seed supplied direct from their establishment in 1896.—Mr. J. McIndoe was first.—("Newcastle Daily Leader.")

WOLVERHAMPTON.—JULY 12TH, 13TH, 14TH.

FAVOURED by three days of ideal "flower show" weather, this, the ninth, exhibition of the very enterprising and successful Society proved to be even more of a success than the fine show of last year. It was held, as usual, in the West Public Park, than which no more convenient and suitable position could well be found or desired, affording, as it also does, by virtue of its well-kept and attractive grounds, an additional pleasure to the visitors after inspecting the products in the five large marquees. Much credit is due to the Secretaries and their coadjutors for the excellent arrangements made for the staging of the vast array of exhibits favourable to the work of the competitors, judges, and reporters alike. Owing to indisposition Mr. W. A. Green, the Secretary, was unable to be at the show on either day, and, by request, Mr. A. Outram took over the management, and, it is needless to add, gave great satisfaction.

PLANTS AND FLOWERS.

In the open class for sixteen stove and greenhouse plants, Mr. J. Cypher, Cheltenham, secured the £20 first prize easily, with a very fresh and bright exhibit, consisting of well-bloomed specimens of Bougainvillea glabra Cypheri, B. Sanderiana, a grand Statice profusa, Erica Parmentieriana, and Stephanotis floribunda; also very good representatives of Erica ventricosa Bothwelliana, Ixora Williamsi, and a huge though somewhat sparsely flowered Phœnocoma, Anthurium Scherzerianum, and two excellent Crotons, Baron James Rothschild and Queen Victoria, supplemented by gigantic Palms, such as Latania borbonica, Kentias australis, Fortunei, and Belmoreana. For second honours, Mr. W. Vause, Leamington Spa, supplanted his rival, Mr. Finch, gardener to James Marriott, Esq., Coventry, with also a most creditable lot—the third prize being accorded to Mr. Finch.

For six plants in flower, Mr. Cypher again led off with excellent specimens of Ixora Williamsi, Bougainvillea Sanderiana, Ericas ventricosa, Bothwelliana, and Parmentieriana, a very good Clerodendron Balfouri, and an excellent Anthurium Scherzerianum, whilst Mr. Vause secured the second prize as the only other competitor with a good collection.

For six Palms, Mr. Cypher, Mr. Macdonald, gardener to S. H. Kenrick, Esq., Whetstone, Edgbaston; and Mr. Vause won in the order named with very fine specimens. In the class for six exotic Ferns, Mr. R. Sharpe, gardener to H. Lovatt, Esq., Lowhill, Bushbury, secured the first prize with excellent examples of Cyathea australis, Dicksonia antarctica, Gleichenia Mendeli, Lomaria, two very good Todea superba, and Trichomanes radicans, closely followed by Mr. Macdonald with fine specimens, such as Cibotium spectabile, Davallia polyantha, Nephrolepis davallioides, Goniophlebium appendiculatum, and Dicksonia antarctica. Mr. Thos. Clayton was placed third. In the class for eight exotic Orchids Mr. Cypher unfortunately was the only exhibitor, and was accorded the first prize for examples including a very good Epidendrum vitellinum, also Vanda suavis, Calanthe veratrifolia, Vanda suaveolens, Cypripedium Parishi, Oncidium macranthum, Cattleyas Mossiæ and Mendeli.

The groups of plants arranged for effect in a space of 450 square feet were decidedly the leading feature of the show. There were six entries, exceeding by one those of last year. Mr. Cypher was *facile princeps* with a splendid arrangement of Orchids and ornamental foliage plants with the indispensable Humea elegans. It was a beautiful arrangement and well worthy of the prize, £20. Mr. Finch was a good second with a somewhat similar display. The third position was occupied by Mr. Vause, and Mr. Macdonald was a very close fourth-prize man. Messrs. Tom B. Dobbs & Co., and J. E. Knight, both of Wolverhampton, were highly commended for two very creditable and attractive groups.

The groups shown by gentlemen's gardeners in this class were also marked by good taste in arrangement, and Mr. A. Cryer, gardener to J. A. Kendrick, Esq., Edgbaston, was worthily accorded the premier prize; Mr. R. Sharpe being placed second, with also a very good group; whilst Messrs. T. Clayton and Enoch Horton of Bescot were respectively third and fourth. Mr. Macdonald was the only exhibitor of six Orchids, and for which the second prize was awarded. Caladiums were represented by two entries, the first prize being awarded to Mr. T. Clayton, and the second to Mr. R. Sharpe. Exotic Ferns were, as in the open section, a prominent feature, and Mr. Macdonald took the lead with fine examples, the second and third prizes being respectively awarded to Messrs. T. Clayton and R. Sharpe.

For six stove and greenhouse plants, not less than three varieties in bloom, Messrs. T. Clayton, A. Cryer, and Macdonald were placed as in order named for creditable examples. Begonias were sparsely shown. For twelve plants Mr. A. Cryer and Mr. R. Sharpe were respectively awarded the first and second prizes for fair examples.

Roses were a very strong feature, the display being the largest ever seen here. The competition was extremely keen, as may readily be conjectured when such notable and large growers as Messrs. Harkness, Cant, and Perkins of Coventry are taken in account, and the four dozen boxes staged along one side of a long tent made an imposing scene. In the class for seventy-two blooms Messrs. Harkness were placed in the first position for the valuable prize of £7 10s., including £5 5s. presented by the Mayor of Wolverhampton, Alderman Craddock. There were so many blooms equally meritorious in the collection that it would be almost invidious to particularise them. The second prize went to Mr. B. R. Cant, Colchester, who was a close and excellent competitor, while the third and fourth prizes were awarded respectively to Messrs. R. Mack and Son and Cranston's Company, Hereford.

In the class for forty-eight blooms the positions were reversed, Mr. B. R. Cant taking the lead, closely followed by Messrs. Harkness and Sons, with Messrs. Perkins & Sons, Coventry, and Messrs. Townsend and Sons, Worcester, placed in the order named. With twenty-four distinct varieties, three trusses of each, Messrs. B. R. Cant, Harkness and Sons, J. Townsend & Sons, and Mr. C. Turner, Slough, were the respective winners. With twenty-four single blooms, Messrs. J. Townsend, J. Mattock, Oxford, and C. Turner were the successful exhibitors, whilst an extra prize was awarded to Messrs. Perkins & Sons, Coventry. For twelve distinct varieties of 1894, 1895, and 1896, Messrs. B. R. Cant and Perkins & Sons were the only exhibitors in a close run, the former firm having greater diversity of colour.

For twelve blooms of one dark coloured variety, Mr. B. R. Cant was awarded the premier prize with an excellent stand of Horace Vernet, the second prize being secured by Messrs. Townsend & Sons for a box of A. K. Williams. For twelve blooms, one light variety, Mr. B. R. Cant was placed first with a splendid box of Her Majesty, the second prize being secured by Messrs. Harkness with an excellent exhibit of Mrs. John Laing, and the third prize to Mr. J. Mattock for Comtesse de Nadaillac.

For twelve blooms of Teas, Mr. B. R. Cant was to the fore with a beautiful stand of distinct varieties, Messrs. J. Mattock and Townsend being respectively in the second and third positions. For the most decorative arrangement of Roses, Messrs. Perkins & Sons were worthily accorded the first prize of £5 for a most varied and elegant arrangement, the second prize being taken by Mr. J. Mattock, and the third by Messrs. Townsend & Sons.

In the class open to gentlemen's gardeners and amateurs only, thirty-six distinct varieties, single blooms, the Rev. J. H. Pemberton was placed first, and Mr. J. Egginton, Wolverhampton, second. For eighteen trusses of distinct varieties Mr. J. Egginton was placed first as the only exhibitor.

The miscellaneous cut flower and bouquet section was a very attractive one, and in the class for twelve bunches of stove and greenhouse flowers Messrs. Cypher, Jenkinson & Son, Newcastle, Staffs, and Mr. W. Vause were the respective winners with very rich and fresh blooms. Bouquets for the hand formed an imposing feature, Messrs. Perkins and Sons winning the premier prize with a beautiful and graceful arrangement of Odontoglossum Alexandræ and other Orchids chiefly, with Messrs. Jenkinson & Son, and Jones & Sons, Shrewsbury, respectively second and third competitors. For a bridal bouquet Messrs. Perkins were again to the front, with Messrs. Jenkinson & Son and Miss H. M. Stevens, Western Arcade, Birmingham, following. For a bridesmaid's bouquet Messrs. Perkins & Sons, Coventry, were represented by a lovely arrangement of Orchids chiefly, the second prize being awarded to Messrs. Jenkinson & Son, and the third to Miss H. M. Stevens for exquisite effects in this line.

For an arrangement of hardy border flowers, occupying a space not exceeding 12 feet by 3 feet, the first prize was awarded to Messrs. Harkness & Son, and the second and third prizes to Mr. W. F. Gunn, Birmingham, and Messrs. Barr & Sons, London, and forming altogether an attractive display. The dinner-table decorations were of a comparatively mediocre description, yet there was considerable merit observed in the first prize example by Miss H. M. Stevens, whilst Miss A. L. Vernon and Mr. W. Vause had heavier arrangements. For the most tasteful arrangement of Pansies and Violas there was only one competitor, Mr. M. Campbell, High Blantyre, who was awarded the first prize for a very good and striking arrangement. The remaining four classes were very well represented by other exhibitors, including Mr. Campbell, who took the leading position nearly throughout.

Carnations and Pinks formed an attractive feature, contributed to by several exhibitors. Sweet Peas were in strong force, and next to the Roses, if not equal to them, and were declared to be the largest and best exhibit of these popular flowers ever seen in this country. They were set up with good effect in the glasses and vases, but in some instances the effect would have been greatly enhanced had the respective rows been raised so as to present a better and more direct front to the spectator. In the class for an arrangement of Sweet Peas for effect, at least twenty varieties, the gold medal was won by Messrs. Jones & Son, Shrewsbury, with a highly meritorious exhibit; the silver medal being secured by Mr. V. B. Johnson, Tettenhall, Staffs; and the bronze medal by Mr. W. F. Gunn, Olton, near Birmingham. A magnificent collection of the best and newest varieties, remarkable for size, substance, and colour, was most effectively arranged by Mr. H. J. Eckford, Wem.

A very interesting and pleasing feature were the wild flower exhibits

by school children, which called forth the warm encomiums of the judges, and who found it no small difficulty to adjudicate thereon. A commendable feature in connection with the exhibiting of wild flowers was the offering of substantial prizes for collections of named flowers to children residing and attending public elementary schools in Wolverhampton. The name of each separate flower to be neatly written in ink on a white label, and attached by the competitor in the presence of a member of the Horticultural Committee on the show ground. The first prize (10s.) was awarded to Master H. Egginton, Wolverhampton, he being the only exhibitor.

The "Hawley" silver challenge cup (value £20) for a display of plants or floral decorations, arranged in a space not to exceed 200 square feet, was won, as it was last year, by Messrs. Dickson, Ltd., Chester, with a handsome display of Roses and herbaceous flowers.

Vegetables and Fruit.

There was not very strong competition in the classes for vegetables, but the quality was all that could be desired. In the competition for the prizes offered by Messrs. Webb & Sons, Stourbridge, for a collection of six distinct kinds of vegetables Mr. C. J. Waite, gardener to Col. Sir P. Talbot, Esher, Surrey, was worthily awarded the first prize for a very clean and shapely lot. His Market Favourite Carrots, Stourbridge Glory kidney Potatoes, Webb's Jubilee Tomatoes, Mammoth Cauliflowers, Webb's Reliance Onions, and Webb's Chancellor Peas, forming an ideal collection. The second prize was secured by Mr. J. Read, gardener to the Earl of Carnarvon, with also a meritorious stand, including very fine Webb's Goldfinder round Potatoes, Eclipse Cauliflowers, Jubilee Tomatoes, and Duke of Albany Peas.

In the class open to all England—presented by Messrs. Sutton and Sons, Reading, for the best collection of vegetables (£5), to occupy a space 6 feet by 4 feet—Mr. C. J. Waite was worthily awarded the prize for a collection containing about twenty-four varieties, he being the only exhibitor. In Messrs. Sutton & Sons' class for six distinct varieties, open to competitors residing within twenty miles of Wolverhampton, Mr. C. Brummell, gardener to H. H. France Hayhurst, Esq., took first honours with a remarkably fine assortment, the second and third prizes being secured by Mr. G. H. Bishop, gardener to Mrs. Wight Boycott, Wightwick Manor, and Mr. A. Cryer respectively, with also very good representations. For three dishes of Tomatoes there was only one exhibit, and the first prize was given to Mr. J. Read for very fine and smooth fruits.

Fruit was not so strongly represented as might have been expected; especially was this the case amongst Grapes. In the class of nine dishes the first prize fell to Mr. J. H. Goodacre, gardener to the Earl of Harrington, Elvaston Castle, Derby, for a Queen Pine, three bunches of fine Black Hamburghs (well coloured), three bunches of Muscat of Alexandria (fair in size, but lacking colour and ripeness), a large Hero of Lockinge Melon (very fine), Barrington Peaches (excellent), Violette Hâtive Peaches, Lord Napier Nectarines, Violette Hâtive ditto, and a very good dish of the Waterloo Strawberry. The second prize was secured by Mr. F. Harris, gardener to Lady H. Somerset, Ledbury, with also an excellent collection, including a grand Smooth-leaf Cayenne Pine, Black Hamburgh Grapes, three bunches of Muscat of Alexandria Grapes of very good colour and large in berry, very fine Bellegarde Peaches, fine Pitmaston Orange Nectarines, and Hales' Early Peaches, Violette Hâtive Nectarines, and large and beautifully coloured Bigarreau Napoleon Cherries; the third prize being awarded to Mr. T. Bannerman, gardener to Lord Bagot, Rugeley.

Grapes were a small section as compared with some previous occasions. For four bunches, distinct varieties, Mr. F. Harris was first with fine and large berried well coloured examples of Madresfield Court, Muscat of Alexandria, Black Hamburgh, and Foster's Seedling; the second prize going to Mr. J. Read for very good Black Hamburgh, Madresfield Court, a good bunch of fairly ripened Muscat of Alexandria, and a well ripened, large berried bunch of Buckland Sweetwater; the third prize fell to Mr. S. Brummell with a fair exhibit, in which was a compact and large well coloured berried bunch of Gros Maroc.

For two bunches of black Grapes Mr. J. F. Simpson, gardener to C. T. Mander, Esq., Tettenhall, was the only exhibitor, the second prize only being awarded for his specimens of Black Hamburghs, large in bunch and berry, but deficient in colour. The white Grape class was represented by Mr. S. Brummell with two bunches, large in berry, of Foster's Seedling, the second prize going to Mr. F. Harris for very good Foster's Seedling, and Mr. J. Read was placed third with fair Buckland Sweetwater.

For a dish of six Peaches, Mr. F. Harris, Mr. Goodacre, and the gardener to A. L. Vernon, Esq., Hilton Hall, were the respective winners with very good examples, and in the Nectarine class Mr. C. J. Waite, Mr. J. Read, and Mr. F. Harris were awarded the prizes as in the order named for fair sized and well coloured fruits. Strawberries were excellently shown, though not in great quantity. For three dishes, distinct varieties, Mr. T. Bannerman, Mr. J. F. Simpson, and Mr. F. Harris were the respective prizetakers, with very fine examples, comprising such as President, Sir C. Napier, Waterloo, Sir Joseph Paxton, and other good varieties.

Miscellaneous Exhibits.

A gold medal was awarded to Messrs. James Veitch & Sons, Ltd., Chelsea, for a highly attractive and superb collection of new and rare plants, including Caladiums, Rhododendrons, Javanico-jasminiflorum hybrids, and a fine specimen of the handsome-foliaged Heliconia illustris rubricaulis. A gold medal was also accorded to Messrs. J. H. White and Co., Worcester, for a very fine collection of hardy herbaceous flowers, and a silver-gilt medal was worthily bestowed to Messrs. Birkenhead, Sale, for a large collection of hardy Ferns.

Messrs. Jarman & Co., Chard, Somerset, took a silver medal for a collection of Roses, Sweet Peas, hardy herbaceous flowers, and vegetables; Messrs. Hewitt & Co., Solihull, a silver medal for a large collection of herbaceous flowers and Begonias; Messrs. Thomson and Sons, Birmingham, a bronze medal for a collection of Gloxinias, Carnations, Bouvardias, and Ferns; Messrs. Jones & Son, Shrewsbury, a bronze medal for a collection of decorative floral devices, &c.; Messrs. W. Clibran and Co., Oldfield Nurseries, a bronze medal for a collection of Violas and table plants. Mr. Richard Lowe, Wolverhampton, was awarded a silver medal and a certificate of merit for collections of decorative plants and a group arranged for effect.

Mr. Robert Sydenham, Birmingham, a bronze medal for table and rustic adornments. Miss Stevens, Birmingham, a bronze medal for a collection of buttonholes, sprays and wreaths. Messrs. Dobbie & Co., Rothesay, a bronze medal for an interesting collection of their specialities. Messrs. Rowe & Sons, Worcester, a bronze medal for a large collection of hardy flowers, and Messrs. Tom Dobbs & Co., Wolverhampton, were accorded a silver medal for a fine collection of hardy herbaceous flowers. Mr. E. Murrell, Portland Nurseries, Shrewsbury, was awarded a silver medal for a fine collection of decorative Roses.

NORWICH.—July 15th.

The weather on Thursday last, when the National Rose Society held its Northern Exhibition in conjunction with the Norfolk and Norwich Horticultural Society, was very bright, and the sun shone so intensely that ere mid-day was past many of the Roses were commencing to go. But the tent in which the major portion of the Roses were staged was exceptionally cool, so that the flowers fared better than they otherwise would have done. The show was held in the grounds of Carrow Priory, Trowse, by the kind permission of J. J. Colman, Esq., and it would be difficult to find a more suitable place for such a purpose.

On the whole the display can only be termed a good one. It would probably have been far better but for the intense sun heat to which the blooms had been subjected for the few previous days. Several of the best trade and amateur growers staged flowers which, in some cases, were slightly past their best. A few blooms of exceptionally good quality were seen, as for example, Mr. Merryweather's Niphetos, which secured a medal. This was a magnificent flower—indeed it was probably one of the finest of the variety that has ever been shown. Mr. Lindsell followed up his successes at other shows by securing all the chief prizes with extraordinary persistency. Messrs. B. R. Cant, Harkness & Son, F. Cant & Co., and D. Prior & Son were strongly represented in various classes, and divided the best of the prizes between them.

In some of the classes the competition was poor, while in others it was very strong. There were exhibits in almost all the classes scheduled, but in some cases the flowers were not up to the mark. The arrangements were well carried out by the local society, and as a rule there was no difficulty in finding any particular class, and with such a light it was of course easy to see every bloom. Below we give a list of the prizewinners with the names of the varieties staged in the first-prize exhibits where these could be got.

Nurserymen's Classes.

Most of the interest in this section was centred in the class for thirty-six distinct, one truss of each, as with the first prize went the Jubilee trophy. Mr. B. R. Cant, Colchester, added to his already long list of victories by securing the premier position with a stand of fresh, clean, even flowers well staged. The varieties were Duchesse de Morny, A. K. Williams, Mrs. John Laing, Her Majesty, Alfred Colomb, Marchioness of Londonderry, Gustave Piganeau, Maman Cochet, Madame Crapelet, Marchioness of Dufferin, Susanne Marie Rodocanachi, Beauty of Waltham, Muriel Grahame, Countess of Rosebery, Ernest Metz, Comte de Raimbaud, Helen Keller, Madame Eugène Verdier, Madame de Watteville, Salamander, Pride of Waltham, Marie Baumann, The Bride, Innocente Pirola, Auguste Rigotard, Senateur Vaisse, Bridesmaid, John Stuart Mill, Comtesse de Nadaillac, Madame Delville, Ethel Brownlow, Ulrich Brunner, Catherine Mermet, and Marie Verdier. The second position was accorded to Messrs. Harkness & Son, Bedale, who also staged splendidly. Particularly good were A. K. Williams, Earl of Dufferin, Star of Waltham, Duchess of Bedford, Comtesse Ludre, Madame Gabriel Luizet, Madame Cusin, Grand Mogul, and Gustave Piganeau. Messrs. Paul & Son, Old Nurseries, Cheshunt, were third.

In the class for seventy-two distinct single trusses, Mr. B. R. Cant again demonstrated his superiority by taking the first place. The stand was a capital one, despite the fact that a few of the flowers were past their best. The varieties represented comprised A. K. Williams, Susanne Marie Rodocanachi, Madame Clemence Joigneaux, Ernest Metz, Paul Neron, Madame Gabriel Luizet, Horace Vernet, Her Majesty, Countess of Rosebery, Marchioness of Dufferin, Ulrich Brunner, Souvenir d'un Ami, Camille Bernardin, Duchesse de Morny, Beauty of Waltham, Madame Eugène Verdier, Gustave Piganeau, Laurence Allen, Earl of Dufferin, Marguerite de St. Amand, Madame Crapelet, Marchioness of Londonderry, Le Havre, Edouard André, Fisher Holmes, Ellen Drew, Comtesse de Paris, Madame de Watteville, Charles Lefebvre, Lady Mary Fitzwilliam, Mons. E. Y. Teas, Madame Joseph Bonnaire, Comtesse de Ludre, Jean Soupert, Alfred Colomb, Pride of Waltham, Comtesse d'Oxford, Star of Waltham, Clio, Etienne Levet, Madame Delville, Reynolds Hole, Pride of Reigate, Robert Lebaudy, White Lady, Duke of Teck, Mrs. John Laing, Thomas Mills, Madame Cusin, Eclair, The Bride,

Victor Hugo, Souvenir de S. A. Prince, Dr. Andry, Hellen Keller, Auguste Rigotard, Jeanie Dickson, Bridesmaid, Merveille de Lyon, Prince Arthur, Innocente Pirola, Charles Lamb, Marchioness of Downshire, Comte de Raimbaud, Muriel Grahame, Marie Baumann, Ethel Brownlow, Duke of Wellington, Maman Cochet, Charles Darwin, and John Stuart Mill. The second and third positions were assigned to Messrs. Harkness & Son and Paul & Son in the order given.

There were apparently only two entries in the class for thirty-six distinct varieties, three blooms of each, and once again Mr. B. R. Cant took pride of place over Messrs. Harkness & Son. The winner staged A. K. Williams, Madame Eugène Verdier, Earl of Dufferin, Marchioness of Londonderry, Madame Crapelet, Marguerite de St. Amand, Duke of Fife, Helen Keller, John Stuart Mill, Mrs. John Laing, Etienne Levet, Duchesse de Morny, Ulrich Brunner, Marchioness of Downshire, Alfred Colomb, Ethel Brownlow, Gustave Piganeau, Her Majesty, Horace Vernet, Madame Cusin, Dupuy Jamain, Marie Verdier, Camille Bernardin, Madame Gabriel Luizet, Le Havre, Ernest Metz, Comte de Raimbaud, Marchioness of Dufferin, Duke of Teck, Countess of Rosebery, Fisher Holmes, Susanne Marie Rodocanachi, Charles Lefebvre, Madame de Watteville, Comtesse d'Oxford, and Pride of Waltham. Conspicuous in Messrs. Harkness & Son's stand were The Bride, Madame Gabriel Luizet, Dupuy Jamain, Etienne Levet, Duchesse de Morny, Niphetos, Ethel Brownlow, and Helen Keller.

Messrs. D. Prior & Son, Myland Nurseries, Colchester, secured the chief award in a class for thirty-six distinct single trusses, showing several in highly creditable form. There were Mrs. John Laing, A. K. Williams, Maman Cochet, Ulrich Brunner, Innocente Pirola, Alfred Colomb, Madame de Watteville, Duc d'Orleans, Hon. Edith Gifford, Susanne Marie Rodocanachi, Pride of Waltham, Gustave Piganeau, Marchioness of Londonderry, François Michelon, Dr. Andry, Madame Cusin, Marie Verdier, Queen of Queens, Star of Waltham, Her Majesty, Charles Darwin, Ernest Metz, Charles Lefebvre, The Bride, Victor Hugo, Maréchal Niel, Horace Vernet, Bridesmaid, Louis Corbie, Marie Van Houtte, Reynolds Hole, Medea, Marquis de Litta, Kaiserin Augusta Victoria, Mons. E. Y. Teas, and Etienne Levet. Messrs. J. Townsend and Son, Worcester, took the second prize; and Messrs. J. Burrell and Sons, Howe House Nurseries, Cambridge, the third.

For eighteen trebles, distinct, Messrs. D. Prior & Son were again to the fore with an even exhibit containing the following varieties:—A. K. Williams, White Lady, Alfred Colomb, Marchioness of Londonderry, Comte de Raimbaud, Mrs. John Laing, Star of Waltham, Pride of Waltham, Victor Hugo, Susanne Marie Rodocanachi, Comtesse de Nadaillac, Horace Vernet, Madame Hoste, Ernest Metz, Fisher Holmes, Maman Cochet, Gustave Piganeau, and Innocente Pirola. In the second prize box, staged by Messrs. J. Townsend & Son, were noted Susanne Marie Rodocanachi, Victor Verdier, Kaiserin Augusta Victoria, The Bride, and Star of Waltham. Mr. Charles Turner, Royal Nurseries, Slough, was third.

Amateurs' Classes.

Corresponding in importance with the first class mentioned in the nurserymen's section was the amateurs' trophy class for twenty-four, distinct, single trusses, in which E. B. Lindsell, Esq. (who might well be named the invincible), Hitchin, was an excellent first with a charming stand. The varieties were Earl of Dufferin, Comtesse de Nadaillac, Beauty of Waltham, Maman Cochet, Gustave Piganeau, Merveille de Lyon, Susanne Marie Rodocanachi, Her Majesty, Madame Cusin, Charles Lefebvre, The Bride, Horace Vernet, Muriel Grahame, A. K. Williams, Madame de Watteville, Alfred Colomb, Marie Baumann, Catherine Mermet, Madame Victor Verdier, Duke of Wellington, Innocente Pirola, Duchesse de Morny, and Souvenir d'Elise Vardon. The Rev. J. H. Pemberton, Havering-atte-Bower, was a splendid second. Helen Keller, A. K. Williams, Dupuy Jamain, Charles Lefebvre, Comte de Raimbaud, Marshall P. Wilder, and Horace Vernet were noticeable in this stand. H. P. Machin, Esq., Gateford Hill, Worksop, and W. Boyes, Esq., Derby, were placed equal third.

The "open to all amateurs" class for thirty-six distinct single trusses was well won by E. B. Lindsell, Esq., the Rev. J. H. Pemberton and H. V. Machin, Esq., following as here named. The first prize exhibit contained Charles Lefebvre, Duchesse de Morny, Duke of Connaught, Merveille de Lyon, Susanne Marie Rodocanachi, Her Majesty, Dupuy Jamain, Mrs. John Laing, Beauty of Waltham, Marchioness of Dufferin, Earl of Dufferin, Marchioness of Londonderry, Dr. Andry, Marie Baumann, Helen Keller, Victor Hugo, Catherine Mermet, Marie Rady, Innocente Pirola, Sir Rowland Hill, The Bride, Horace Vernet, Muriel Grahame, A. K. Williams, Prince Arthur, Souvenir d'Elise Vardon, Abel Carrière, Ethel Brownlow, Gustave Piganeau, Madame de Watteville, Madame Haussmann, Madame Cusin, Fisher Holmes, Comtesse de Nadaillac, Duchess of Bedford, and Ernest Metz. In Mr. Pemberton's box Victor Hugo, A. K. Williams, Dupuy Jamain, and Countess of Rosebery were conspicuous.

Precisely the same position was maintained in the class for eight distinct trebles, as in the one immediately preceding. Mr. Lindsell's stand was composed of Horace Vernet, Madame de Watteville, A. K. Williams, The Bride, Muriel Grahame, Charles Lefebvre, Alfred Colomb, and Her Majesty.

In a class open only to growers of less than 2000 plants, for eighteen distinct single trusses, O. G. Orpen, Esq., West Bergholt, Colchester, was a capital first prizewinner. The stand comprised Her Majesty, Maman Cochet, Kaiserin Augusta Victoria, Mrs. John Laing, Maréchal Niel, Muriel Grahame, Horace Vernet, Catherine Mermet, François Michelon, Souvenir d'un Ami, Comtesse de Nadaillac, Helen Keller, Ernest Metz, Madame de Watteville, Souvenir de S. A. Prince, A. K. Williams, Sylph, and The Bride. S. S. Berger, Esq., Stevenage, was a fair second, and the Rev. A. Cecil Johnson, Capel St. Mary, third. The first award in this class took the form of a piece of plate, value 5 guineas, presented by the Mayor of Norwich.

Mr. M. Whittle, Leicester, was a splendid first in the class for twelve distinct varieties, open only to growers of less than 1000 plants. He staged Her Majesty, Gustave Piganeau, Marchioness of Londonderry, Susanne Marie Rodocanachi, Mrs. John Laing, Ulrich Brunner, Comtesse de Nadaillac, Victor Hugo, Maréchal Niel, Earl of Dufferin, Maman Cochet, and Charles Darwin. Mr. George Moules was a close second, and Mr. J. Bateman, Highgate, third.

In the class for six distinct single trusses, open only to growers of less than 500 plants, Mr. R. W. Bowyer, Haileybury, was first with Horace Vernet, Mrs. John Laing, Madame Cusin, Caroline Testout, Princess of Wales, and Madame Hoste. The second prize went to Mr. J. Mallender, gardener to Mrs. Mellish, Hodsock Priory, Worksop, and the third to Mr. H. P. Landon, Brentwood. For four trebles the prizewinners were Messrs. O. G. Orpen, S. S. Berger, and M. Whittle.

H. V. Machin, Esq., with Her Majesty in splendid form was first for nine single trusses any Rose except Tea or Noisette. E. B. Lindsell, Esq., was second, and the Rev. J. H. Pemberton third, each staging A. K. Williams. For six single trusses of any H.P. or H.T., Mr. H. P. Landon was to the front with Mrs. John Laing, followed by Mr. H. T. Edwards, Derby, with Her Majesty, and C. A. Fellowes, Esq., Shottesham, with Ulrich Brunner. The Rev. J. H. Pemberton was first for six new Roses, distinct, single trusses, with Marquis de Litta, Helen Keller, Ellen Drew, Mrs. R. G. Sharman Crawford, Clio, and Madame Joseph Courbet. H. V. Machin, Esq., was second, and J. Bateman, Esq., third.

Tea and Noisette Section.

In this section, both in the nurserymen's and amateurs' classes, there were many lovely blooms staged, but the numbers were not quite so large as we should like to have seen. The flowers were of good shape, and the colouration in some cases was of exquisite delicacy.

There was one class open to all comers for twelve Teas or Noisettes, three blooms of each variety. Mr. Henry Merryweather, Southwell, Notts, was a very decided first, his stand containing excellent blooms. The varieties were Niphetos, Ethel Brownlow, Ernest Metz, Maman Cochet, Innocente Pirola, Bridesmaid, Comtesse de Nadaillac, The Bride, Catherine Mermet, Golden Gate, Madame de Watteville, and Souvenir d'Elise Vardon. Mr. B. R. Cant was a creditable second with Madame Cusin, Muriel Grahame, Comtesse de Nadaillac, The Bride, and Bridesmaid as his best blooms. Messrs. F. Cant & Co., Colchester, were a good third.

Nurserymen.—Messrs. F. Cant & Co. staged a stand of great beauty comprising blooms of fine quality in the class for eighteen distinct single trusses. The varieties represented were Madame Cusin, Souvenir d'Elise Vardon, Ernest Metz, The Bride, Madame de Watteville, Caroline Kuster, Perle des Jardins, Comtesse de Nadaillac, Innocente Pirola, Maman Cochet, Etoile de Lyon, Madame Angele Jacquier, Madame Hoste, Catherine Mermet, Maréchal Niel, Bridesmaid, and La Boule d'Or. Mr. B. R. Cant was assigned the second position, Ernest Metz, Ethel Brownlow, Souvenir d'Elise Vardon, Innocente Pirola, Sylph, Madame de Watteville, and Francisca Kruger being noticeable in his exhibit. Messrs. D. Prior & Son were third.

For twelve Teas or Noisettes, distinct, one truss of each, Mr. Henry Merryweather was a splendid first with an excellent stand. The varieties were Madame de Watteville, Niphetos, Bridesmaid, Innocente Pirola, Elise Fugier, Comtesse de Nadaillac, Ernest Metz, The Bride, Maman Cochet, Madame Cusin, Madame Hoste and Catherine Mermet, all of which were fresh and well coloured. Mr. George Prince, Oxford, was second with Ernest Metz, Madame Cusin, Catherine Mermet, and The Bride well represented. Mr. J. Mattock, New Headington, Oxford, was third.

Amateurs.—E. B. Lindsell, Esq., secured the premier award in the class for twelve distinct single trusses, open to all amateurs. His stand contained Comtesse de Nadaillac, Catherine Mermet, Madame de Watteville, The Bride, Madame Cusin, Ernest Metz, Maman Cochet, Innocente Pirola, Souvenir d'Elise Vardon, Ethel Brownlow, Madame Hoste, and Caroline Kuster. C. J. Grahame, Esq., Leatherhead, was a very creditable second. Ethel Brownlow, Madame Cusin, Muriel Grahame, and Princess of Wales were good in this stand. O. G. Orpen, Esq., was placed third.

E. B. Lindsell, Esq., was again successful in securing the first prize in the class for nine blooms of any Tea or Noisette with a lovely stand of Comtesse de Nadaillac. The blooms were not large, but of exquisite colour and perfectly fresh. C. J. Grahame, Esq., with the same variety took the second prize, and H. V. Machin, Esq., the third, with Maman Cochet in good order.

There was a class for nine distinct Teas or Noisettes, one truss of each, which was open only to those who cultivate less than 500 plants. The Rev. F. Page Roberts was first with Comtesse de Nadaillac, Madame Hoste, Maman Cochet, Anna Ollivier, Cleopatra, Ethel Brownlow, Golden Gate, Souvenir de S. A. Prince, and Caroline Kuster. E. Mawley, Esq., was second, and the Rev. J. H. Pemberton third.

R. W. Bowyer, Esq., was first for six distinct single trusses, open only to growers of less than 200 Teas and Noisettes, with Maman Cochet, Catherine Mermet, Comtesse de Nadaillac, Innocente Pirola, The Bride, and Madame de Watteville. H. P. Landon, Esq., was placed second, and S. S. Berger, Esq., third.

C. J. Grahame, Esq., was well ahead in an extra class for six Teas or Noisettes distinct, three blooms of each. The varieties were Maréchal Niel, The Bride, Maman Cochet, Innocente Pirola, Muriel Grahame and Comtesse de Nadaillac. The second and third prizes were adjudged to Messrs. H. V. Machin and O. G. Orpen as named. H. P. Landon was first for six blooms of any one Tea or Noisette, with good specimens of Innocente Pirola, the Rev. F. Page Roberts being second, and S. S. Berger, Esq., third.

Open Classes.

Messrs. Paul & Son were placed first in the class for twelve new Roses, distinct, one truss of each, with T. B. Haywood, Clio, Captain Hayward, Bladud, Mrs. W. J. Grant, Sylph, Haileybury, Marquis de Litta, Muriel Grahame, Helen Keller, Bacchus, and one other of which we could not read the name. Mr. B. R. Cant took the second prize.

The last-named exhibitor, with beautiful examples of The Bride, was first for twelve single trusses of any white Rose, followed by Messrs. J. Townsend & Son with the same variety, and Mr. A. G. Green, Colchester, with Innocente Pirola.

For twelve single trusses of any yellow Rose the three prizewinners—Messrs. J. Townsend & Son, F. Cant & Co., and George Prince—staged Comtesse de Nadaillac, all in good form. For twelve of any light Rose, other than Her Majesty, Mr. B. R. Cant was first with Mrs. John Laing, Messrs. D. Prior & Son second with the same variety, and Messrs. F. Cant & Co. third with Madame de Watteville. For the same number of blooms of any crimson Rose Messrs. F. Cant and Co. were first with A. K. Williams, Messrs. J. Townsend & Co. second with Horace Vernet, and Messrs. Harkness & Son third with A. K. Williams. For twelve blooms of Her Majesty the successful exhibitors were Messrs. Paul & Son, H. V. Machin, and Harkness and Son, in the order given.

Garden Roses.

In the amateurs' class for twelve bunches of garden Roses, H. V. Machin, Esq., was a grand first, followed by O. G. Orpen, Esq., who staged a charming collection. The first prize stand contained Crimson Rambler, The Pet, Wm. Allen Richardson, Madame Pernet Ducher, Mignonette, Macrantha, Bardou Job, Perle d'Or, Red Damask, Anna Maria de Montravel, L'Ideal, and Bennett's Seedling.

In the open class for eighteen bunches of Garden Roses, distinct, Messrs. Paul & Son were first. The varieties were Camoens, Wm. Allen Richardson, Crimson Rambler, Bennett's Seedling, Madame Pernet Ducher, L'Ideal, Marquis de Salisbury, Gustave Regis, Madame Pierre Cochet, Madame C. Guinnoiseau, Perle d'Or, Ma Capucine, Mignonette, Homère, Alister Stella Gray, Mons. Desir, and Blanche Moreau. Mr. C. Turner was second; and Mr. J. Mattock third.

For a display of Roses, arranged on a space not less than 6 feet by 3 feet or more than 12 feet by 3 feet, Mr. Geo. Prince was an easy first with a charming exhibit. Dr. Osborne, Old Calton, was second; and Mr. A. G. Green third.

Medal Roses.

The silver medals given by the Society for the best Roses in the Show were taken by Mr. H. Merryweather with Niphetos, and Messrs. Harkness & Son with Earl of Dufferin in the nurserymen's section; and Mr. O. G. Orpen with Muriel Grahame, and S. S. Berger, Esq., with Mrs. John Laing in the amateurs' classes.

Local Classes.

In addition to the several classes in which the National Rose Society offered prizes there was a section under the auspices of the local society. In this the exhibits were staged in a separate tent. The Roses were, as might naturally be expected, very much inferior in quality to those in the other division; in fact, the display was only relieved from mediocrity by the contributions of the Rev. A. Foster Melliar and one or two others who staged some handsome blooms. There were upwards of a dozen classes, particulars of which we are unable to give owing to pressure on our space; but besides the reverend gentleman named above, we noticed amongst the prizewinners the Rev. A. L. Fellowes, the Rev. H. Berners, the Rev. F. Page Roberts, and Messrs. C. A. Fellowes, T. C. Blofield, Colonel Rous, W. H. Hammond, B. E. Fletcher, W. H. Elsum, and D. C. Warnes. Besides the Roses there were classes for plants, hardy and greenhouse flowers, vegetables and fruits, and many exhibits of a highly meritorious character were staged.

There were a few miscellaneous stands not for competition which included Begonias, Ferns, vegetables and sundries from Messrs. Daniels Bros., Norwich; hardy flowers from Messrs. Paul & Son, Cheshunt; Sweet Peas from Mr. J. Green, Dereham; Roses from Messrs. W. Paul and Son, Waltham Cross; and Lilies of the Valley from Mr. J. Jannoch, Dersingham.

The northern Exhibition of the National Rose Society, which was held on the 15th inst., in conjunction with the Norfolk and Norwich Horticultural Society, was a most successful one. The total number of exhibition Roses staged in the joint show amounted to 3590, which is 500 more than the average for the previous five northern shows, and greater than at any similar exhibition of the Society, with the exception of those held at Birmingham in 1890, at Chester in 1892, and at Derby in 1895. There were in all exactly fifty exhibitors and 220 exhibits. Arranging the latter according to the number contributed by each county they come out as follows:—Norfolk 55 exhibits, Essex 46, Herts 32, Suffolk 23, Notts 15, Oxford 9, Surrey 8, Derby 7, Worcester 7, Cambridge 4, Yorkshire 4, Leicester 3, and Middlesex 3. Nearly 7000 persons visited the Show, which is a record attendance for a summer exhibition of the local society.—E. M., *Berkhamsted.*

NATIONAL VIOLA SOCIETY.—July 17th.

The second annual exhibition of this Society was held on Saturday, 17th inst., in the grounds of the Royal Botanic Society. Taken as a whole the show was rather smaller than usual, but the quality was above the average. The weather for the past few weeks has been so trying to the flowers in the south that many exhibitors could not stage a flower. The Pansies all came from north of the Tweed, and a brave show was made. The southern growers continue to hold their own in the Viola section, the strongest stands coming from amateurs in the neighbourhood of London.

In the class for forty-eight sprays of Violas, distinct varieties, Mr. W. Baxter of Woking secured the gold medal. The collection embraced all the leading kinds. A. J. Rowberry, Endymion, Princess Louise, Commodore, Wm. Haig, Duchess of Fife, Marchioness, and Florizel were the most conspicuous. Mr. John Forbes, Hawick, N.B., secured the second place with a brighter display, but the long journey had evidently been too much for some of the flowers. An innovation was made in the class for forty-eight bunches of Pansies, distinct varieties, and the effect was far better than can be obtained by the ordinary method of staging these flowers. Mr. M. Campbell, Blantyre, N.B., was easily first, and secured the gold medal for the best exhibit of Pansies. The blooms were bright, fresh, and of good substance. Messrs. Isaac House & Son, Coombe Nurseries, Westbury-on-Trym, Bristol, received the second award. Third, Mr. J. Forbes, Hawick.

The class for twenty-four Fancy Pansies, distinct varieties, brought out a strong team of exhibitors, Mr. M. Campbell taking first place. His best blooms were Colonel Buchanan, Mrs. Wm. Steel, Bernard Doulton, Mrs. Maundril, and John Gramm. Second, Mr. J. Smellie, Busby, N.B., with a stand almost equal in every respect, being only one point behind. Annie Ross, Tom Walters, Mrs. W. Watson, Mr. P. Crosbie, and Valkyrie were his best blooms. Third, Mr. Jas. Maxwell, Dalton Newton, N.B. Twelve Fancy Pansies were also well represented, Messrs. Smellie, Campbell, and Maxwell taking the cards in the order named. Show Pansies were weak, and call for no comment. In the class for twenty-four sprays of Violas Mr. J. Smellie secured first place. His best sprays were Dorothy, A. J. Rowberry, Lily Barron, and Stobhill Gem. Mr. M. Campbell second; Messrs. House & Son third. The minor classes were well filled, but were a repetition of the larger classes, the exhibitors in most cases being the same.

In the amateur classes Mr. R. T. Dougall, Walthamstow, took chief honours, and in fact staged the best Violas throughout the show. Mr. J. J. Sheldon, Woodford, was also in fine form. The President's prize for six growing plants was awarded to Mr. D. B. Crane, with a very fine basket. The clumps were large, fresh, and healthy looking. Second, Messrs. House & Son. The Viola is not adapted for this method of cultivation, its true home being in the border or beds. Eighteen distinct Violas in glasses, without any wiring, brought out a pretty display, Mr. A. J. Rowberry, Woodford, taking first honours with a fine even lot. The blooms kept wonderfully fresh and bright throughout the entire day, and contrasted favourably with the sprays that were looking very forlorn during the afternoon. Messrs. Dobbie & Co., Rothesay, staged a fine display of sixty sprays.

First-class certificates were awarded to Fancy Pansy John Menzies, from Mr. M. Campbell; to Viola Jas. P. Robertson, rosy purple, from Mr. John Forbes; White Empress, from Messrs. J. House & Son, and to Viola Endymion, lemon yellow, from Mr. W. Baxter.

NATIONAL CARNATION AND PICOTEE.—July 21st.

The southern section of the National Carnation and Picotee Society held its annual exhibition in the Royal Botanic Society on Wednesday. Though many flowers of excellent quality were exhibited the display made was not a good one, owing to the system of staging adopted. The time at our disposal precludes a full report of the show being given. We therefore name the prizewinners in a few of the chief classes only.

The class for twenty-four distinct bizarres and flakes was won by Mr. C. Turner, Slough, with an even stand of almost perfect flowers. Mr. M. Rowan, Clapham, was a capital second, and Mr. J. Douglas, Ilford, third. For twenty-four distinct selfs, Mr. C. Blick was first for a superb exhibit, Mr. C. Turner being second, and Mr. J. Douglas third.

Mr. C. Phillips, Bracknell, staged twelve beautiful flowers in the class for a dozen bizarres and flakes, distinct. Messrs. Thomson & Co., Birmingham, were second, and Mr. A. J. Saunders, Cobham, third. Mr. A. R. Brown, Handsworth, secured the premier award for six distinct, followed by Mr. W. Galston, jun., Woolston, and Mr. T. A. Brill in the order named.

Mr. C. Turner went ahead for twenty-four Fancies. The flowers were of good form and beautifully coloured. Mr. J. Douglas was second, and Mr. J. Walker, Thame, third. For twelve Fancies Mr. C. Phillips was first, and Mr. G. Chaundy, New Marston, second.

Mr. C. Turner was again first for twenty-four white-ground Picotees with a chastely beautiful exhibit. Mr. J. Douglas was second, and Mr. M. Rowan third. For twelve Messrs. Thomson & Co. were first, Mr. C. Chaundy second, and Mr. C. Phillips third. Messrs. A. R. Brown, T. A. Brill, and A. Greenfield were the most successful competitors for six white-ground Picotees. For twelve yellow-ground Picotees Mr. C. Blick was a splendid first, Mr. J. Douglas second, and Mr. C. Phillips third.

Mr. E. Colley Sharpen, Bedford, was to the front for twelve selfs, distinct; Mr. C. Phillips was second; and Messrs. Thomson & Co. third. For twelve distinct, shown with a spray of foliage, Mr. E. Charrington was first; Mr. G. G. Sundden second; and Mr. H. Fagents third.

For a group of Carnations, arranged for effect in a space not exceeding 30 square feet, Mr. J. Douglas was first as the only competitor. For a larger group Mr. C. Blick, gardener to M. R. Smith, Esq., Hayes, was first, followed by Mr. C. Turner, both staging well, though the first named plants were too packed.

Mr. Jas. Douglas, Great Bookham, sent a collection of flowers comprising many of the best well-known and new varieties. Messrs. J. Veitch & Sons, Ltd., sent two boxes of beautiful flowers of the leading varieties. Mr. E. F. Hopper, Hoddesdon, sent a few flowers, but none of very great merit; as did Messrs. W. Cutbush & Sons, Highgate, but some of these were very good.

FRITILLARIA ARMENA.

AMONG the dwarf-growing Fritillarias the species depicted in the illustration (fig. 13) occupies a prominent place. As the specific name implies, F. armena is a native of Armenia, and was introduced in 1878, but it is not generally well known in gardens. It is a charming little plant, growing about 6 inches in height. The flowers are brownish purple, and, as will he seen by referring to the woodcut, are small, campanulate, and slightly drooping. They are usually produced in April. There is a yellow form of this species named F. a. fusco-lutea. This was introduced in 1887, and is a native of Smyrna. F. armena can be grown in sheltered positions on a rockery or horder, or in pots in a cool greenhouse.

THE YOUNG GARDENERS' DOMAIN.

CULTIVATION OF THE MELON.

(*Continued from page* 60.)

As the roots penetrate through the ridge layers of fresh warmed compost should be added, doing this whenever the roots are visible. When top-dressing after the fruits are set a small quantity of artificial manure may be added with advantage. If each plant is required to carry four Melons allow three side shoots to grow. These should start from near the hase of the plant. Some growers stop their plants, so that they will hreak more freely; but we find no necessity for this, as the side shoots grow rapidly, reaching the top of the trellis with the main stem. When they have extended to the height desired hoth the main stem and side shoots are stopped, or as they may be now called the "four stems." Laterals are then produced, and these pinched at the second pistillate or fruit-hearing flower. When a sufficient number of these flowers are open they are fertilised about midday, when the pollen is dry. After a good set has heen obtained the fruits are thinned, only one being allowed on a stem. Those which remain should be of an equal size, for if otherwise they are very difficult to manage, for some of them will be netting when others are still swelling, some stems consequently requiring very little water, while others need a copious supply. Again, some fruits may he ripening, and need a minimum quantity of water, when others are in a green state and would suffer by the reduced supply. After the fruits have set remove all sub-laterals and superfluous growths, leaving only the main leaves.

Some growers follow a different method of training to the one described. The main stem is allowed to extend to the required height, and is then stopped, all side shoots being also stopped at the second pistillate flower. When the set has been obtained the fruits are thinned out to four on a plant. This method sometimes answers, but it is often found difficult to get the fruits equal in size, as the sap flows to the Melon furthest from the base, causing it to swell faster than those which are lower down.

After thinning the fruit, those which remain should be tied up, a short distance from the trellis, with a piece of matting, passing it round the stalk near the fruit. Afterwards the fruit will need something to rest upon. Small pieces of board, or wicker baskets, made for the purpose, fastened to the trellis with pieces of string, may be used. Nets, made for the purpose, can he obtained from nurserymen and seedsmen, and these are preferable to boards and baskets. Cut the Melons before they are fully ripe, and place them in a dry, airy room.—ELVEDEN.

MEANS AND MODES OF PROPAGATING PLANTS.

(*Continued from page* 60.)

RETURNING to the consideration of the root of the plant, it must be remembered that it is not always the portion of the plant that happens to grow underground that is really its root. We are accustomed to call Potatoes, Parsnips, Carrots, Onions and Beetroots, root crops, because the parts of them that are eaten grow under the earth's surface, or nearly so; hut in reality the parts of the Potato that we use as food are tubers; the Carrot, Parsnip, and Beetroot, as well as the Dahlia, are tuberoids, and the Onion, in common with the Lily and the Hyacinth, is a bulb.

What, then, is the root? The root or roots of a plant are offsets from that portion of it which is within the soil in the form of threads or filaments, terminating in soft organs called spongioles, through which moisture and the various elements that combine to form the structure of the plant are absorbed from the earth to be carried upward to the extremities of the branches.

In the Onion and all bulbs the roots are not the bulbous portions which are produced and matured either above or below the surface of the soil, but the circle of fibres which issue from the edges at the bottom of the bulb. In the Potato the tuber, rich in starch and nutritive matter, is not the root, but the roots are the string-like fibres issuing from the tuher, through which the food stored up within it has been gathered from the soil. The real roots of the Parsnip, the Carrot, and the Beetroot are the thread-like fibres which issue from the fleshy tuberous roots on all sides, and especially at the extremity, which is commonly called the tap root.

We are now in a better position to understand the various natural means by which the propagation of plants is effected. The junction of root and stem is usually called the collar, and in planting due regard should be had to keeping the collar in its proper position, for if it be too low the portion of the stem that is buried will be liable to canker, especially in the case of worked trees, where the junction is close to the ground; and if it he too high a portion of the plant that ought to be below ground will he above it, and will suffer from the exposure. This, however, as we have seen, is not the case with every plant, and we

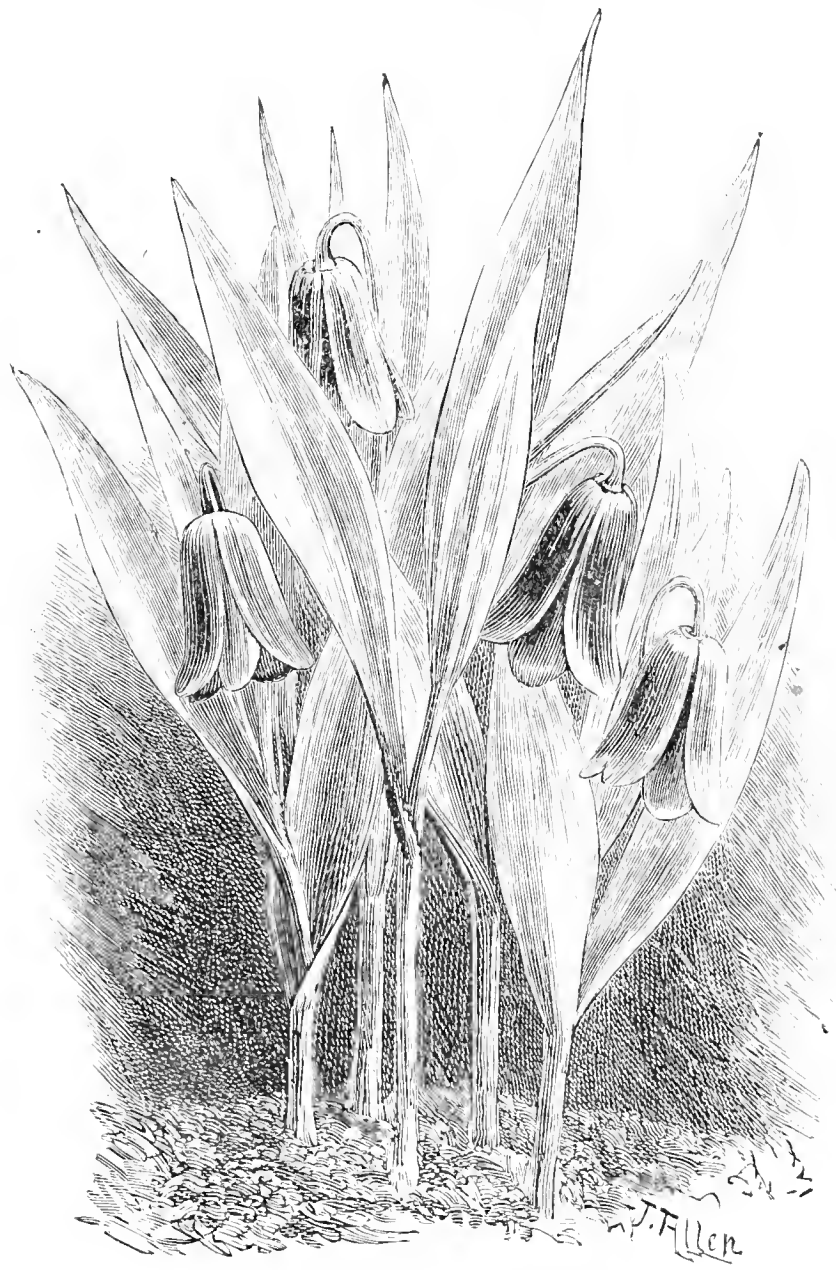

FIG. 13.—FRITILLARIA ARMENA.

know that the rootlets or fibres which are sent forth anew hy the parts above ground for the reception, aëration, and maturation of the sap when it is brought to them from below hy the system of circulation.—C. W. M.

(To be continued.)

ARISTOLOCHIA ELEGANS.

THIS desirable and beautiful tropical climber is seldom met with in a satisfactory condition; at least this is my experience, owing, I think, chiefly to its being confined in pots. Where I have found it to succeed the best is planting in front of the hot water pipes in a lofty stove. This Aristolochia was planted early in February of this year, in a mixture of three parts loam, and one each of peat and leaf soil, with a free amount of sand. The growths were trained perpendicularly until they reached the roof wires, which the plant now covers for the space of several yards.

This species is a free grower, the foliage heing of a rich grass green colour, and the flowers horne in great profusion on stalks 4 inches in length. The plant in question is hearing between 200 and 300 flowers and buds. The ground colour of the flowers is white, finely marked with veins of rich velvet chocolate. The shape of the flower is most curious, resembling a pipe, the howl of which has been turned back to meet the stem and then faced outwards.

One of the chief points to note in the management of this plant is to train the growths thinly, in exactly the same way as the Stephanotis is trained; in fact, the plant in question is growing side by side with a Stephanotis, both receiving similar treatment—viz., a free use of the syringe, and shade during the hottest part of the day.

The only insect which has made any attack on this Aristolochia is

a minute "red spider," and this only quite close to the hot water pipes. This comparative freedom from insect pests may be attributed to the peculiar smell which the foliage possesses.

The plant may be increased by means of seeds and cuttings, the former being sown as soon as ripe, the latter inserted as soon as procurable in small pots filled with sandy peat and loam, and kept in brisk heat.—YOUNGSTER.

CULTIVATION OF ORANGES.

ALTHOUGH Oranges are not grown for dessert purposes so much now as in former times, fruiting plants or trees are almost indispensable for winter decoration. Specimens may be obtained from cuttings of half-ripened wood, under a bell-glass, in a bottom heat of 75°, growing the plants well for two or three seasons.

During growth they must never be allowed to become dry at the roots, and frequent syringings are necessary to keep the foliage clean and healthy. Abundance of light, and a free circulation of air, are essential conditions for producing the sturdy growth and large glossy leaves which betoken good health. By judicious pruning, and stopping strong growths, trees 2 feet high, and brought into bloom in February or early March, will bear sufficient fruit to ripen, and help to make the conservatory attractive in the depth of winter. Tying and twisting the branches in, with the object of showing the fruit better, should be avoided as much as possible; allowing them to appear in natural freedom is decidedly more artistic.

Should mealy bug attack the plants petroleum and water sprayed on by a careful operator is an effectual method of dealing with it, or if red spider and thrips show themselves sponging with softsoap will eradicate the pests.—R. A. ANDERSON, *Alnwick.*

[Our correspondent will oblige by allowing fully twice the amount of space between the lines of his generally well-written communications.]

FRUIT FORCING.

Figs.—*Trees in Pots for Early Forcing.*—Red spider is the worst enemy of the Fig, barring scale, and must be subdued by forcible syringing at least once a day, in hot weather twice, directing the force of the water against the under side of the leaves, and if this is not sufficient an insecticide must be used, as it is important that the foliage be kept clean and perform its functions to the last. Scale does not yield to water, but requires treatment with an insecticide, than which there is nothing better than soluble petroleum. This is easily made by dissolving one part of softsoap in eight parts water by boiling, and then adding petroleum to any extent not greater than the extent of the dissolved soap and water, stirring well. For syringing use a wineglassful of the soluble petroleum to 3 gallons of water, and for applying with a brush to scale on wood that amount to 1 gallon. It is best to use hot water for mixing, and apply when cooled to 90° to 100°. Afford liquid manure to the roots, not to the extent of causing exuberance, but to insure a due supply of nourishment and the storing of assimilated matter in the wood. Pinching, with a view to induce a neat habit in young plants, with fruitfulness, must be attended to, regulating the stopping by the vigour of the plants and varieties. Strong growing sorts will need to be more closely pinched than those of moderate growth, but in all cases avoid overcrowding the shoots, for fruitfulness is not so much dependent on ample foliage as on a legitimate proportion duly exposed to light. The trees must not be huddled together, but each have space essential to the proper development of the tree under all the light possible, and free ventilation to solidify the growth as it is made. For early forcing the small varieties Early Violet and St. John's, with Pingo de Mel and Brown Turkey to follow, are suitable.

Second Crops.—Planted-out trees started about the new year will have the second crop in an advanced state, and must have a final thinning if not already effected, reserving those fruits near the base of the growths, which finish better than those near the points. Thinning is of vital importance, because fruit-bearing is an exhausting process, and the first crop having to be borne on the young growths of the preceding year, that part must not be enfeebled by carrying a heavy load of fruit. First crops are the most valuable. Any cultivator can grow second crops, and the chief cause of the failure of the first is imperfect ripening of the wood. Nor must the energies of the trees be taxed too severely by the second crop if they are intended to afford fruit early next season. Attend regularly to training and stopping the shoots, keeping the points well exposed to the light. Train thinly, tie loosely, and leave plenty of space in the ligatures for the shoots to swell. Stop side shoots at the fifth leaf, and rub off those not required, for spur growths to the extent of crowding are fatal to fruitfulness.

Afford water copiously through a light mulching of short lumpy manure, not any surpassing horse droppings duly sweetened. If used fresh and too abundantly there is danger of injury to the young growths. Such dressing admits air, and contains ammoniacal elements of great benefit to the trees. Liquid manure will be necessary according to the vigour of the trees and the extent of the rooting area. Trees in narrow borders may need it every day, others at longer intervals. They can hardly have too much water in hot weather, and they stone more in a week of fine weather than in a month of dull. The border, however, must be of sound material, and the roots active. Forcibly dislodge red spider by syringing twice a day, which, with proper feeding, will occasion little need of insecticides; but scale must be removed with a brush and a soapy solution. Admit a little air constantly, increase it early and close early, with plenty of atmospheric moisture, allowing the heat to rise to 90°, and the fruit will swell to a good size. Then a circulation of air constantly will enable the grower to produce Figs of the highest quality, which are wholesome, nutritious, and much appreciated at dessert.

Peaches and Nectarines.—*Early Forced Trees.*—Where trees are grown in pots of the very early varieties, such as Alexander, Early Beatrice, Early Louise, Hale's Early, Dr. Hogg, and Stirling Castle Peaches; Cardinal, Early Rivers, Advance, and Lord Napier Nectarines, they may be placed outdoors as soon as the wood has become firm, assigning them a sheltered sunny situation, keeping duly syringed and supplied with water. They will then not be liable to over-maturity of wood or buds, and buds will form on the laterals, which usually set freely. Planted-out trees started at or before the new year have been cleared of fruit, and the wood on which it was borne removed. This, and the taking out of any superfluous shoots, admit light and air, so that the wood retained becomes brown and hard, and the buds attain perfect formation, but this is contingent upon clean foliage and proper supplies of nutriment. The trees, therefore, must be syringed, and, if necessary, have an approved insecticide promptly applied, supplying water, and in the case of weakly trees liquid manure, to the roots so as to keep the soil healthfully moist. Mulching with light rather lumpy manure a couple of inches thick will keep the surface moist, the roots active, prevent the soil cracking, and assist in the retention of the foliage in health. The buds will be sufficiently advanced and the wood matured to allow the roof lights to be removed, and this should not be further delayed. This secures a sort of rest, has a most beneficial effect on the trees, while the soil becomes well moistened by the autumn rains.

Succession Houses.—The grand varieties Dymond, Royal George, Grosse Mignonne, Noblesse, Bellegarde, and Goshawk Peaches; Lord Napier, Stanwick Elruge, Dryden, Humboldt, and Pineapple Nectarines are now ripening on trees started in February, and leave very little to be desired in size, form, colour and quality. As the fruit is cleared off the trees, cut out the wood that has borne it, thinning the growths where they are so close that the foliage cannot have exposure to light and air. Cleanse the growth by means of the syringe or engine with water of dust and red spider or other insects, using an insecticide if necessary. Keep the borders moist, not soddened, affording liquid manure if the trees are weak, have borne heavily, and the buds are not developing well, but keep it from those inclined to over-luxuriance. Stop all laterals to one joint, but where the buds are in an advanced condition allow a little lateral extension, which prevents the premature ripening of the foliage by continuing the root action with at the same time growth on which to expend it without danger of starting the principal buds. When the buds are well formed, the fruit having been cleared off the trees, remove the roof lights. If under fixed roofs ventilate to the fullest possible extent.

Trees Swelling their Crops—Those started in March have stoned, and are taking the last swelling. Draw the leaves aside and raise the fruit by means of laths with its apex to the light. Water the inside border and outside if inclined to dryness, affording liquid manure and a mulch of lumpy manure. Avoid a close surface, for it excludes air, and that it be open is essential for the assimilation of food for taking up by the roots as its elaboration by healthy foliage. Ventilate early, in fact leave a little air on all night, syringing by 7 A.M., and through the early part of the day ventilate freely. When the sun loses power in the afternoon reduce the ventilation and raise the temperature to 85° to 90° about 4 P.M. with a good syringing and damping of surfaces, but it must be done with judgment, for when water hangs for any length of time on the fruit during the last swelling it is apt to damage the skin, causing it to crack, and imparting a musty flavour; therefore have the fruit dry before night, and if the day is dull omit the morning syringing. Directly the fruit commences ripening cease syringing, but afford air moisture by damping the paths, and especially the border, whenever it becomes dry, ventilating rather freely, and admit a little air throughout the night.

Late Houses.—If it is desired to accelerate the ripening ventilate rather freely in the early part of the day and up to the early part of the afternoon, then keep the heat obtained by reducing the ventilation so as to secure 80° to 85°, and at about 4 P.M. close, syringe well, and no harm will come if the temperature rises to 90° or 95°, ventilating a little at the apex about six o'clock so as to let the pent-up moisture escape and the temperature gradually cool down. Regulate and tie down the shoots as they advance, allowing no more than are necessary for next year's fruiting or for furnishing the trees. Let all have space for development, keeping laterals stopped to one leaf, and retain growths to attract the sap to the fruit. Any gross shoots pushing laterals from the leaf buds may be cut back to where the buds remain intact, or, if likely to disarrange the equilibrium of the trees, cut them out altogether. They only tend to promote gumming, imperfect setting, and certain casting of the fruit in stoning. Draw the leaves aside from the fruits, which raise from the under side of the trellis and expose to the sun. If the fruit is required retarded ventilate freely day and night; but do not, as a rule, have recourse to shading, though a slight shade obtained by drawing herring nets over the roof lights is beneficial than otherwise where the panes of glass are large. Observe the conditions laid down

in the preceding paragraph after the fruit commences ripening, also as to assisting the swelling.

Wall Cases.—Secure the growths to the trellis as they advance, being careful to allow space in the ties for the swelling of the shoots, neglect of this is a precursor of gumming. Keep the growths thin to allow of the foliage having full exposure to light and for development. Syringe about 7 A.M., the house having a little ventilation constantly, increasing this with the advancing temperature to 75°; or if it is desired to accelerate the ripening, maintain a temperature of 80° to 85° during the day, but always with ventilation, and close sufficiently early to maintain that temperature, but not to raise it above 90°. Syringe again about 5 P.M. Red spider will not make much headway, provided the syringing is thorough, and the trees are well supplied with water at the roots. Afford liquid manure to weak and heavily cropped trees. Thin finally directly the fruit is stoned. Neglect of early thinning results in thin-fleshed, flavourless fruits, and they sometimes ripen prematurely.

THE KITCHEN GARDEN.

Late Broccoli. — Attempting to grow extra fine late Broccoli frequently ends in failure. If the plants are grown luxuriantly they are liable to be destroyed by severe frosts, whereas sturdy, short-stemmed plants frequently produce valuable heads in the spring. Planting on firm, good ground, and not crowding the plants, are points to be observed in the cultivation of both midseason and late Broccoli, and no better site than a breadth of ground newly cleared of old Strawberry plants can be found. Draw moderately deep drills midway between the old lines of Strawberry plants, putting Broccoli plants 2 feet apart in the rows, and watering heavily. If midseason and late Broccoli have to be planted on ground recently dug make the latter firm, and also well ram the soil about the roots. Let the rows be from 30 inches to 3 feet apart, giving the greater distance if the soil is rich, and the plants from 2 feet to 30 inches asunder in the row.

Borecole, Chou de Burghley, and Savoys.—The first-named is most profitable when planted out on good firm ground somewhat early, but it is not yet too late to plant. Put out late they will not attain a great size, and may therefore be arranged 12 inches to 18 inches apart in rows 2 feet apart. Asparagus and Buda Kales are extremely hardy, and produce abundance of succulent shoots long after the other varieties are over. They may be planted thickly. Chou de Burghley, planted early on good ground, becomes coarse, also hearting in before it is wanted. Planted with late Broccoli it requires less room, a distance of 18 inches apart each way sufficing, and the hearts are neater, later, hardier, and much appreciated accordingly. Savoys may yet be planted on good ground. Allow the smaller varieties the same space ordinary Cabbages require.

Sowing Cabbage Seed.—July is the month in which seed should be sown with a view to having abundance of Cabbages next spring. In cold districts the second week in July is a good time to make the first sowing, on or about July 20th answers well in the Midlands, and the end of the month is early enough for the more favoured south. This season the ground is very warm, and when moistened prior to sowing the seed will germinate quickly. If the dry weather continues and broadcast sowing is resorted to, thoroughly soak the ground, sow the seed thinly, and cover with one-half inch of sifted dry soil. This plan is preferable to sowing in drills, especially if the plants are not pricked out previously to moving them into their winter quarters. The site cleared of spring-sown Onions is to be commended for early Cabbage, otherwise the ground to be planted must be well manured and deeply dug, so as to have it in readiness for the plants by the time these are fit to put out.

Parsley.—If seed is sown now in well moistened drills and covered with dry soil it will germinate quickly, and the plants, allowed sufficient room to develop, may probably prove hardier and more generally serviceable than those raised earlier in the season. Moderately strong plants transplant readily, and the check of removal prevents grossness and fits them for the winter. Select dull weather if possible for the operation, well soak the ground before raising the plants out of it, and save as much of the thick carrot-like root as can be done. Replant firmly in good ground, shade from strong sunshine and keep moist at the roots. Parsley is in such constant demand that every gardener will do well to take great pains in rearing abundance of it.

Winter Spinach.—Those who would be successful with this important crop must, as a rule, pay more than ordinary attention to the preparation of the ground devoted to it. The last week in July will be early enough to make a first sowing, and a distance of 15 inches apart will not be too close to arrange the rows of the superior large leaved varieties.

Watering and Mulching.—Where a heavy watering is given rows or beds of vegetables during very hot weather little trace is left of it twenty-four hours later, unless the ground is also mulched with strawy manure, old Mushroom bed manure, and the like. These mulchings are a great saving of labour, and of marked effect upon the crops they protect from drought at the roots. Apply them after a good soaking of water or liquid manure has been given, a dry covering, even of fine garden soil, having a better effect than a moist one. It is a mistake to think liquid manure of no service in hot weather. It is the poorer, hungrier soils that are the first exhausted of moisture, and a soaking of liquid manure is not taken out of the soil by the plants occupying it nearly so quickly as clear water would be. Once the watering of vegetables is commenced it must be persevered with, otherwise harm will result, the plants forming fresh root fibres only to lose them again. Driblets do more harm than good.

THE BEE-KEEPER.

The Swarming Mania.

Bees have had a perfect mania for swarming this season. Not in one district only, but throughout the country there has been an unusual number of swarms, and as is often the case they come off at a most inconvenient time. An extract from one of the numerous letters to hand from various parts of the country shows the difficulties that sometimes arise when swarms do not select the most convenient spot for alighting. "T.," writing from one of the midland counties, says, "I got very wild with my bees on Sunday. Just as I was going to church a fine swarm came out of one of my frame hives, but instead of clustering in one of the dwarf fruit trees, as they usually do, they clustered on the branch of a high tree, and after mounting a 42-rung ladder I successfully hived them. How is it bees so often swarm on a Sunday?"

The sudden changes in the weather are doubtless the cause of the swarming mania. When it has been dull for several days the bees are to a certain extent confined to their hive, this being followed by a few days of great heat. If the hives are not then well ventilated and the bees shaded swarming is almost certain to take place, as the bees will start queen cells, and when this has once taken place nothing will prevent them from swarming. It is then better to allow them to swarm, for if the new swarm is placed on sheets of fully drawn out combs, and a crate of sections placed on the top, they will at once store a surplus.

The original stock may then be used for queen rearing. This is a much better plan than cutting out all queen cells but one, as the bees will sometimes cluster round the entrance of hive and not work, although the weather may be favourable for doing so. It is very easy, too, in examining a strong colony, not to observe all the queen cells, and if more than one are left the bees will swarm again the first bright day that comes; and without attempting to answer the query, "Why bees so often choose a Sunday to swarm?" it may be that all is quiet in the apiary on that day, but it is usually connected with great and sudden heat, such as have occurred on several occasions this season. To-day (14th inst.) a shade thermometer registers 84°, and the sun shines brightly from a cloudless sky; perfect bee weather, but I fear too late for this district (South Yorkshire). Swarming is now all over, and those bee-keepers who still swear by the straw skep are looking forward to a good honey harvest owing to the great number of swarms they have had. May this prove as satisfactory as the swarming has been.

Stray Swarms.

In no previous season have I known or heard of as many stray swarms as this year. Where they have come from it is difficult to say. In some instances they have doubtless come from colonies that have made their home in trunks of hollow trees, or in the roof of some dwelling house, but more often they come from straw skeps that are kept by cottagers in various parts of the country. These are often left to chance, but are usually placed in a warm corner of the garden having a southern aspect. Swarms from stocks so situated often come off without being observed, and cluster not many yards from their stand, and if not at once hived will again get on the wing and fly a mile or more from their original stand, and are then lost. Great heat is often the cause of bees not settling. A correspondent in the West of England says, "An unusual number of swarms have flown away in this neighbourhood. I attribute the cause to the sudden heat, and have observed it before when similar weather prevailed."

In this district at least a dozen swarms have been seen flying over the tops of the trees, only in one instance were they taken. Some of the stray swarms would doubtless find a home in the hollow trees; others, again, would not be so fortunate, but would cluster unseen, and gradually dwindle away and die. This, I fear, is the end of many of the stray swarms, which, with good management in a hive, would have stored a surplus to the benefit of the bee-keeper as well as themselves. It cannot always be prevented, but in the majority of instances it may.

Swarms Deserting their Hives.

I do not know of anything more annoying to the bee-keeper than when he has carefully hived his bees, and placed them in a frame hive, to find on examining it the following morning that the bees have disappeared, and are nowhere to be seen. One such case has come under my notice this season. A cast from a straw skep was placed in a frame hive, half a dozen frames of fully drawn-out combs were given to them. These had been used last year for extracting purposes; since that time they had been stored

away, wrapped up in carbolic cloths. The combs had not been sweetened by exposing them to the air previous to being used on this occasion.

The cause of the bees deserting their hive was at once apparent—the combs still retaining a slight smell of carbolic, the bees absolutely refused to remain in the hive. Had the combs been sweet the bees would not have left them. In every instance that I have inquired into of bees leaving their hives, I have always found a cause for them doing so. If the interior of the hive is not sweet and clean, bees cannot be induced to remain in it. If disinfectants have been used on either frames or hive, they should be well exposed to the weather for a few days before being used, there will then be no difficulty in getting the bees to remain in their hives.—AN ENGLISH BEE-KEEPER.

TO CORRESPONDENTS

*** All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," *8, Rose Hill Road, Wandsworth, London, S.W.* It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects, through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Canterbury Bells with Deformed Flowers (*Tilmah*).—The flowers are what is known as "blind," the corollas being suppressed. This is considered to arise from using old seed, which may in some cases have that effect more or less, but the anthers are affected by a fungus (Ustilago antherarum), which prevents the development of the corollas. There is no remedy but to pull up the plants and burn them, and in future secure seed from a fresh source. The spores of the fungus probably go over with the seeds, enter the plants by the roots, ascend the stem, and develop in the anthers in due course. This takes place without destroying the host plant, but completely spoils it for flowering. In some cases seeds are formed without the corollas, and with these the spores of the fungus are probably transmitted.

Rose Leaves Diseased (*A. W. H.*).—Badly infested are the leaves with Rose brand fungus (Coleosporium pingue). This is the perfect stage, which may be recognised as prevailing where the dark brown or black spots appear, the orange spots being the earlier condition, or uredo stage. Both occur together, the latter, however, first; but there are abundance of both on the leaves. A worse case we have not seen. The resting spores remain over the winter, giving rise to promycelia and spores, which push their germ-tubes into the tissues, producing abundance of orange coloured uredo spores in the spring. Dust the plants forthwith with a powder containing 10 per cent. of sulphate of copper, such as in the fungicides advertised—viz., fostite, anti-fungi, or anti-blight, using a bellows apparatus so as to coat the leaves on the under side; or spray with Bordeaux mixture, taking care to reach every part of the plants. If you do not care to use a poisonous preparation obtain permanganate of potash from a chemist, mix 1 oz. in 3 gallons of water, and apply with a fine rose syringe, or, better, with a spraying apparatus, as being more economical and effective. Remove fallen leaves and burn them. In winter use sulphate of iron ¼ oz. per square yard and 7 lbs. of basic slag phosphate with 1¾ lb. of kainit per square rod, digging in after the leaves are down. When the plants are quite dormant dress them by means of a brush with a solution of bluestone (sulphate of copper), 1 oz. to 1½ gallon of water. Early in spring supply 4 ozs. per square yard of the following mixture:—Dissolved bones five parts, nitrate of potash three parts, and sulphate of lime four parts, mixed, pointing in lightly. Keep a sharp look out for the appearance of minute yellow spots on the leaves, or, preferably, before they appear dust the plants with a fungicide or spray with permanganate of potash, dissolving 1½ oz. softsoap in each gallon of the water. This causes better adherence to the foliage. Apply when the first leaves are about full-sized, and repeat every fortnight or three weeks up to the middle of June.

Propagating Pomegranate (*J. T. S.*).—Plants may be increased by cuttings of shoots when becoming firm at the base, keeping them rather close and shaded until rooted. Some persons prefer inserting cuttings of ripe wood towards the end of summer in sandy soil. Layering is a sure method of increase, this being done in pots, notching the growths where they are to be inserted in the soil, and making each secure with a peg. The pot can be raised by means of sticks to the required height. Scarce varieties are increased by grafting on stocks of the common kind, which are raised from seed, usually taken from imported fruit, and sown in sandy soil in gentle heat early in the spring. The plants are ready for grafting when of the thickness of the scion, operating by whip-grafting before the grafts commence growing, but the stocks in activity.

Duke of Buccleuch Grapes Splitting (*W. T.*).—The chief cause of the berries cracking is excessive moisture (for the variety) in the atmosphere, with too liberal supplies of nourishment at the critical period of ripening. There is no preventive other than allowing as good a spread of foliage under such circumstances as can well be afforded, keeping rather dry at the roots and affording a plentiful amount of air, some constantly. Cutting through the shoot about half way affords some relief, but not always enough; therefore more air, so as to induce constant evaporation, is the most effectual. Of course, this is difficult of attainment with other varieties in the house; but even the extra ventilation will not materially prejudice the others, but the border cannot well be kept much drier on their account. You may notch the shoots below the bunches still more, but not so far as to prejudicially affect the leaves, or not more than to make them a little limp; but air with a drier atmosphere is the best preventive of the evil in question.

Peaches Hollow and Decayed (*H. S. W.*).—The large and fine fruits were, as you say, "hollow and decayed at the stone." It is a very serious matter to have such grand fruit go wrong on a six-years-old tree, not a few here and there, but "all the same last year and this." We are sorry to see such a result accrue from the assiduous attention you have given, and sympathise with you on the misfortune. The fruit are what is known as "split at the stone." The cause has been attributed to imperfect fertilisation, but in your case the part of the kernel inside the integument was perfect in embryo. The splitting of the stone in this case arises from excessive development, the available mineral elements not being in due proportion with the nitrogenic. Some varieties, however, are more subject to it than others. We have found lifting a complete preventive, the work being done carefully in the autumn as soon as the leaves give indications of falling, and after lifting applying a dressing of basic slag phosphate, two parts; and double sulphate of potash and magnesia, one part; mixed, using 4 ozs. of the mixture per square yard, and pointing in with a fork without material prejudice to the roots. In the spring, when the trees commence growing, supply a mixture of dissolved raw bones, dry and crumbling, three parts; and muriate of potash, one part; mixed, using 4 ozs. per square yard, covering with a light mulching of decayed lumpy manure, not more than an inch thick. This, with the usual cultural treatment, gave us complete immunity from "splitting at the stone." The advertised fertilisers would answer quite as well, but lifting is the most needful operation, and if the soil be deficient in lime add some old mortar rubbish, broken up fine, to the soil as the work proceeds.

Malmaison Carnation Plants Dying (*F. C.*).—The plant in the 24-size pot was completely decayed and dead at the stem where in contact with the soil, and in the decayed substance were root stem eelworm (Tylenchus obtusus). This was the cause of the stem decaying, and the "grass" simply collapsed in consequence of the supplies of nutriment being cut off, but gradually, so that the foliage first became pale and spotted here and there and withered on the plant from the base upwards. The spots closely resemble those due to the fairy-ring spot fungus (Heterosporium echinulatum), which was discovered and described by the late Rev. M. J. Berkeley twenty-five years ago, but there are neither hyphæ in the tissues nor outgrowths, and the eelworms are confined to the root stem. Even the plant with an apparently sound root stem has the spots, and the stem tissues in the ground are affected with the eelworm. The cutting or small plant had entirely succumbed at the base—its trusses decayed and eelworm in them. It is the species named, not the ordinary stem eelworm (Tylenchus devastatrix); but this also attacks Carnations. The soil is too open and fibrous for these plants. We should add to it at least 2½ per cent. of best chalk lime, air-slaked, or only using sufficient water in slaking to cause the freshly burned lime to fall to a fine powder, mixing it with the soil, and allowing this to lie for a few weeks before using. For direct application to the plants, sprinkle about half of a small teaspoonful of common salt on the soil of a 24-size pot, and water so that the water shows at the drainage. The next time the plants need water, use a similar amount of basic slag phosphate per pot, and wash in as with the salt. When the plants require water again, use a similar amount of this mixture: sulphate of potash, three parts; dissolved bones, dry and crumbling, two parts; sulphate of ammonia, one part; mixed, washing in as before. The plants may look rather sickly for a time after the application, but they usually recover when not too seriously infested. If you can obtain soluble phenyle, mix at the rate of a quarter pint to three gallons of water, and apply before the salt and other ingredients are used. In that case you may use all three substances mixed together—that is, one part salt, one part basic slag phosphate, and one part of the mixture of sulphate of potash, dissolved bones, and sulphate of ammonia, employing a thimbleful at intervals of a fortnight or three weeks to a plant in a 24-sized pot. Burn the worst of the plants, and use less vegetable matter in the soil.

Plum Trees Diseased (*W. S.*).—Your question cannot be properly answered this week. The subject shall have attention in an early issue.

Sowing Grass Seeds (*Kittie*).—The state of the weather and condition of the soil are matters of more importance than any mere date in the calendar for sowing lawn or grass seeds. You may sow on the north aspect as soon as the ground is in a thoroughly moist state. Excellent lawns have been formed by sowing in August and early September, and it is better to sow in the last named month when the ground is moist than earlier when it is dry. We should not let a favourable opportunity pass in August if we intended to sow. It is advantageous to have a sufficient growth of grass to be "switched over" with a very sharp scythe in the autumn.

Exhibiting White Grapes (*Vitis*).—In the judging code of the Royal Horticultural Society, Tynningham, Bowood, and Charlwood Muscats are for purposes of exhibiting regarded as synonymous with Muscat of Alexandria. Canon Hall Muscat is not so considered and specified; therefore if the show to which you refer is to be judged in accordance with the R.H.S. rules, an exhibit including Muscat of Alexandria and the true Canon Hall Muscat in such a class as you mention would not be open to disqualification; but if the adjudications are not to be under these rules, there is no telling what view the judges might take, and if their decision is announced to be "final," and the exhibit were disqualified, they would be masters of the position. You must now exercise your own discretion in the matter. If all exhibitions were to be judged in accordance with the R.H.S. code, no one would be in the least prejudiced, while both exhibitors and judges would know exactly what to do in such cases of doubt as this.

Stopping Peach and Nectarine Trees in Pots (*Lampeter*).—The shoots should have the points pinched off when from 6 to 10 inches in length. This refers to the leading shoots of the trees, and where desired to originate others for furnishing them with branches, it not being advisable to have them very closely together, but so far apart that the hand can be passed between them without disturbing the leaves. This will allow light to reach the foliage at the base of the branches, and they will form firm growths on which the fruiting depends. Side shoots on the branches, and where not required for extension, should be pinched to two or three leaves to form spurs, and the laterals from these and elsewhere may be pinched to one leaf as made. Extension growths once pinched will push again, and when the leading lateral has made about three leaves stop it, when probably not more attention in these respects will be required for the season. Keeping the growths carefully stopped and fairly thin is a point of some consequence in order to secure a fairly symmetrical habit, as well as for insuring fruitfulness.

Madresfield Court Grapes (*W. H. T.*).—We think you have rather overcropped the Vines for securing the best colour in the Grapes. Moreover, this variety does not colour so quickly as some others, and the fruit may yet finish better than you imagine. You may perhaps be surprised to hear that the fine berries you sent have perceptibly deepened in colour since we received them. Beyond giving another application of the farmyard liquid, if the border is in the right condition to receive it, we do not see what can be done in addition to the excellent routine treatment described in your letter. We have known more than one instance of the border being kept fully too dry during the colouring stage of this fine Grape from a fear of the berries cracking, but they are much more liable to split when the border is too dry and the atmosphere too close and moist than they are under reverse conditions. Of course it would be foolish to give either water or liquid manure if the border is already moist enough right through for the well-being of the Vines. Please say whether there has been any improvement in the Grapes since you wrote more than a week ago; also say whether the other black Grapes in the house colour well as a rule or not, and the subject shall have further attention. If your letter had not been accidentally misdirected it would have been just in time for being answered last week.

Pruning Young Orchard Trees (*L. Morris*).—You planted a young orchard in March and was advised not to prune, and so the long young branches were left intact. The leaves have fallen from the branches of some of the trees except tufts at the ends, and there is an attempt at premature fruiting. You now ask "if you should cut back freely or whether the trees may be left to recover another year?" Cut all the trees back freely, but not now. October will be soon enough. If you leave them unshortened another year some, if not all, will be practically ruined, as hundreds have been by want of assistance. In all probability, if two-thirds of the length of the branches had been cut off when the buds commenced swelling in the spring the trees would be in a much healthier condition than they are now. However, as they are alive, and you shorten them as suggested in the autumn, you may not lose much in the end, as they may be expected to make good growth next year—much better than can possibly be produced if left as they are. When the trees were dug up more than two-thirds of the fibrous roots which had been necessary to produce and support the branches were left behind in the soil. With more than two-thirds of the root power lost, how do you think the unshortened branches could be supported and free extension growths produced by them? The extent of the shortening depends somewhat on the length and number of the young branches. If you like to send particulars on those points we will willingly refer to the subject again. Elementary questions are often the most important of all. We suspect you are more likely to err in not shortening the branches enough than shortening them overmuch.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*R. B.*).—1, Campanula latifolia; 3, C. pumila; 4, C. pumila alba. There was no specimen in the box numbered 2. (*C. D. F.*).—1, Inula glandulosa; 2, Olearia Haasti; 3, Viburnum lantanoides; 4, Polemonium cœruleum variegatum. (*F. V. C. O.*).—1, Bocconia cordata; 2, Verbascum Chaixi; 3, Antennaria tomentosum; 4, Spiræa Billardi; 5, Œnothera Lamarckiana; 6, Thalictrum aquilegifolium.

COVENT GARDEN MARKET.—July 21st.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	0 0	to 0 0	Lemons, case	11 0	to 14 0
Currants, Black, half ...	7 6	7 9	Raspberries, tub, £27 to £28 ton		
,, Red, half	3 6	4 0	St. Michael's Pines, each	3 0	8 0
Filberts and Cobs, 100 lbs.	0 0	0 0	Strawberries, per lb.... ...	0 3	1 0
Grapes, lb....	0 8	2 0			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, ½ sieve	0 0	0 0	Onions, bushel	3 6	4 0
Beet, Red, doz	1 0	0 0	Parsley, doz. bnchs	2 0	3 0
Carrots, bunch	0 3	0 4	Parsnips, doz	1 0	0 0
Cauliflowers, doz.	2 0	3 0	Potatoes, cwt.	2 0	4 0
Celery, bundle	1 0	0 0	Salsafy, bundle	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Seakale, basket...	1 6	1 9
Cucumbers...	0 4	0 8	Scorzonera, bundle	1 6	0 0
Endive, doz.	1 3	1 6	Shallots, lb.	0 3	0 0
Herbs, bunch	0 3	0 0	Spinach, pad	0 0	0 4
Leeks, bunch	0 2	0 0	Sprouts, ½ sieve	1 6	1 9
Lettuce, doz.	1 3	0 0	Tomatoes, lb.	0 4	0 0
Mushrooms, lb.	0 6	0 8	Turnips, bunch	0 3	0 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var. doz. ...	6 0	to 36 0	Heliotropes, per doz. ...	4 0	to 6 0
Aspidistra, doz....	18 0	36 0	Hydrangeas, doz.	8 0	10 0
Aspidistra, specimen ...	5 0	10 6	Lilium Harrisi, doz.... ...	12 0	18 0
Calceolarias, doz.	3 0	6 0	Lobelias, doz.	2 6	4 0
Coleus, doz.	2 6	4 0	Lycopodiums, doz.	3 0	4 0
Dracæna, var., doz.	12 0	30 0	Marguerite Daisy, doz. ...	6 0	9 0
Dracæna, viridis, doz. ...	9 0	18 0	Mignonette, doz.	4 0	6 0
Euonymus, var., dozen ...	6 0	18 0	Myrtles, doz.	6 0	9 0
Evergreens, var., doz. ...	4 0	18 0	Palms, in var., each... ...	1 0	15 0
Ferns, var., doz.	4 0	18 0	,, specimens	21 0	63 0
Ferns, small, 100	4 0	6 0	Pelargoniums, doz.	8 0	12 0
Ficus elastica, each	1 0	7 0	,, Scarlet, doz.	3 0	5 0
Foliage plants, var., each	1 0	5 0	Rhodanthe, doz.	4 0	6 0
Fuchsias, doz.	4 0	6 0	Spiræa, doz....	6 0	9 0

Bedding plants in great variety.

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchid Blooms in variety.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms ...	2 0	to 4 0	Marguerites, 12 bnchs. ...	2 0	to 3 0
Asparagus Fern, bunch ...	2 0	3 6	Mignonette, doz. bnchs. ...	2 0	4 0
Bouvardias, bunch	0 4	0 6	Myosotis, doz. bunches ...	1 6	2 0
Carnations, 12 blooms ...	1 0	3 0	Orchids, var. doz. blooms.	1 6	12 0
Cornflower, doz. bnchs. ...	1 6	3 0	Pelargoniums, 12 bnchs. ...	4 0	6 0
Eucharis, doz.	3 0	4 0	Pinks, doz. bnchs.	2 0	6 0
Gardenias, doz....	2 0	4 0	Pyrethrum, doz. bnchs	1 6	3 0
Geranium, scarlet, doz. bnchs.	4 0	6 0	Roses (indoor), doz.... ...	0 6	1 0
Gladioli, doz. bnchs. ...	4 0	8 0	,, Tea, white, doz. ...	1 0	2 0
Iris (var.), doz. bnchs. ...	4 0	0 0	,, Yellow, doz. (Niels)	1 6	4 0
Lilium longiflorum, 12 blooms	3 0	4 0	,, Red, doz. blooms ...	1 0	3 0
Lily of the Valley, 12 sprays	1 0	2 0	,, Safrano (English) doz.	1 0	2 0
Maidenhair Fern, doz. bnchs.	4 0	8	,, Pink, doz....	3 0	5 0
			,, outdoor, doz. bnchs.	2 0	6 0
			Smilax, bunch	3 0	4 0
			Tuberoses, 12 blooms ...	1 0	1 6

EXTREMES MEET.

Yes, that indeed they have during this past month of June—a month that has been anxiously expected, a month that will ever be remembered wherever the Englishman is found, or the English tongue spoken. Early in the year the prophets were busily at

work, and had we been superstitious our minds would have been filled with dire foreboding. Queen's weather we prayed for, "Cold and rain, a season like the miserable one of 1861," was the prophets' cry. We are so dependent here on sunshine. Moisture is usually superabundant (we speak advisedly), the drougbty summers in the Midlands north are rather tbe exception than the rule. A really wet season, that is wet with cold, is disastrous. The summer is too short as it is, that we want every bit of bright weather that we can get.

Well, June has come and gone, and like fickle April or Mrs. Gummedge, has been most "contrairy;" and taking her as a whole she has done us good, and not ill. May went out with balmy breezes and fair skies, and June came in with every promise of blessing. The late showers of May had caused the grass to spring with great rapidity, work was forward, and tbe farmer had bis hands more than full. The farm notes from all the country side for tbe first week in June note tbis delightful state of things—beneficent sbowers, warm sunshine, pastures carrying any amount of stock, and the aspect of the cornfields cbanged in twenty-four hours. Till then it had been feared that the keeping for the summer would be scarce, and the hay crops meagre. As stack yards were empty, and hay and fodder nil, the prospect was gloomy. We do not doubt that possibly in some of the more southernly counties the hay crop may yet be below the average, but taking the country as a whole the crop is excellent; and this year of Jubilee there may be hay, and to spare—winter keep seems assured.

Whit-Sunday found us sweltering; brilliant sunsbine, with little or no breeze, the ground felt warm under the tread, and the day generally was spent as a period of rest. By Monday morning there was an indefinable something in the air; a change seemed imminent, and come it did; and that quickly. We were all shrugging our sboulders till one, braver than the rest, suggested a fire. No sooner said than done; but wbat about the poor stock in the fields? "Cold as Cbristmas" was our verdict, and Tuesday worse, with leaden skies and a sullen downpour, that only resolved itself into a drizzle as the day spent. Then came cold drying winds, to be followed only by blazing suns and the regulation thunderstorm. Why cannot we have good things in moderation? From the 13th to 19th stormy winds, and such winds! making the gardens a very wilderness, and dashing and thrashing all delicate foliage till the country appeared as though it had suffered from a blast of shrivelling flame. The rain was plentiful, and this and the storm generally seem to have been confined to the more northerly provinces.

This is how one north country farmer speaks of tbe gale of June 16th. "The storm of wind on June 16th was such as the oldest inhabitant cannot remember in that month, which tossed and knocked our crops about most disastrously." Tbis is from Lancashire. On the same date—*i.e.*, June 16th, we read, "Wigtonshire: A flood, followed by a hurricane of wind; branches were broken off trees, fruit trees fairly blanched and spoiled, vegetables almost blown out by tbe roots, Potatoes blackened in the leaves, and singled Turnips fairly blown away. On the 19th yet another flood." Trinity Sunday opened very doubtfully, and although little or no rain fell, there was every appearance of it, to be followed by a close, dank Monday, when the earth steamed. Then came forth old Sol in his glory. His Majesty to greet Her Majesty, and right royally did he do it, closing in with soft mists that made the night redolent of cboice odours. Wednesday was almost unbearably hot; but on Thursday we shut the windows and remarked tbat the house was comfortable.

Monday, 28th, down came the rain in sheets, and the air was warm and moist as a stove house; and pleasant sunsbine closed this extraordinary month—well, we wanted a record month, and we have got it. At one time there appeared every prospect that the great Royal Show at Manchester would be in difficulties owing to the storm of the 16th January—the bavoc it made among the wooden shedding and the galvanised roofs. But it would take more than a storm at the eleventb hour to disconcert the executive of the Royal, and tbe morning of 23rd found all spick and span. The management of that show is now brought to such perfection that only those who cavil for the love of cavilling can find anything to disagree about.

We have still another record of this month—such a sad one that we hesitate to add it to our cheerful pages, but no account of June, 1897, would be complete without a reference to the disaster which overtook the county of Essex on June 24tb, Midsummer Day. On that day the heat was excessive in London and Essex, and the thermometer registered 90° in the sbade. Only once has this occurred during the last nine summers. Then broke a thunderstorm unparalleled in our annals. At first we failed to grasp the magnitude of the disaster, but figures are awkward things to deal with, and when we hear the Lord Mayor of London has opened a fund for tbe relief of the distress in Essex, we want full particulars. Here they are. The area affected is stated to be from seventy to 100 square miles, from Epping to Abridge, to Burnham and Clacton. The money value of the damage is estimated at £200,000. All tbis destruction was wrought in twenty minutes! Hailstones of abnormal size, slabs of ice 4 or 5 inches long, 3 inches wide and 2 thick. Elms, Oaks, and Ash trees uprooted, those still standing fairly stripped of leaves, fields of Wbeat where not one ear has escaped, Peas and other crops mangled and dying—the market garden industry, with the necessary greenhouses wrecked, destruction everywhere, and ruin staring the poor occupier in the face. All the work of the winter and spring undone, and in only twenty minutes! Mr. Long has been down himself to the scene of the disaster, and has also instructed an inspector to prepare a full report of the damage. Whether Government will do anytbing in the shape of a relief grant we do not know. To the benevolent an appeal will not be made in vain, and if we could find our millions for our stricken brethren in India surely we can find our thousands for the poor striving farmers of the Essex class.

WORK ON THE HOME FARM.

The weather is simply magnificent, and the Clover and hay are being stacked in splendid condition; many years should we have to carry back our memories or our diaries to find such a fine crop of well-harvested fodder.

Never did fine weather make an appearance at a more acceptable time; it has been simply splendid for killing weeds amongst the Turnips, and the heat has been also beneficial to the young plants, for young Turnips love warmth. Great complaints are rife of the damage done by roots to the plants after singling, in some cases one-half having been uprooted by the birds in search of wireworms. If the rook never pulled up a plant unless it were infested with wireworm, little blame would attach to him; but, unfortunately, the younger birds are not sufficiently discriminating, that is, are not educated highly enough to make no error in selecting only the infested plants.

Grain crops look well, and we can detect in the earlier fields signs of changing colour. With a continuance of bright sunshine, harvest should commence very early in August. That the grain is swelling fast is shown by the attention paid to it by the sparrows.

Maybe some farmers are wishing for rain, but except on very weak dry lands they would be better without it. There is an abundance of keep for the stock, and as roast meat is better than boiled for nearly all animals, rain might do much harm to their well-being, without materially increasing the bulk of their fodder supply.

Flock masters are about weaning the lambs. The best plan is to take the ewes away, leaving the lambs in their old pasture. The ewes should be put on short commons for a few days, and water must be carefully avoided. It is a good plan to place the ewes in a foldyard or similar place for twenty-four hours after the lambs have been weaned.

We were a few days ago very much interested in the very great contrast presented by two crops of Wheat in adjoining fields, one being apparently three times as heavy as the other just over the hedge. The land is naturally of a light nature. On inquiring the reason from the owner, we were informed that the field producing the poor crop had been heavily clayed at the rate of 140 tons per acre four or five years ago, and that it had never had a good crop on it since, but was hoping for better results in the future.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

DATE.	9 A.M.					IN THE DAY.				
1897. July.	Barometer at 32° and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature.		Radiation Temperature		Rain.
		Dry.	Wet.			Max.	Min.	In Sun.	On Grass.	
	Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Inchs
Sunday ... 11	30·384	66·3	57·6	N.E.	65·0	75·0	51·4	118·1	44·0	—
Monday 12	30·310	64·2	57·1	N.E.	64·9	72·0	51·2	121·0	45·7	—
Tuesday 13	30·124	71·1	61·6	N.E.	64·9	77·8	53·4	128·3	47·8	—
Wednesday 14	29·977	71·4	62·2	N.E.	65·6	80·0	53·9	125·1	47·4	—
Thursday .. 15	29·956	67·9	56·6	N.E.	66·0	81·1	51·2	126·2	44·8	—
Friday 16	30·103	66·0	57·9	N.	67·0	79·7	54·8	120·9	48·6	—
Saturday .. 17	30·109	72·1	63·9	N.	67·9	80·8	59·0	121·8	53·7	—
	30·133	68·4	59·6		65·9	78·1	53·6	122·3	47·4	—

11th.—Bright sunshine all day.
12th.—Overcast early, and generally cloudy till 0.30 P.M.; sunny afternoon.
13th.—Bright sunshine throughout.
14th.—Bright sunshine all day.
15th.—Brilliant all day.
16th.—Bright sunshine throughout.
17th.—Sunny early; generally overcast after 11 A.M.

A warm rainless week, following one which was practically rainless.—G. J. SYMONS.

Journal of Horticulture.

THURSDAY, JULY 29, 1897.

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HARDY FLOWERS.

AS is the life of men and women, so is the life of the flowers. We come upon the world's stage, bear our share of the sunshine and storm of our time, and pass away. So, too, come the flowers. They have their trials and their joys. They are hurt by the storm; they revive in the sunshine, and fulfil their part until the winter carries them from our view. But a few days ago the garden was enveloped in driving rain and invaded by the remorseless gales which, rude as a horde of invading barbarians of old, wrecked and ruined all they touched. To-day it is flooded with sunshine, and the taller flowers scarce move to the gentle motion of the air. The change is great. Welcome is it to the gardener, and welcome seems it to the flowers, though they still bear traces of their recent trials.

That white Rose on the wall—a picture of beauty little more than a week ago—has not been spared. The flowers, once pure as the winter's snows, but full of warmth and grace, were disfigured by wind and rain, and were no longer forms of chastest beauty. That mass of white Pinks, once so delicious in odour and so pleasing in form, has become a heap of sodden, shapeless, scentless lumps. The Rose has begun to recover, and ere winter comes will give us many a welcome flower, but the Pinks have gone from our view for the year.

The great Delphiniums, with their spikes of blues and purples, have suffered too, and attest the fierceness of the trials they have undergone in their struggles with the storm. Others tell the tale; but it is an unwelcome one on a day such as this on which these words are written. It is one in which to rejoice and not to mourn, one in which we can drink to the full the cup of enjoyment prepared for the lover of gardens and flowers.

Looking through the garden after one of those seasons of storm and rain, we may pick up here and there some lessons to be turned to account again. One of these is the value of the single Pinks in bad weather. While the

exquisite double-flowered varieties—so redolent of sweet odours—have been defaced beyond repair, some of their single-flowered sisters are again covered with bloom, so little have they suffered from the rain.

There is one on a rockery which is admired by most people who see it, although, fine as it is, I think it a little formal in its way. It is an Irish-raised seedling, and probably from one of the old laced Pinks. I believed it is named Beauty. The flowers are large, being fully 1½ inch across, and the colour is of the purest white, with a broad, very dark chocolate-coloured zone, which contrasts well with the white ground and the good-sized white eye. It also holds its flowers well up, and does not let them hang down as do so many of the double forms. The edges are prettily fringed, and although, as I have said, a little too formal to be perfect, it is a pretty and attractive flower. There is a good deal of variety to be obtained in the way of seedling Pinks, and some beds of these seedlings I have seen contained excellent flowers worthy of distinctive names.

Very pretty, too, are some hybrid Pinks, among them seedlings from seed kindly given me by the Rev. C. Wolley-Dod. Dianthus superbus is unmistakeably present in the appearance of some of these, the deeply fringed and laciniated petals showing its influence.

The mention of hybrids makes one think it an appropriate time to again refer to Mr. Carrington Ley's hybrid Poppy, mentioned on page 19. This is to endeavour to make, as far as possible, the *amende honorable* for questioning the hybrid origin of this Poppy. It was, perhaps, as well that the saving clause that it might "arise from my own slowness of observation that I saw no conclusive evidence of hybrid origin" appeared, as I fear my observation was at fault. A letter from the kind donor of the plant, in reply to one of mine, led me to examine it once more, although for the time out of bloom. The result has been that I find that the form of the seed capsule and its colour present evidence of the relationship of the plant to Papaver rupifragum; while the flowers, as said on page 19, are those of a small P. bracteatum. There thus seems satisfactory proof of the hybrid origin of this Poppy, and it is a duty to correct any possible misapprehension to which former remarks might have given rise.

A seldom seen and rather singular looking flower has been in bloom for some time, and has attracted a good deal of notice from the garden visitors. This is one of the Sisyrinchiums, a genus belonging to the natural order of Irideæ. The best known of the genus is S. grandiflorum, a pretty spring-flowering purple species, of which there is also a white variety. S. angustifolium, often known as S. anceps, the "Blue-eyed Grass" of North America, is also occasionally seen in gardens. The one under notice—S. striatum—is, however, not often met with, and only came to me last year, and forms a pleasant reminder of a delightful garden in the Emerald Isle, where a happy time was spent.

Sisyrinchium striatum before it comes into flower looks exactly like a Flag Iris, with its broad glaucous green leaves and upright habit. From among these are produced the stems, which, including the panicles of clusters of flowers, are about 3 feet long. The spike or panicle of blooms is composed of several circles of small pale yellow flowers, with faint brown veins. At the outer edge the flowers are almost creamy white, deepening gradually to bright yellow at the base. These flowers are stemless, and are rather more than three-quarters of an inch across. They only open in the sun, and then the plant is very distinct with its cluster or whorls of flowers. As may be supposed from this habit a sunny position should be given, and a rather dry soil in winter will prevent the loss of a plant worth growing from its appearance. It comes from Chili and the Andes of Mendoza, and is propagated by seeds or division.

Although not showy Sisyrinchium striatum, which, by the way, has several synonyms, will attract notice amid the glow and colour which fills the garden now. Roses, Delphiniums, Pinks, exquisite Carnations, Poppies, Potentillas, Sedums, Sempervivums, Agrostemmas, Peas, Anthemises, Irises, Campanulas, Mulleins vie with the brightness of the earlier Lilies in bloom as we look out upon their glowing colours. The chaste Lily of the Madonna, L. candidum, is ready to open, when it will find rivals in the Water Lilies, which, now that summer has really come, look out from the water of the garden pool. Though the storm has left its marks still upon many flowers, there is left joy enough, beauty enough in what remain. The horn of plenty is full, well nigh to overflowing.—S. Arnott.

STRAWBERRY CULTURE.

(*Continued from p.* 69.)

General Management.

Shortly after the fruit has been gathered, and when the requisite number of young plants have been obtained from the beds, the latter should have a thorough overhauling. All runners and decayed leaves must be cut away, weeds and the rougher portions of straw removed, so as to leave the beds tidy till the autumn. The only attention then required till October will be to give an occasional hoeing to keep down weeds while they are in a young state.

As early as convenient in October the surface of the soil ought to be slightly broken up with a fork, and a 3-inch layer of half-decayed manure placed over it, covering the whole of the ground both between the rows and around the plants. This practice of autumn mulching is not only valuable from a manurial point of view, but also gives just the protection needed during severe winters. When the beds are situated on poor soils the plants derive immense benefit from the application of liquid manure during winter and early spring. Cesspools are often emptied at those times, and so powerful a fertiliser should never be wasted, for it is a "gold-finder" if applied to fruit gardens and orchards at any time except when the fruit is ripening.

Strawing the Beds.

This simple operation is performed at various times and in many different ways by gardeners and market growers. The latter frequently mulch with rather rough manure in the autumn, this becomes washed by the winter rains, and in spring is perfectly sweet and serves for the fruit to rest upon; but all things considered, I prefer to straw the beds in spring. The plan followed by Mr. Owen Thomas in the Royal Gardens seems to be a perfect one, which if more generally adopted would often prevent the prospect of a good crop being ruined by the occurrence of a sharp frost at blossoming time. Mr. Thomas piles the straw loosely between the rows just before the flowers open, they are thus to a certain extent constantly protected, and when danger from a severe frost is apprehended, the material already at hand can be quickly scattered over the plants, and when the fruit is set it only needs pressing around them

If the weather happen to be very dry when the fruit is swelling, one or two thorough waterings should, if possible, be given, as the performance or omission of this practice often accounts for the difference between a poor and a fine crop of fruit. Old plants become distressed through drought much sooner than young ones, and in some instances the young fruits wither and die; a state of affairs puzzling to not a few.

Varieties.

Laxton's No. 1 is generally considered the earliest Strawberry in cultivation, and being a good cropper, it is a valuable variety worthy of the attention of all. Its one weak point is that the flavour is not quite first-rate. Early Laxton is now being offered by the noted firm whose name it bears, who state it to be still earlier than the variety just named. A few plants of this should certainly be secured, as none of us can afford to neglect any improvement in this direction. Sir Trevor (raised at Windsor) is also slightly earlier than Laxton's No. 1, and should, therefore, when possible, be obtained for trial. Next in point of earliness comes Noble, which is really a grand Strawberry, notwithstanding its deficiency in flavour when grown on some soils. In light land it crops well, is very early, and the flavour is fair. In the markets it is certainly a fruit that "takes." Royal Sovereign is only a few days later than Noble, and in every respect a grand variety, the quality in this case being of the best. King of the Earlies is a wonderful cropper, but the fruit is small. The older variety, Vicomtesse de Thury, though a little later than the foregoing, is a good cropper, the flavour also being excellent. Laxton's Monarch is, perhaps, the finest second early in existence, being of enormous size,

wedge-shaped, and of a Queen-like flavour. The plant is of a compact habit of growth, and the foliage thick and leathery. If only one variety can be grown, let it be Monarch. Scarlet Queen is bright, handsome, and rich flavoured, and on that account should be grown as a second early.

Veitch's Perfection may, I think, be truly described as an improved British Queen. It is the result of a cross between that well-known variety and Waterloo, and seems to retain the good qualities of both parents. Among midseason varieties no better one can be found than Leader ; each year it gains in favour, and I think will in the future be as widely popular as Sir Joseph Paxton has been. The latter good old variety is still largely grown for market purposes. On heavy soils it is extremely prolific, and its handsome fruit always takes the eye ; the flavour also is very good.

Sensation will, I fancy, supersede President, which variety it greatly resembles, but is much larger. Laxton's Mentmore, sent out for the first time this season, promises to be a good thing. It is handsome in appearance, and, unlike most Strawberries of recent introduction, has a smooth external skin, carrying an attractive polish.

It is rather surprising that Auguste Nicaise is not more generally grown, producing as it does fruit of enormous size. I have seen grand crops of it at Wilton in Wiltshire, where Mr. Challis, Lord Pembroke's able gardener, grows it splendidly. A. F. Barron, Bothwell Bank, and Kitley's Goliath are also good main crop varieties.

Rich Flavoured Varieties.

There can, I think, be no doubt that the great size obtained in Strawberries of recent introduction has been obtained slightly at the expense of flavour ; I, therefore, give the names of a few of the best flavoured ones : Dr. Hogg, suitable for heavy soil ; Empress of India, Gunton Park, Latest of All, and Dr. Roden's Countess ; the last named is both large and handsome, and in every way a fine variety.

Late Varieties.

The season may be greatly prolonged by planting these under a north wall or in some other cool position. As a market speculation such a practice on a large scale would, I think, prove remunerative, and in private gardens late Strawberries are always highly prized. The best sorts to plant for the purpose are Frogmore Pine, Lord Suffield, Latest of All, and Waterloo.—Pomona.

PROPAGATION OF CONIFERS AND SHRUBS.

It is not often that gardeners in private establishments undertake the increase of trees, shrubs, and Conifers, but the propagation of many kinds by means of cuttings is easy, as they can be readily rooted and quickly grown into neat little bushes. A cold frame is all the protection required in the way of glass, but it is better if two smaller ones can be appropriated instead of one of the same size as the two, for the reason that some sorts require a longer time to root than others. Those that need more time can have the protection of the extra frame, while if the plants are kept together at the time of insertion the early rooted plants can be transferred to other positions some months before the latest varieties. The size of the frame must be regulated by the requirements of the cultivator.

A shallow frame answers the best, for the reason that when new growth commences it is not drawn up weakly through being so far from the glass. The bottom of the frame should be covered with coal ashes, thorough drainage being essential. Over this have a layer 2 inches thick of decomposed horse manure or half-decayed leaves, into which the roots penetrate, as the soil clings better to the roots when manure or leaf soil in a rough state is present. Over this lay the soil 3 inches thick, which should be composed of equal parts loam, peat, leaf soil, and sharp silver sand. Many of the plants which are to go into the soil are really peat-loving, therefore it is necessary that peat be used ; while some of the kinds would do equally well without, still none objects to this mixture. Make the soil quite firm, that it be not of a spongy nature, as much depends upon the firm manner in which the cuttings are inserted. If the soil be moist, as it should be when used, no difficulty will be experienced. Over the soil place half an inch thickness of coarse silver sand, as when the holes are made for the cuttings some of the sand is carried down to the bottom of the hole with the dibbler. Water the soil with a fine-rose waterpot, when all will be ready for the cuttings. This preparation should be made before the cuttings are obtained, as no delay in inserting them must occur after they are severed from the parent plants.

According to my experience the best time to take the cuttings is during the early part of September, when the current season's growth will be partly ripened, sufficiently so to make callusing an easier matter than if the insertion of the cuttings be delayed until the following month. Where it is possible the cuttings should be pulled or slipped off, retaining a small portion of older wood, which is more suitable for forming roots than the parts only of the current year's growth. Particularly does this apply to Conifers. The length of the cuttings must be determined by the plant under consideration, as, for instance, Retinospora plumosa may be 2 inches long, and Thuiopsis will need to be at least 4 inches long to obtain the necessary cut at the base containing a small portion of firm wood. Select the cuttings in the manner described, cut square across below a joint, trimming off the lower branches or feather as far as is required for the cutting to go into the soil. Fix them firmly at the bottom of the hole with the dibbler. Fill the holes again with sand and give a gentle watering to settle the soil about the cuttings. Unless the sun be very powerful after this time no more water will be required until the spring beyond a light sprinkling should the surface become dry, which will depend upon the state of the weather. For a time shade the cuttings during the hottest part of the day. Ventilation will not be required except a little now and then to evaporate moisture, which will otherwise cause the cuttings to suffer. During the winter protect the sides of the frame with manure or leaves to prevent the soil in the frame being frozen too hard, as this has the effect of loosening the soil about the cuttings when it thaws, and then roots are not so quickly formed. Double mats thrown over the frame in severe weather will be beneficial in this respect.

In the spring, when it is seen that new growth is being formed, air should be admitted freely to keep the plants stocky, as much depends on this for their future welfare in forming shapely bushes. A western aspect for the frame answers well, perhaps better than a southern position, for the reason that if some of the cuttings do not root so readily as others, the powerful sun sometimes experienced during April and May will dry them too much. As before stated, some kinds root more quickly than others, and are ready to be removed from the frame during the early part of the following June, and be planted either in their permanent quarters or be transferred to a nursery bed for a season. When removal from the frame takes place the advantage of a layer of manure or leaf soil will be seen in the manner the roots cling to it, rendering the process much easier and safer to the plants. The position for the plants the first year may either be on an east or west border, or any open space may be selected, planting either in nursery beds or in rows 9 inches apart, adding to each a portion of leaf soil if the natural soil be of a heavy nature, otherwise the addition of leaf soil will not be necessary. Should the summer be hot a mulching of partly decayed leaves between the rows will be of great advantage in keeping the roots cool and moist. I purpose naming those kinds which root the most readily and need to be planted the first June after the cuttings were taken, as such sorts may go in at one time, thus simplifying the matter of planting and frame room later on. The others, which require more time to make roots, should remain in the cutting bed for a year, when they could safely be planted out the following April. During the summer and autumn take the lights off when it is seen that all that are going to thrive have formed roots, as some varieties after taking six months to callus require a still longer period after that to make roots freely. The advantage of using two frames instead of one is now obvious.

First list for early planting.—Retinospora plumosa, Cryptomeria elegans, Thuiopsis borealis, Thuia Lobbi, Cupressus erecta viridis, Golden Yews, Thuia occidentalis, Escallonias macrantha, Veronica Andersoni, Laurustinus, Fabiana imbricata, Garrya elliptica, Buddlea globosa, Cotoneaster Simmondsi, Kerria japonica, Lonicera reticulata aurea, Ampelopsis Veitchi, and A. hederacea.

Those which require a longer time to form roots.—Wellingtonia gigantea, Cupressus macrocarpa, C. gracilis, C. Lawsoniana, Thuia Wareana, Retinospora plumosa aurea, Euonymus japonica aurea variegata, Lonicera fragrantissima, Ceanothus azureus, Jasminum nudiflorum, Pyracantha, and Myrtles.

Aucuba japonica is one of the most useful evergreen shrubs we have. It is best propagated in this manner. At the end of September take the cuttings, 4 inches long ; moderately strong side shoots are best, retaining a small heel. Insert them firmly in sandy soil about eight or ten in a 7-inch pot. Water gently to settle the soil firm about the cuttings. Plunge the pots in ashes in a cold frame. Little air will be required in the winter during the time they are callusing. About the middle of March plunge the pots in a gentle bottom heat, where roots will quickly form, when the plants should be hardened and planted out the following early part of June along with the rest, where they should stay the first year, and will then be ready for their permanent quarters.

The best of Laurels are the Caucasian, rotundifolius, common, colchicus, and the Portugal Laurel. The second named is the best for banks where a dense low growth is required or for forming hedges, being short-jointed and of a free habit of growth. If manure be added to the soil at planting time the colour of the leaves is much improved, as in poor soils they have a tendency to remain pale green, which deteriorates somewhat from its appearance, in the winter especially. Behind a north wall is the best position to root Laurels. Early in October the cuttings about 6 inches long should be slipped off, preferring medium sized shoots to large sappy growths. Chop out a trench with a spade about 3 inches deep, placing a layer of sand at the bottom, the cuttings being inserted about 4 inches apart. Fill in the soil, treading it firmly about the cuttings, digging the ground as the work proceeds, when the next row should be 10 inches from the first. The chief point is to thoroughly secure the cuttings in the soil, as if they are let loose roots cannot form. Previous to sharp frosts being expected it is wise to mulch between the rows with partly decayed leaves, as this prevents the ground becoming frozen hard, which when a thaw sets in renders the cuttings quite loose in the ground. After frost tread the soil about the cuttings firmly. For one season let the plants remain in their present position, when they may be transplanted, allowing more space to each. Irish Ivy, the best of all the Ivies for general use, may be propagated precisely in the same manner as Laurels, with the single exception that the cuttings may be cut into lengths of 8 inches, selecting the current year's growth and without the heel as advised for the Laurels.—S.

HARMFUL AND HARMLESS GARDEN MOTHS—5.

ENTOMOLOGICAL books tell us to seek the ghost moth, if we wish to see or catch it, about neglected churchyards, waste spaces, or railway banks, but Hepialus Humuli is not restricted to these, and, like other swift moths, occasionally visits gardens. We might expect to come upon it in any garden near Hop grounds, the species taking one Latin name from that plant. But though so styled, I have never been able to discover that the caterpillar does any noteworthy damage to the roots of Hops; though no doubt it occasionally feeds on them, nor do I find proof of other swifts being injurious to cultivated plants while they are in the larval state. Whether the ghost swift received its name because it haunts eerie spots, or from its white hue, is uncertain, but the mode of flight of the males is really curious to watch. One of them will seem to have chosen a spot, above which he vibrates like a pendulum, darting off now and then to a little distance, but returning. The female insects seldom fly till they deposit their eggs, which are dropped at random amongst the herbage. July is the month to look out for these insect ghosts. The females are yellowish brown, or a dull brown, with some red markings. When we unearth one of the caterpillars of H. Humuli, we discover it has a greyish white body, the head being brown, shielded by a horny plate. They are active, running backwards or forwards along the burrows, and live about twenty months, becoming chrysalids in April. A very singular variety in colour of this moth has been observed among the Shetland Islands; some of the specimens are also much larger than the southerners. Though called a swift, it is not so rapid as are others of the tribe.

About this time a gardener may chance to notice a freshly tarred paling decorated with numerous specimens of the common swift, Hepialus lupulinus. (It has, however, no special right to this Latin name, since the caterpillar feeds on almost any root that is handy, but seems to prefer those of a Lamium or Sonchus). I used to think these swifts got stuck upon palings owing to their heedless flight. I conclude now that most of them are attracted by the smell of the tar. It is much smaller than the ghost, brownish in hue, having a few whitish patches. Though abundant in our island it is local abroad. Less in size, the caterpillar resembles that of the ghost moth, and, like that, lives through two winters.

Attracted by the lights of a house, the beautiful or wood swift (H. sylvinus) may be seen fluttering about a garden on an August evening. It is one of the larger species, with wings of orange-brown, varied by white and dark brown tints. The caterpillar feeds on the roots of Dandelion or one of the Sorrels. One more swift may be mentioned, the golden species, H. hectus, which, soon after sunset begins a rapid, sportive flight, reminding us rather of a butterfly's movements. Mr. Barrett, when collecting a series for a local museum, discovered that the males exhale an agreeable odour, which is like that of ripe Pine Apple. It is the smallest British swift. The caterpillars live on the roots or young shoots of the common fern or brake.

There is a pleasant Kentish village near the Thames where a line of houses, with large gardens in front, occupy the side of a slope, below which are extensive fields. Along these gardens, on a bright June day, fly briskly little parties of the six-spot burnet moth (Zygæna filipendula), looking beautiful in the sunshine, the fore wings being deep glossy green, the hind pair crimson, body and antennæ black. Their breeding place is the meadows below the hill, where the caterpillars feed upon Clovers and Trefoils; but the gardens attract the winged insect, either because the moths prefer the higher ground or they are drawn to them by the display on the flower beds. Others of the burnet tribe sometimes visit gardens, but all are simply ornamental species, doing no harm in the caterpillar state. Entomologists of the Georgian period used to capture in Kensington Gardens the green-and-gold forester moth, allied to the burnets, but it has vanished, probably it has gone from the London suburban districts. These pretty moths are not very active, and are occasionally seen about gardens of the south, reposing on some large flower, such as that of the Mullein. It is upon Sorrels the forester caterpillars chiefly feed.

A funny little moth, often abundant in July, was named by some old entomologist the short-cloaked, or Nola cucullatella. When the insect is at rest the folded wings form a sort of triangle, but the pale grey wings, streaked and spotted, are not very suggestive of a cloak or hood. You see one upon a leaf, the next moment it has vanished, having skipped to another leaf; in a short time it moves again, then at length it settles down quietly. Its caterpillar occurs upon Blackthorn in hedges, also it feeds on the leaves of Plums, but it is not seriously harmful.

We have some British moths called the footmen. This odd appellation may have been given to them because of the habit the insects have of tumbling to your feet if alarmed, folding their wings as they drop, and keeping still for some minutes. They secrete themselves sometimes in garden shrubs, perhaps to escape their bird enemies, but most of them, while caterpillars, live upon tree lichens. Not uncommon, even in London gardens, is the familiar smoky tinted and yellow species, Lithosia lurideola, occurring from June to August. Its caterpillar eats the leaves of Clematis and other plants; it is black and hairy. Another that has been seen amongst gardens is the larger, four-spotted footman, L. quadra. The grey, red-spotted caterpillar eats lichens on forest and fruit trees during spring.

Every gardener has made the acquaintance of some one or other of the tiger moths. The tribe is one that is both conspicuous and abundant. Several species, indeed, rank upon the list of our enemies, but it may be that they have a worse character than they merit. The name sounds formidable, yet they are amongst the meekest of moths, and their tigrine peculiarity is only shown by the spots which adorn the wings of most. This is notable, however, that the loose hairs of some of the caterpillars, or else an exudation from the body (for the point seems still to be somewhat doubtful), have an irritating effect upon the skin of sensitive persons. Even a contact with the cocoon of the great tiger moth will suffice to leave unpleasant results for hours. We may take this, the Arctic caja, as a good representative of them. Though the moth is not so frequently seen as the caterpillar, yet its colouring of black, brown, scarlet, and white is conspicuous, but it flies little, even at night, preferring to crawl about in the herbage. Some say the female deposits 600 or 700 eggs; if so, the species would increase its numbers, were there not some check. It has parasitic enemies, and as the caterpillars hybernate, probably a part of each brood is liable to die off in our ordinary winters, even though they have a hairy garb. "Bear" is a name applied to this, and to some of its relatives, in several countries. Their coating does, no doubt, protect them from most insect-eating birds.

During the autumn tiger caterpillars are little noticed, either in the country or gardens. About April they are fully active, and when touched roll into a ball, outside of which we see only the grey and brown hairs covering the body. They feed upon various garden plants, but seem specially partial to Lettuces and Strawberries. All of us have observed a much smaller species of this family, called the white ermine (Arctia menthastri) which flutters about on June evenings, dropping its pearly eggs without exercising any apparent choice of plant, and, as the caterpillars are apt to rove, they can change their food when they like. They are both brown skinned and brown haired, having a pale line down the back. Tall Sunflowers and Hollyhocks are acceptable to them; Pelargoniums and Carnations, of lower growth, are also visited, but they do not seem to be partial to the Chrysanthemum. Then there is the buff ermine, A. lubricipeda, which, as a moth, resembles the preceding in markings, the ground colour being a dull yellow. It is a sluggish insect, but the caterpillar can be brisk; indeed, from its speed in rushing out of danger it got the Latin name, meaning "slippery-footed." Usually it feeds upon wayside weeds, and occurs very often upon Docks.—ENTOMOLOGIST.

EPILOBIUM OBCORDATUM.

THE dwarf-growing Epilobiums, many of which are suitable for growing on rockeries, are not so well known in gardens as some of the taller species and varieties. Amongst the former E. obcordatum (fig. 14) may be mentioned, for although by no means a new plant, it is worthy of extended cultivation. It is a native of the Rocky Mountains, where it is found at over 1000 feet above sea level. It is perfectly hardy in our gardens, flowering incessantly from June until the present time. Dry sunny slopes are the places to be chosen on which to plant it. It soon covers the place allotted to it. The flowers vary from three to five on each stem, over an inch in diameter, and of a lovely dark rose colour. It is easily injured by damp during the winter season, and should be protected by a "cloche" or piece of glass raised above the plant, so as to allow free access of air. A difficulty is often experienced in propagating it, but in heat it roots readily at this season, when the cuttings have been thoroughly ripened.

CULTURE OF HERBACEOUS CALCEOLARIAS.

CULTIVATORS of herbaceous Calceolarias find the mouth of July the best time to sow the seed. A portion is usually sown about the beginning or middle of the month, and a late sowing at the end. This gives a succession of plants, varying in size, the later plants prolonging the season of flowering.

Calceolaria seed is very fine, requiring considerable care in transferring it from the packet to the seed pot or pan prepared. Wide seed pans are the best receptacles. They should be perfectly clean and dry. Crock them carefully with three layers of potsherds, the largest at the bottom, smaller over them, lastly a sprinkling of fine, those with the dry dust riddled out being suitable. On this drainage place a thin layer of damp moss. The pans are then ready for the soil, which should be of a light, fine character, a mixture of leaf soil, a little fresh fibrous loam and old potting soil, with a free admixture of sand, answering well. Use the compost in a slightly moist state, making it firm, fine, and level on the surface. Give a gentle watering through a fine rose, allowing drainage to take place before sowing the seed. If the pan is allowed to drain half an hour this will effect the purpose.

Sprinkle a little fine sand on the surface in order that a regular distribution of the seed may be carried out. Avoid sowing too thickly. Another fine sprinkling over the seeds will suffice to cover them. Place a square of glass over the pan, and darken it with moss or paper. No heat other than that obtained in a closed frame is necessary for insuring germination. This will take place in about ten days, no water being applied to the soil in the meantime. The covering of glass with moss or paper prevents evaporation.

As soon, however, as the seedlings appear the shading material must be removed, all the light possible then being given other than hot sunshine, from which the seedlings must be screened. Afford air by tilting the glass, which in a short time may be dispensed with. Stand the pan on a pot close to the glass of the frame. With a free circulation of air, avoiding draughts, the seedlings soon strengthen. When they have attained to a size showing the second leaf, prick them 2 inches apart into pans or boxes The compost for them may be similar as for sowing the seed. Return to the frame, lightly syringing the seedlings daily in preference to heavier watering until they are well established.

When the plants begin to touch each other they will be ready for potting into small sized pots, using compost containing a little extra leaf soil Shading from hot sunshine must be continued. The next shift may be into 4½-inch pots, adding to the compost a little decomposed and well pulverised cow manure. Pot more firmly each time. Drain the pots effectively. Subsequent shifts should take place as the pots become filled with roots.

From the time the plants are transferred to pots, a moist base for these to stand upon must be provided, but it ought not to be far from the glass. The cooler Calceolarias can be grown the better, because a cool temperature insures a moist atmosphere, which is the most conducive to healthy growth. A constant supply of air is essential, but it must not be admitted in the form of sharp cutting draughts at any stage. During the cool nights of early autumn, when the air is calm and the dews heavy, Calceolarias are much benefited by the night exposure. Heavy rains are not beneficial, as they saturate the soil, preventing free root action. In the daytime place the lights over the plants again.

An excellent base for the plants to stand upon is coal ashes, inasmuch as it holds moisture and largely excludes worms. Watering must be conducted carefully, supplying just enough as the plants require it individually. Ascertain by examination of the surface soil or the ring of the pots when it is required. Then give a fair supply, waiting until the pots again ring when rapped sharply before supplying more. Lightly syringing the foliage is helpful to growth, and prevents green fly obtaining a foothold. Use the coldest water possible both for watering and syringing.

Should green fly appear, even to a small extent, vaporising with nicotine or fumigating with tobacco paper ought to be resorted to for destroying the pests. With good treatment on the lines indicated during the early stages and in the autumn months the foliage usually remains perfectly clean. Poor root action, checks to growth from dryness and overwatering, together with an arid atmosphere, are the chief causes of green fly invasion. Preventing the pests attacking the plants severely ought to be the rule. In the winter time Calceolarias are moved from frames to greenhouses in order that they may be safe from hard frosts. They will endure, better than any succulent, soft-leaved plants, a few degrees without

FIG. 14.—EPILOBIUM OBCORDATUM.

injury. It is on their removal to these positions that aphides are liable to appear and increase, especially if the structure be dry and not so cool as it ought to be.

Frame treatment continued throughout the winter is better than transferring the plants to dry shelves in houses. If in frames the plants need not to be so close to the glass as in summer and autumn. Rather deep frames are best. Material may be packed round the sides to ward off frost, and over the top in the severest weather. Dry leaves or strawy manure are useful as protection. The two dullest months of the winter may be passed without affording any shift, but in February and March those intended to attain to a larger size should receive more root room. A substantial compost formed of fibrous loam, leaf soil, and cow manure, with sand and a little charcoal, ought to be prepared.

In potting, the compost employed is best moist, but not wet. The ball of roots ought also to be thoroughly moist throughout. Make the new compost pressed round the old ball as firm as the latter. It is desirable to give liberal but not large shifts; 8-inch pots are suitable for the final shift.

When the pots in which the plants are to bloom are becoming full of roots weak applications of liquid manure will give an impetus to growth, and incite strong flower stems. Let the

liquid be clear, and not too frequently given at first ; once a week is ample.

As the flower stems advance tie them out regularly to neat light stakes. Still keep the plants cool, regularly supplied with fresh air according to the weather, duly watered as necessary, and dewed over daily, except when the conditions of temperature and atmosphere render any of these details undesirable.

Before the plants flower give them a vapourising to destroy possibly lurking aphides, which might increase and rapidly injure good and floriferous plants.—E. D. S.

PLUM TREE ENEMIES.

I HAVE received from "W. S." specimens of fungus-affected Plum trees for examination, also insects which attack the trees, and it will be convenient to refer to them separately.

Brown Rot.

Not so much seems to be known about this destructive fungus by scientists in this country as appears desirable, possibly because they have not often had materials for examination, and if a "mere gardener" who has examined many specimens can assist the learned in a small degree, he will be grateful ; while if he is wrong, he will be equally grateful by being set right on the subject.

The portions of stems received range from 6 to 9 inches in circumference. Both branches and roots are infested by the brown rot of stone fruits, as readily detected by the discolouration produced in the tissues by the mycelial hyphæ of the fungus (Monilia fructigena) which traverses the alburnous layer or young wood last formed outside the stem, branch, or twig next the inner bark, and thus destroys the cambial layer, causing the collapse of the affected trunk or limb. The mycelial hyphæ also attack the soft layers of wood, the branching mycelium passing through the hard parts in places, and the affected limb, when cut through, appears to have brown and whitish zones alternating, but not all round the stem, or only so in places.

On a growing branch the bark is found to be quite clear and white, but immediately beneath the cambial layer and young wood of last year are seen streaks of brown, and a longitudinal section shows the threads of the fungus. These proceed very slowly and horizontally of the tissues, hence the branch does not become quickly girdled ; indeed, the fungus may live in it for years, yet sooner or later the mycelium creeps round the alburnous tissues of the branch, when the part above dies for lack of nourishment. This usually occurs in the early part of summer, the leaves and fruit withering. When the fungus attacks a tender growth it soon dies, being quickly girdled beneath the bark by the mycelium. In bad cases it attacks the roots, and the trees die outright. The mycelium in this case does not penetrate the woody tissues, but merely the cambial layer or formative cells between the inner bark and outer wood. Thus the life is taken out of the tree, and the growths only push a little in the spring and then go off.

The fungus is most malignant on the Plum, and chiefly on the robust-growing trees. It is commonly referred to as dry canker, but there is no shrinking and destruction of the bark as in canker caused by Nectria ditissima var. prunaria, nor are there any outgrowths ("fruits" of the fungus) as occur under attacks of canker fungus sooner or later. The most left of brown rot fungus attack on wood are minute masses of felted mycelia, called sclerotia, and from these spring the conidial (one form) condition, by means of which the parasite is spread. Its commonest fructifying state is found on fruits, and this form I have not succeeded in transferring to firm wood ; but the germ-tubes of the spores readily pierce the soft growths of most stone fruits, and may kill them in a month to six weeks. Though the fungus attacks Apples and Pears, spoiling bushels of fruit in some seasons, it appears powerless to affect the wood of those trees. It, however, attacks the Apricot, Cherry, Nectarine, Peach, and Plum, these being its wood-"hosts," and in them it lives by its mycelial hyphæ as a perennial. It may lie dormant for a long time, but sooner or later it wakes up and quickly compasses the destruction of the limb or tree.

The parasite, as a wood infection, can only be got rid of by removing the affected part to sound wood below. This is readily detected by its clear colour—not being stained in the rings by dark brown, as the affected wood is more or less irregularly. When in the stem there is nothing for it but to uproot the affected tree, as the fungus will descend as well as ascend and destroy the roots. Shrinking follows the destruction of any part, but it should be remembered that the mycelium is ahead of this, therefore cut well below it so as to get the parasite clean out.

When the attack is only on one side of the stem it may be possible to cut the mycelium out by making an incision well into the sound parts all round the shrunken patch ; but this is very doubtful in effect, as the mycelium, unlike that of canker, is not confined to the cortical and immediately underlying tissues, but strikes deep into the older layers of wood, and acts in a vertical more than horizontal direction. In such case wash the wound with a paint formed of Stockholm tar and paraffin oil, only using sufficient of the latter to form an ordinary paint consistency, applying with a brush. Allow it to act for a short time, and then dress the wound with a composition formed of clay, dried and pounded, and then formed into putty consistence with soluble petroleum, making level with the bark. This is useful against canker, of which there is a scar on one of the stems ; but that has not killed it, for the tree was getting the better of the canker, as seen by the new bark that had formed around the circumference of the wound, and there was neither mycelium nor any fruits.

In addition to clearing away the affected parts and the dead trees, burning them, we should apply a dressing of basic slag phosphate, 10 cwt. per acre, 7 lbs. per rod, as soon as all the leaves are down, and 2½ cwt. of kainit per acre, 1¾ lb. per rod, along with it or separately, and point in lightly. Early in spring apply 2½ cwt. of mineral superphosphate, 37 per cent. soluble phosphate per acre, 1¾ lb. per rod. This has been found useful, and if a heavy crop of fruit set, promptly supply 2½ cwt. per acre, 1¾ lb. per rod, of nitrate of soda, preferably at twice, the first time as soon as the fruit has set, and the second when about a quarter grown.

Against brown rot generally spray with Bordeaux mixture, at a strength of 4 lbs. of copper sulphate, and 4 lbs. of lime to 50 gallons of water, just before the trees come into blossom, again as soon as the fruit is well formed, repeating twice at intervals of about a fortnight. This is to protect the fruit, but the fungus rarely attacks the fruit of the Plum seriously in this country. Once spraying with sulphate of copper, 1 lb. to 25 gallons of water, in the spring before the buds commence swelling, appears all that is necessary in this country to keep the fungus from the wood, where it is most malignant in stone fruit trees in our climate. Of course the spraying will not cure the trees already infested.

The Plum Tree Borer Beetle (Xyleborus dispar).

There is no doubt about the identity of the "insects" sent. They cause injury by driving their tunnels in the wood immediately beneath the bark, and their attacks are a consequence of the unhealthy condition of the trees, the stems having become dried to a great extent, and thus admitting of the penetrations of the pests. They never attack quite healthy trees, as the sap drowns them out as well as their larvæ, but trees not vigorous soon succumb to their attacks, as what they do not effect in girdling the stem one year they finish off the next.

The best preventive of attack is to dress or wash the stems with a solution of soluble petroleum about the beginning of June—in forward seasons earlier—and repeat occasionally up to about the middle of July, then again at the end of August and beginning of September ; but there are not often two broods in this country. Once the pest gets hold it is difficult to clear away from old plantations. It will content itself for a time on old limbs, but if anything happens to render the trees unhealthy they are soon taken possession of, and may be ruined.

To clear the vermin out cut down any trees that are not wanted, divide them into lengths of about 2 or 3 feet, lay them on damp soil or set in the soil, doing this in the spring, and leave until the beginning of September, then clear away and burn. If there are any beetles about they will find these baits, and are easily got rid of. We have not found any plan equal to this, but of course the cause never ought to arise, as the beetles cannot make anything of trees full of sap and vigour. This I have proved by various experiments extending over many years.—G. Abbey.

ROYAL HORTICULTURAL SOCIETY.

Drill Hall.—July 27th.

The exhibits at the Drill Hall on Tuesday were very bright, though not particularly numerous. The finest exhibits were those of Messrs. H. J. Jones and J. Veitch & Sons, who exhibited a group of plants and a collection of Gooseberries respectively. Orchids were by no means numerous.

Fruit Committee.—Present : Phillip Crowley, Esq. (in the chair) ; with Messrs. J. Cheal, A. F. Barron, T. J. Saltmarsh, J. H. Veitch, G. W. Cummins, A. Dean, W. Bates, W. Farr, G. H. Sage, G. Wythes, J. Smith, F. Q. Lane, W. J. Empson, R. Fife, and J. Willard.

At the last Drill Hall meeting Messrs. J. Veitch & Sons, Ltd., Chelsea, sent trained Gooseberry plants. On this occasion no plants were in evidence, but instead a superb collection of fruit comprising one hundred varieties. The specimens were in splendid condition and made a most interesting display. Amongst the varieties were noticed Whinham's Industry, London City, Surprise, Rockwood, Admiral Boxer, Progress, Telegraph, Ironmonger, Duke of Sutherland, Yellowsmith, Leader, Conquering Hero, Champagne, Railway, Safety, Tiger, Traveller, Gipsy Queen, Rough Red, Bobby, Pretty Boy, Criterion, Leviathan, Crown Bob, Random, Drill, Beauty, High Sheriff, Broom Girl, Lancashire Lad, Whitesmith, Keepsake, Candidate, Golden Drop, Lord Scarbrough, Glory, and Trumpeter. The same firm also sent Morello Cherries, Currants La Constante, Haughton Castle, Red Dutch, La Versaillaise, Warner's Grape, White Dutch and White Transparent, with a dish of Figs Negro Largo, and Nectarines Précoce de Croncels and Early Rivers (silver-gilt Knightian medal).

Mr. G. Wythes, gardener to Earl Percy, Syon House, Brentford, sent French Beans, Veitch's Early Favourite and Wythes' Early Mohawk. The plants were staged to show their earliness and cropping qualities when grown in the open air. The seeds of the first named were sown on May 3rd, and pods were ready on June 15th, and the latter were sown on May 21st, and ready on July 10th. Both varieties have been honoured by the Society, and are excellent. Messrs. Kelway and Son, Langport, sent a dish of Duke of Albany Pea and Bunyard's Exhibition Longpod Bean, each in capital condition.

Melon Hardwicke Beauty was staged by Mr. J. Taylor, Hardwicke Grange, Shrewsbury, and specimens of the Wineberry came from Mr. Cundey, The Warren House, Cobham, Surrey. Mr. J. McAinsh, The Gardens, Leeds Castle, Maidstone, send six splendid fruits of Sea Eagle Peach, and Messrs. W. J. Stokes & Sons, Trowbridge, pods of a Pea

named Hero of Trowbridge. Messrs. J. Carter & Co., High Holborn, exhibited a collection of about eighteen varieties of Turnips, including Cardinal, Red Top Stone, Golden Ball, Early Munich, Jersey Lily, White Model, and others.

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair); with Messrs. W. Atlee Burpee, H. B. May, R. Dean, G. Gordon, G. Stevens, T. W. Sanders, J. Hudson, J. F. McLeod, W. Bain, J. Fraser, C. E. Shea, J. Walker, C. E. Pearson, H. J. Jones, J. D. Pawle, G. Paul, D. B. Crane, E. Mawley, J. Fraser, and H. S. Leonard.

Mr. H. J. Jones, Ryecroft Nurseries, Hither Green, Lewisham, arranged down the centre of the Hall a long undulating group, which produced a unique and beautiful effect. This is the first time we have seen plants arranged in this style at the Drill Hall, but it will be a matter for regret if, when space permits, the plan is not followed up. Both plants and arrangement must be good, or the effect will be very bad instead of very good. Mr. Jones' group comprised excellently grown specimens of double and single Begonias, Lilium speciosum, with Caladiums, Palms, and Ferns, all placed in an artistic manner (gold medal).

Mr. W. Bain, gardener to Sir Trevor Lawrence, Bart., Burford Lodge, sent examples of Gladiolus Lemoinei, some splendid spikes of Pentstemons, Crinums Powelli, and Powelli alba, with three varieties of Phloxes. Messrs. Paul & Son, Old Nurseries, Cheshunt, staged Roses, Coreopsis, Phloxes, Spiræa kamtschatica, and other hardy flowers (silver Banksian medal). From Messrs. Barr & Sons, Covent Garden, came the customary display of such hardy flowers as Pentstemons, Phloxes, Delphiniums, Campanulas, and Liliums (silver Banksian medal).

Blooms of double Begonias were exhibited by Mr. Baylor Hartland, Cork. Several varieties of good quality were included in the stand (silver Flora medal). From Mr. H. B. May, Upper Edmonton, came a splendid collection of Pterises, comprising many varieties (silver-gilt Flora medal). Messrs. F. Sander & Co. staged Watsonia Ardernei, Dipladenia atro-purpurea, Exacum macranthum, and Lilium philippiense. A small collection of Dahlias was arranged by Messrs. J. Cheal and Sons, Crawley, including single, Pompon, and Cactus varieties in good variety.

Messrs. J. Veitch & Sons, Ltd., staged an interesting collection of flowering shrubs, including Eucryphia pinnatifolia, Hibiscus Single Painted Lady, H. cœlestis, H. totus albus, Pavia macrostachya, Spiræa Anthony Waterer. The same firm also staged a box of Nymphæas of the choicer varieties, with flowers of the Rhododendron javanico-jasminiflorum hybrids (silver Banksian medal). Roses were staged by Messrs. W. Paul & Son, Waltham Cross, such varieties as Empress Alexandra of Russia, Sylph, and Enchantress being conspicuous. A few herbaceous Phloxes, also came from this source (bronze Banksian medal).

Messrs. Kelway & Sons, Langport, staged a magnificent collection of Gladiolus, including many varieties of the best quality. The flowers were large and the colours clear. Gaillardias also came from Langport (silver Flora medal). The Surrey Seed Co., Red Hill, sent Carnation Mrs. Moore Binns, a yellow scentless variety.

ORCHID COMMITTEE.—Present: H. J. Veitch, Esq. (in the chair); with Messrs. J. O'Brien, De B. Crawshay, H. M. Pollett, H. Ballantine, F. W. Moore, F. J. Thorne, W. H. Young, H. J. Chapman, E. Ashworth, E. Hill, W. Cobb, and S. Courtauld.

Some beautiful blooms of Cattleyas were staged by E. Ashworth, Esq., Harefield Hall. There were several distinct forms, and a silver Flora medal was awarded. Mr. F. J. Thorne, The Gardens, Sunningdale Park, staged splendidly grown plants of Odontoglossum Schlieperianum, O. S. aureum, and O. aspidorhinum. Messrs. F. Sander & Co. sent a few Orchids, as did Messrs. J. Veitch & Sons, Ltd.; but, as has been noted, Orchids were staged in very small numbers

CERTIFICATES AND AWARDS OF MERIT.

Canna Miss Elsie Parkins (Paul & Son).—This is a handsome yellow coloured variety (award of merit).

Croton Shuttleworthi (J. Bugg).—This is a very handsome seedling. The long pendent leaves are narrow and slightly twisted. The colour is cream and green, with a rose midrib (award of merit).

Epilælia radico-purpurata (J. Veitch & Sons, Ltd.).—This is a charming bigeneric hybrid, resulting from a cross between Epidendrum radicans and Lælia purpurata. The sepals and petals are rosy buff. The broad flat lip has a yellow centre, surrounded by purplish crimson, paling to the colour of the other organs. Needless to say it is perfectly distinct (first-class certificate).

"*Geranium*" *Anna Bateson* (J. Davidson).—A dwarf-growing Zonal, with compact trusses of bright rose-hued flowers (award of merit).

Gladiolus Carlton (Kelway & Son).—A rich rose-purple flower of much beauty (award of merit)

Gladiolus J. G. Clarke (Kelway & Son).—Soft rosy purple is the colour of this variety (award of merit).

Gladiolus White Lady (Paul & Son).—A beautiful pure white variety (award of merit).

Gladiolus General Duchesne (W. Bain).—A magnificent variety. The colour is crimson suffused with blue. The throat is cream (award of merit).

Godetia gloriosa (Dobbie & Co.).—A superb rich deep crimson variety that is extraordinarily floriferous (award of merit).

Heliopsis Pitcheriana (Paul & Son).—A beautiful form. The flowers are very rich yellow (award of merit).

Hibiscus cælestis (J. Veitch & Sons).—This is a charming plant. The large single flowers are pale porcelain blue (award of merit).

Hibiscus Single Painted Lady (J. Veitch & Sons).—The colour of this is very delicate blush with a crimson centre (award of merit).

Nectarine Precoce de Croncels (J. Veitch & Sons).—An early variety with medium sized fruits. The flavour is rich and the flesh very juicy (award of merit).

Phlox Lord Raleigh (Paul & Son).—A fine variety with bluish purple flowers (award of merit).

Rosa rugosa atropurpurea (Paul & Son).—A very rich crimson variety of great beauty (award of merit).

Rose G. Nabonnand (W. Paul & Son).—A lovely variety with delicate salmon hued flowers (award of merit).

Veronica Le Seduisante (J. Veitch & Sons).—A handsome Veronica. It is very free in the production of its Royal purple spikes of flowers (award of merit).

CACTACEOUS PLANTS.

The silver Flora medal awarded for the best collection of these plants went to Mr. W. Bodkin, West Hill Place, Highgate, whose exhibit was diversified and interesting. Mrs. Chilton, Wealdstone, Middlesex, took the bronze Flora medal, and Mrs. A. Blogg, Croydon, the silver Banksian medal.

Mr. Bodkin was also successful in securing the premier award for twelve plants, followed by Mrs. Chilton and Mr. W. F. Gould, Bath. For six plants the prizewinners were Mr. W. F. Gould and Mrs. Carter, Tooting.

Messrs. H. Cannell & Sons, Swanley, arranged a fine collection, not for competition. The plants were splendidly grown and very interesting (silver Flora medal).

FUMIGATING WITH TOBACCO.

IN no particular is a display of patience and tact more requisite than in doing battle with the various pests which to many are a source of trouble and anxiety, but which the man who possesses tact takes as a matter of course, for he knows, how, when, and where to meet them. The appearance of green fly, thrips, scale, mealy bug, or red spider, on his plants, if they do appear, gives him no anxiety, for he applies the remedy or remedies, and it is done with; but then comes the question, What are the remedies? Gardeners differ in performing some of the most simple operations for destroying green fly, and with amateurs mishaps occur through misunderstanding or misapplying the remedies, which are set down as ineffectual, and are, with those who recommend them and the vendors, mentally consigned to the rubbish heap, if a more unpleasant situation does not happen to be before the mental vision of the disappointed experimentalist.

In the process of fumigating with tobacco or tobacco paper—for, in my opinion, both are equally safe and effective—I could never perceive the necessity of being in the smoke myself, or of seeing others inside the house with it, for apart from the fact of the operator being almost suffocated, the door has to be opened as, half-choked, he leaves probably before the work is complete. There is another objection—the smoke hangs about a person's dress, while the smell does not improve by age, and lasts for several days. To be inside the house during the operation is by no means necessary, as I have always found.

The various ways and means of fumigating which have come under my own immediate observation convince me that more depends upon the way in which the smoke is applied, and on adapting the quantity to the space to be fumigated, than on the material itself. I have used different sorts of tobacco and also tobacco paper, and find that nothing better could be wished; yet one is no better than the other. If I have found the leaves of plants marked or the insects not killed, I blame myself, and not the material, for that is entirely blameless. In the first place it is always best—at least, I have found it so—to fumigate towards night, when the house is shut up and there is no fear of the sun shining on it, and then, as it has been often recommended, it is better to smoke two nights in succession than to depend on one fumigation, especially when it is for thrips, because it takes a strong dose to kill these all at once, and the quantity of smoke necessary to do so may injure the plants; but when the insects have had a weaker dose it makes them sick, and before they have recovered a similar dose the following night settles them.

It is, then, worth while to take the measure of the enclosed space, and find out, if possible, the exact quantity of tobacco or paper that will give the required quantity of smoke. This is advisable, both on the score of economy and to save time and trouble in doing the work effectually. There is more tobacco wasted through doing the work ineffectually than many would believe. I have been surprised myself when told that 7 or 8 lbs. of tobacco had been used, or rather misused, for smoking two small houses within three weeks, and this in cases where the operators were supposed to understand the matter. I have found half a pound of tobacco, or the same weight of paper, quite sufficient for a house 30 feet long by 16 wide and 9 feet in height; and this made into two fumigations, with, perhaps, a trifle the most at the last performance. A pit or frame will require much less, for it must be remembered that the height makes a great difference in the quantity of material requisite, for the farther the plants are from the roof the denser the smoke should be. In a pit the plants are generally within a few inches of the glass, and it is in such structures that plants are generally injured from an over-strong application of smoke. It is, therefore, advisable to use but a very small quantity of tobacco in smoking pits and frames, and to increase the quantity if the dose is found ineffectual.

In applying the smoke, the plan I generally prefer is to take a common flower pot—a 6-inch is very convenient—and place it on a larger one that stands on the ground inverted, so that the apertures of both are

clear for the draught of air. Put in the upper one a few pieces of charcoal ignited, and when they are thoroughly alight tear up some brown paper and put in, and then put on the tobacco or tobacco paper, which will consume gradually and give out a good smoke. Another plan I have generally adopted with regard to small houses or frames, is to take some coarse brown paper, steep it in a solution of saltpetre, dry it, then spread out the tobacco on pieces 6 inches or a foot square, roll both together, and tie with twine or matting. Then suspend by one end and light the other ; let two or three of these be lighted according to the size of the house or pit, and let them smoulder. If properly done, this will be found as clean and effectual a method of fumigating as need be.—C.

ABUTILON CULTURE.

THESE plants are very showy, free growing, and easily cultivated. They are alike useful for ornament in the greenhouse and conservatory, for affording flowers for cutting, and for forming beds in the outside garden. The taller varieties are seen to great advantage trained to wires under roof rafters, not having the wires further from the glass than a foot, whilst as pillar plants they are effective, their drooping bell-shaped flowers in either case being seen to singular advantage. Whether as roof or pillar plants they are best allowed to grow rather loosely, so that the side branches may droop, and when they are becoming too numerous they may be thinned, a convenient method being to cut the flowered sprays back to a few joints from their origin, which serves the purpose of keeping the plants well home as well as affording a succession or continuance of bloom, the sprays loosely arranged in large vases having a very fine effect. Crowding, however, must be avoided, timely thinning and regulation of growth being practised in due course and with discretion, avoiding stiffness or formality as prejudicial alike to freedom of bloom and effect.

As roof or pillar plants Abutilons are perhaps best planted out. They succeed, however, very well in pots, which must be proportionate in size to the plant required. They give much less trouble in watering when planted out than if grown in pots. In the latter they require feeding with liquid manure to maintain them in good foliage, and even then they do not attain to the freedom of growth and fulness of bloom of those planted out. A border of 2 feet width and similar depth well drained, as abundance of water and food supplies is required when they are in free growth, with a compost of equal parts fibrous loam, leaf soil, and peat, with about a sixth of drift or crystal sand put in rather firmly, so as to induce a sturdy free-flowering habit, will grow these plants to perfection. Continually pouring on water is not watering but drowning, making the soil sodden and sour, to the destruction of the soft roots and small fibres, the plant becoming sickly and collapsing. Over-dryness on the other hand, if not so pernicious as over-watering, causes a check to growth, a loss very often of bloom, and always a loss of foliage, more or less detracting from the appearance of the plants. The right time to supply water is when the soil is becoming dry, and before it is so dry as to cause the foliage to become limp or flag afford a thorough supply, there being no fear of over-watering a plant when it is dry. There is danger, however, of giving a check that may bring down all or most of the flower buds if the watering is delayed too long, or water is applied at a much less temperature than that in which the plants are growing, or if over-strong manurial matter be given, which destroys the younger, softer, and more active roots or feeders. These are matters that may not often burden the careful cultivator, but they do occur nevertheless, though the cause of disaster is not often attributed to errors of culture.

Planted-out Abutilons will flower continuously if they have a temperature of 45° to 50° assured to them, the situation being light, and care being taken to keep up a succession of flowering wood ; but they are all the better for a rest in winter, the soil then being kept dry, but not so dry as to impair the vitality of the plants. If the wood shrivel it is too dry, which is not resting but starving plants to death. It is needless expecting such to break as strongly and make as vigorous growth as those that have been granted rational treatment. In February the plants may be cut back, each growth to a few joints of the old wood, and where extension is required firm well-ripened wood can be trained-in to fill it, merely cutting away the unripe points. Old worn-out wood may he displaced in a similar manner—*i.e.*, cutting out the old and laying-in the young wood. Plants that become bare at the base may be cut down, they breaking freely from the old wood. After pruning a gentle sprinkling over the foliage will encourage a speedy and regular break, and when fresh growth is made the plants, if in pots, may be repotted, picking away the soil at the sides and bottom of the ball, so as to reduce them about a third, which, if they are to be returned to the same size of pot, will admit some fresh soil at the base and sides, the roots being cut close back.

Those planted out should have the soil removed from amongst the roots, not disturbing the fibrous or main roots at the collar, and if in compartments the soil may be taken out at the sides, the roots cut back, and fresh soil added, in all cases making it moderately firm, for which it must be in a medium state as to moisture. Avoid soil that is very dry or very wet. Water carefully until the plants have made fresh roots, and indicate possession of the soil by pushing fresh growths freely, then water thoroughly as required, and feed with liquid manure or artificials, applied in a surface dressing of light lumpy decomposing material, such as old cow manure, which will attract the roots to the surface. The foliage and bloom will show the benefit in due course. The plants will come into flower in a few weeks, and continue through the summer and autumn, if not greater part of the winter, the house of course being kept as before stated at a minimum temperature of 45° to 50°.

Abutilons also form magnificent standards. The plants should be trained up with a single and straight stem to the height required, they appearing to great advantage when on 4 feet 6 inches to 6 feet stems for conservatory, whilst plants with 2 feet stems are charming for table decoration. Pots of 8 inches diameter will hold sufficiently large plants for table, but for the larger and taller plants 12-inch pots are little enough. The plants are allowed to grow somewhat taller than the intended height of the stem, so as to get solidified growth to where the heading is to take place, and then the heads are cut clean off, or laterals or side growths being rubbod off on the stem when quito young, leaving the leaves at their base, as they help in a measure to thicken the stem as it advances in height, relying on the uppermost two or three growths for the formation of the head. Stop those when they have two or three leaves, merely taking out the points of the shoots, and continue this as fresh growth is made until the plants have a dozen or more shoots, when they may be allowed to flower. This being effected hy midsummer, as it will if one-year old plants are selected, they being trained the previous year to form the stem desired, the plants will afford a fine display of bloom, and being seen on a level with the eye are very pleasing, and will keep flowering in a suitable temperature until winter. It is desirable to give them a few weeks' rest by keeping them drier and cooler, and from the middle of February to early March they may be pruned, cutting back to well ripened wood, the weak wood being cut away, and others may be left of such length as will form symmetrical heads, two or three joints of wood being ample to leave on plants that have well-furnished heads, or when a compact head is desired. The plants may be given a little extra warmth to start them into growth, damping occasionally, and when pushing fresh growths disrooting and repotting

Stopping may be resorted to when the growths are a few inches long, or if early flowers are wanted the plants may be allowed to flower at once ; if some are treated that way, whilst others are pinched, a succession of bloom will be secured. The pinched plants, however, form the finest specimens, shifting them into large pots immediately after they push a little growth after the last stopping, and when the roots have possession of the fresh soil feeding with liquid manure. Other plants treated similarly in a cool or ordinary greenhouse will afford a fine display by August, and during the late summer and autumn months. Neat bamhoo stakes to the stems will be necessary for the support of the heads.

The plants intended for table decoration must be well stopped, and must be kept in comparatively small pots and firm soil, well enriched with some fertiliser to induce a sturdy well-furnished floriferous habit. Young plants of the previous spring or autumn rooted stock are suitable for this purpose, and being duly stopped will form heads quite large enough by August. They should he grown in a low-roofed house or pit where they can be accorded plenty of light. When they become old and stunted they may be discarded for young plants, but the older plants are more floriferous than young, and in every way preferable for early flowering, as young plants cannot be had with a sufficiently furnished head before summer is well advanced.—A.

(To be concluded.)

NAPHTHALENE.

"THE Patentee" of paraffin-naphthalene emulsion must be congratulated on his commercial acumen with regard to that substance, for nothing more or less may be found in his critique on page 73. This being so, it is only necessary to allude to my having on former occasions referred to naphthalene in the *Journal of Horticulture* as, in soluble form, a very effective eelwormicide, fungicide, germicide, insecticide, and miticide, and also mentioning it as a substance out of which not one, but several, proprietary preparations might be made. Then the chemical formula of naphthalene passed unchallenged, and even the question of rendering naphthalene soluble, raised not so much as the ghost of "patent rights" in paraffin-naphthalene emulsion.

As to the "no personal" concern of your correspondent, there does not appear a word until my reference to a patent in respect of paraffin-naphthalene emulsion on page 48, and my definition of it as simply petroleum emulsion naphthalenised—the free trade soluble petroleum transformed into a protected article by the addition of one seventy-sixth of naphthalene. Then arises the shadow of my "imperfect quotations, muddled, and misrepresented instructions," to which I must take exceptions *in toto*, for if there has been any of those things, the definition of the substance paraffin-naphthalene emulsion must have been "incomplete." Besides, what does "imperfect specification" mean in the matter of a patent ?

I disclaim any intention of infringing "patent rights," for beyond rumour I did not know of their existence in paraffin-naphthalene emulsion, and had I been in possession of the facts as stated by "The Patentee" on page 73, my article on naphthalene (page 47) would have heen modified. Then the occasion would not have arisen for securing a free advertisement for a special article in which the "on-lookers," not the "bowlers," are mainly interested in having "free."

As for text-books on chemistry, I have only to say that not one to which I have access is even "a little out of date," but all are in exact agreement on every essential point. Hence, I do not mind being "completely insulated." Even the naphthalene-potassium of "The Patentee" stands clearly as $C_{10}H_8K_2$ in chemical text-books, but apparently "Patentee" lives not to "enlighten, stimulate and amuse."—G. ABBEY.

Notes & Gleanings

EVENTS OF THE WEEK.—Though the season of Roses is almost done horticulturists will still be busy amongst the several provincial shows, of which Southampton on Saturday and Monday, and Northampton on the latter day and Tuesday, are amongst the most important.

—— THE WEATHER IN LONDON.—Since our last issue went on to the machines rain has fallen heavily in the metropolis. On Wednesday, 21st, just as the pages were being finished a terrific storm was raging in the north of London. Almost daily since then there have been local thunderstorms with heavy rains, and these latter will do a considerable amount of good in suburban gardens.

—— BISHOPS STORTFORD SHOW.—One hundred and ninety-seven classes are particularised in the schedule of the show of the Bishops Stortford Horticultural Society, which is fixed for Wednesday, Aug. 11th. There do not appear to be any open classes, notwithstanding which fact the exhibition should be a good one. J. Barker, Esq., has kindly given permission to hold the show at The Grange. The Hon. Secretary is Mr. W. Smith, Bishops Stortford.

—— THE MANRESA VINE.—The famous Vine at Manresa House, Roehampton, the seven rods of which in the aggregate extend over a quarter of a mile, has this year ripened 1030 bunches of Grapes—good bunches, with fine berries of excellent quality, though, perhaps, not quite so well finished as when the crop was somewhat lighter. They have, all the same, been good enough for the Royal tables, large consignments having been sent to Windsor Castle to supplement the supplies of the Royal gardens during this season of abnormal demands and extraordinary consumption. No man in the kingdom will be prouder than Mr. M. Davis is—the planter of this remarkable Vine—"to serve the Queen" with Grapes.

—— BORDER CARNATION MRS. A. HARKETT.—This is a fine, admirably formed perfumed flower, colour rosy carmine, which the raiser, Mr. Harkett of the Rectory Gardens, Petersham, exhibited in bunch form at the recent village show. The variety is a robust grower, having grass of the character of the well-known Gloire de Nancy type. The flowers, though of good size, do not split the calyx, a remarkable characteristic almost in good sized Carnations now. I like the variety very much, and grown under the best conditions—for at Petersham the plants are simply border-grown—the flowers should rank amongst the very best of the colour. The hue is one of the most pleasing the Carnation gives.—A. D.

—— POTATO SCAB.—Potato scab was so prevalent in some parts last year that it was impossible to find in certain districts a sample of Potatoes entirely free from it. This disease greatly injures the appearance of the tuber, and entails much loss to the grower. Certain remedies were tried recently in Canada for the same disease. Three rows 66 feet long were planted with very scabby Early Rose Potatoes. The whole tubers in one plot were treated with a solution of corrosive chloride of mercury (corrosive sublimate), made by dissolving 2 ozs. of corrosive sublimate in 15 gallons of cold water; the Potatoes were allowed to stand in this liquid for two hours, drained, then cut into two-eye sets, and planted. Plot No. 2 was planted with Potatoes treated with a liquid composed of 1 lb. of bluestone (sulphate of copper), dissolved in three pails of water; the whole tubers were immersed for two hours in the liquid, then cut up and planted. Plot No. 3 was planted in the same manner with the untreated tubers. None of the "treated" Potatoes would have been considered scabby by the average purchaser. The bluestone treatment, however, was found to seriously injure the germination of the seed Potato, and only about 40 per cent. grew, and there was in consequence a small yield. Although the corrosive sublimate treatment did not completely eradicate the scab, the injury, says a contemporary, was very slight. The treatment with bluestone was nearly as effective in preventing scab as the corrosive sublimate; but the germination of the tubers was so badly injured that the crop was greatly reduced. Corrosive sublimate is a virulent poison when swallowed by man or beast, and great care should be used to prevent accidents; but no injury results from handling the fluid of the proper strength.

—— CYCLAMEN CULTURE.—"H. T. M., *Stoneleigh*," writes:—Please correct an error which appears in my article on page 70, as I am afraid it will mislead some of your readers. The paragraph I refer to reads thus: "When they show the second leaf is the right time to pot singly in thumb pots, keeping them on a light shelf in a *cool* temperature all winter." For cool read *warm* temperature. [The word "cool" was clearly written in the manuscript, and we did not feel justified in altering it.]

—— ISLE OF WIGHT.—The flower show in connection with the Royal Isle of Wight Agricultural Society was held at Ryde on Wednesday and Thursday, July 21st and 22nd. Both days, unfortunately, were showery. The number of entries fell below last year, but the exhibits were up to the average. The principal exhibitors were Messrs. Kent, Grist, Niblett, Brook, Goble, Wolfe, Price and Leak. Mr. Goble obtained for his excellent stand of Carnations the Isle of Wight Horticultural Improvement Association's Certificate for Cultural Merit.

—— NORTHAMPTONSHIRE HORTICULTURAL SOCIETY.—On Bank Holiday, August 2nd, and the following day the above Society will hold its sixteenth annual Show in Delapre Park, Northampton. As has been the custom in previous years an excellent schedule has been compiled, and the prizes offered in each division should bring together an admirable display of garden produce. There are open and restricted classes. In addition to the flowers, fruits, and vegetables there will be other interesting attractions. The Secretary is Mr. W. B. Troup, 5, Deangate, Northampton.

—— THE BEDDINGTON, CARSHALTON, AND WALLINGTON HORTICULTURAL SOCIETY.—The annual exhibition of this Society, probably the best of its kind in Surrey—the produce of allotments and cottage gardens—will be held on Bank Holiday, August 2nd, in Beddington Park, near Hackbridge Station, on the L.B. & S.C. Railway. A conference is to be held at five o'clock, at which it is announced that questions will be answered on any gardening subject, and advice given on any difficulties that may be experienced with flowers, fruit, or vegetables by Mr. J. Wright; while Mr. A. Dean will treat on the condition of cottage gardens and allotments, and make suggestions for future improvements.

—— TURNIP AND TAP-ROOTED BEETS.—I have specially noticed of late the general excellence of the Egyptian Turnip-rooted section this year. These roots figure prominently and well on exhibition tables in July. I cannot say so much for the tap-rooted varieties, for it is evident their time is not in July, and, indeed, hardly in August, except towards the end of that month. The pulling of these tap-rooted forms to exhibit in the summer leads to great waste, not only because the selected roots are too immature to be used, but so many others are pulled and rendered useless in the process of selection. Would it not be well that these tap-rooted forms be eliminated from schedules until later in August, as the Turnip-rooted forms are so much more in season at the present time?—OBSERVER.

—— SUTTON'S PEERLESS PEA.—Although I have had under my charge this season numerous very fine Peas, this variety is, I regret to find, not included. I met with it the other day under interesting circumstances—judging cottage gardens, and at Hook, Surrey, I was taken up a farm road to a couple of cottages occupied by cowmen employed on the farm. These men have to rise and commence work feeding and milking cows at 3 A.M., have a few hours for rest in the middle of the day, then resume work again about two o'clock, and keep on till late. It is a hard life, no doubt, but it is under such labour conditions as these that the men cultivate their cottage gardens. The soil, to make matters more difficult, is a very stiff stubborn clay, and when I recently saw it the surface was like half bricks, being baked into hard lumps. Yet the crops generally were, for such soil, excellent, and showed that any partial failures here and there were in no sense due to lack of labour or energy. It was in each of these gardens I found Sutton's Peerless Pea. The men had no doubt purchased some seed and shared them, for each one had a good row. The variety grows to 3 feet in height, is stout and sturdy, and a great cropper, carrying very fine, long, slightly curved pods, very handsome, and well filled. They quite took both myself and fellow Judges by surprise, and each made a note of the variety for next year's use. Although we had seen some good Peas before none equalled these fine pods of Peerless. It is very evidently a first-class addition to that desirable race—3-feet Marrow Peas, and should be universally grown. The peas are green, tender, and sugary.—A. D.

—— Red Oak. — The Wisconsin Red Oak has for several years taken high rank in furniture and finishing factories on account of its softness, adaptability to shop work, its lively colour, and figure. When plain-sawed it commands higher prices than any Oak, although quarter-sawed White Oak is more expensive. This Red Oak belt in Wisconsin is not wide, and at the rate the timber is being cut off it probably will not last more than five or six years. In the North-west part of the State, which is not yet opened up by railroads, there is a heavily timbered area which may contain much Red Oak, but it will soon be traversed by a railway from Duluth.

—— Foresight in Gardening.—One of the misfortunes of garden lovers is that they frequently plan to do more work than can be carried on successfully. Almost everyone who builds a house thinks he would like to have a nice garden, and the nice garden is consequently arranged. But when it is found, as it too often is found, that it requires a number of men, running up an expensive salary bill, to keep the place in good order, what was expected to be a pleasure becomes an annoyance and a bore. A small place well cared for and everything kept up nice and orderly gives far more satisfaction than an over-grown place that is a drag on the means of the proprietor. We know of a number of places, beautifully designed in the first instance, and which require some half-a-dozen hands to care for properly, dragging along with only one regularly employed, with perhaps an assistant, and even the money for this grudgingly bestowed. There is no comfort in seeking pleasure in this fashion. In all our operations we are too apt to think we can do more than we really can. In gardening matters it is especially so says Mr. Meehan, and he is right.

—— Violas as Town Plants.—These charming flowers are being more and more grown in the London parks, and it is impossible they could present the attractive appearance they have done throughout the season without them. One of the severest tests to which the plants have been subjected as flowers for towns is in a densely populated district in the East End of London—the Bethnal Green gardens of the County Council. It seems difficult to imagine closer and finer masses of colour than have been produced there throughout the season. The varieties which show to the greatest advantage are Yellow Boy, a glistening sheet of gold; Duchess of Sutherland, and William Niel, lilac mauve; Niphetos, one of the finest whites in cultivation for town gardens, and the small floriferous primrose yellow Grievei. The secret of success rests in well enriched soil, early planting, the prompt removal of fading flowers, and occasional copious supplies of water during periods of drought. The gardens, generally under the canopy of smoke, and Violas, perhaps, particularly are undoubtedly creditable to the manager, Mr. F. W. Wright, and such a bright and cheerful display would, under the circumstances, have been regarded as practically out of the question a few years ago. The neatness of the gardens, too, adds to their enjoyment by the crowds of visitors, who "live" in them so to say from morning to night. They are a boon to the denizens of the east.—A Northerner.

—— Root Tubercles.—Mr. W. R. Dodson, the botanist of the Louisiana Experiment Station, has been examining the tubercles on the roots of leguminous plants by means of which nitrogen is taken from the air and used as a food material for the plants. The experiment seems to indicate that each plant, or at most each genus of plants, will support only one kind of parasitic organism capable of developing root tubercles. For instance, a particular organism must be present in the soil if tubercles are formed on Alfalfa. The Cow Pea likewise has its peculiar parasite, and dozens of leguminous plants may be grown side by side and each develop its own specific tubercle. Nevertheless, several imported species have been grown and formed tubercles, although the plants were not found in this country and have never been grown in the soil, which seems to indicate that the organism must have been in the soil before the seeds were sown, as there could have been no inoculation from soil in which the plant had been previously grown. If this is true, the organisms are not dependent on any particular plant for their existence, although the plant may be dependent upon them for its fullest development. Their absence from some soils and presence in others cannot, therefore, be explained satisfactorily. While the tubercles have peculiarities of shape or appearance they do not present characteristics that enable one to distinguish them under the microscope, although there are probably as many varieties as there are species of leguminous plants. The fact is that much is to be learned on this important subject before farmers can inoculate their soils with the assurance of success with any given crop.—("Garden and Forest.")

—— Gardening Appointments.—Mr. John Bates, for the past twelve years head gardener at The Hayes, Stone, Staffordshire, has been appointed in a similar capacity to T. W. Twyford, Esq., Whitmore Hall, Newcastle-under-Lyme, Staffs, and enters on his duties on August 10th. Mr. J. W. Barnes, for six and a half years general foreman at Wroxham Hall, Norwich, has been appointed head gardener to Col. Keppel, Stratton Strawless Hall, Norwich. Mr. Jno. Turton, of Fulford, York, has been appointed gardener to A. T. Schreiber, Esq., Becca Hall, Barwick-in-Elmet, Leeds.

—— A Kew Hand-list.—Another hand-list of Kew plants has just reached us. This particular publication deals with tender monocotyledons, excluding Orchideæ. In the preface to the book it is said that "The scope of the contents of the hand-list, which are somewhat heterogenous, is dictated in great measure by convenience. It includes large groups of plants of great scientific interest which, for various reasons, are more attractive to ordinary cultivators than many which are comprised necessarily in a botanical collection. For this reason it is hoped that it may be found not less useful than its predecessors." Application for the book should be made direct to Kew; the price is ninepence.

—— Callicarpa purpurea. — Many very beautiful shrubs achieve a wide popularity, and then, for some reason that no one appreciates, there seems to be a lack of inquiry for them. In this list one may include the Callicarpa purpurea, which was introduced into America from Japan some fifty years ago. It reaches a height when fully grown of about 4 feet, and the numerous slender branches take a wand-like shape. In the early spring a cluster of rose-pink flowers appear in the axil of each leaf. These flowers are succeeded in the autumn by bright violet coloured fruit. This is probably the only plant that furnishes us with berries of this colour, and always attracts at once wherever grown.—("Meehan's Monthly.")

—— Sheffield Chrysanthemum Society.—The schedule of the exhibition that is to be held in the Corn Exchange, Sheffield, on November 12th and 13th, has recently come to hand. For many years now the Society has held excellent shows, the blooms staged in all sections being of splendid quality. This, however, is not to be wondered at, considering the generous prizes that are offered in several of the classes. For example, £18 is to be divided between four prizewinners in the class for twenty-four incurved in not less than eighteen distinct varieties, while a similar sum is allotted for twenty-four Japanese, the individual prizes being respectively £8, £5, £3, and £2 in each class. These here specified with several others are open to all comers. In addition there is a section open only to growers residing within a radius of twenty miles from Sheffield parish church, and in this prizes are given for groups of cut flowers, fruit, and plants. Mr. Wm. Housley, 177, Cemetery Road, Sheffield, is the Secretary, and to him all communications should be addressed.

—— The Exclusion of Fog from Hothouses.—Dr. Schunck, President of the Society of Chemical Industry, addressing the annual meeting of the Society at Owens College, Manchester, referred to the manner in which the atmosphere of large towns was poisoned by smoke, and to its ill effect upon the population. The great distress caused to those suffering from pulmonary complaints by the fogs so often prevailing in these towns had, he said, no doubt more than once suggested the possibility of filtering the air before allowing it to enter into our dwellings. The difficulties of such a device did not seem great in themselves, the real difficulty arising from the habits and prejudices of the people, who could not understand the possibility of ventilation except it be through windows and doors. In his paper on "The Effects of Urban Fog upon Cultivated Plants," Professor T. Oliver mentioned with favour a plan devised by Mr. Toope of Stepney, who caused the air entering his hothouses to pass through boxes containing trays with sticks of charcoal before impinging on the hot-water pipes, an out-draught being secured by means of "exhaust caps" placed on or near the ridge of the house. The plan, in Professor Oliver's opinion, was an efficient one. That any such plan would succeed in private houses as at present constructed was very doubtful. Dr. Schunck ventured to suggest, though he did it under fear of censure, that a moderate amount of smoke might actually be beneficial to vegetation by covering the leaves and other parts of plants with a thin coating of carbonaceous or tarry matter, thus rendering them unpalatable to insects. Of course, the amount would have to be exceedingly small, for if excessive they would soon experience deleterious effects, such as were seen in the scanty and blighted vegetation in the immediate neighbourhood of smoky towns.—("Gardeners' Chronicle.")

—— East Cowes Horticultural Society.—By the kind permission of J. S. White, Esq., Clarence House, East Cowes, the members of this Society visited Clarence House Gardens, which are in the capable hands of Mr. C. Martin, on Wednesday evening, July 21st. The conservatories, stoves, Orchid and Peach houses, vineries, and kitchen, fruit, and flower gardens were carefully inspected, and gave much pleasure and profit to the members. Mr. S. Heaton, Horticultural Instructor for the Isle of Wight County Council, then gave advice on the cultivation of many things they had seen, which proved instructive and interesting. On the motion of Captain Harvey (Chairman of the Society) unanimous votes of thanks were given the lecturer and the Technical Education Committee of the Isle of Wight County Council for the excellent series of lectures which had just terminated, and to Mr. White for allowing them to visit his gardens.

—— Garden Privileges Abused.—It is to be regretted that the desire of owners of beautiful gardens to share their pleasures with others less fortunate than themselves is so often obstructed by a few boorish people, who do not know how to behave. The great majority of those so favoured conduct themselves properly, but the few rude ones spoil the whole. The New York correspondent of the Philadelphia "Public Ledger" reports the following. The unfortunate facts find a counterpart everywhere. "The reckless riding of wheelmen through the grounds of wealthy gentlemen residing on the banks of the Hudson River has resulted in the taking away of that privilege. Quite recently Mr. John Jacob Astor was crowded into the ditch on his own estate by a party of rough riders, and at once he shut the gates of Ferncliffe to all wheelmen. Mr. Fred W. Vanderbilt has now followed Mr. Astor's example, on account, it is said, of a similar experience. The Astor and Vanderbilt places contain miles of the best roads in Dutchess County."

—— London's Open Spaces. — At the monthly meeting of the Metropolitan Public Gardens Association, 83, Lancaster Gate, W., the Earl of Meath (Chairman) presiding, it was announced that the Association had completed the laying out of St. James's Churchyard, Pentonville, by means of a grant of £600 from the City Parochial Foundation, and that the ground was opened to the public by Captain Penton, the freeholder, on the 6th inst.; that St. Matthew's Churchyard, Bethnal Green, was approaching completion, and would be opened on the 20th inst.; that the gymnastic apparatus granted by the Association had been erected at St. Nicholas' playground, Deptford, and that this ground would be completed and opened in about a fortnight's time. Progress was reported with regard to the laying out of the East Street site at Walworth, and it was stated that the Association had received the gift of a handsome drinking fountain for this ground from Mr. L. H. Isaacs. It was agreed to renew a previous offer to lay out Christ Church Churchyard, Blackfriars Road, and a disused burial ground in York Road, Walworth, provided their maintenance was secured. It was agreed to support schemes for the preservation of vacant sites near the Essex Road, Islington, and in Wandsworth, Bromley, and other localities, and to offer prizes for the best designs for durable yet artistic drinking fountains, costing not more than £50 and £100 respectively.—("Garden.")

—— Hardy Garden Flowers at Petersham.—At the recent village flower show, the second only, held in this charming Thames side locality, there were several collections exhibited of bunches of garden flowers, in which hardy perennials largely predominated. These made up very pleasing as well as interesting features that are worthy of wide emulation elsewhere. Yet I could but notice that several forecourt gardens close to the high road entered for the flower garden class were dressed almost exclusively in very formal fashion, with purely tender flowers. That is far from being a desideratum in flower gardening. But that hardy flowers should be well grown and shown in Petersham need not excite wonder, seeing that Mr. Aldridge, who has very extensive fields of hardy flowers, is one of the largest growers of these around London for market. He set up a fine collection in large bunches of flowers now in season, such as several Eryngiums, and also various Helianthuses, as well as Coreopsis grandiflorus, Pentstemons in variety, Gypsophila paniculata, Echinops ritro, Giant Daisies, Gaillardias, Achillea millefolium rosea and Ptarmica The Pearl, French Carnations, Stenactis speciosus, Heliopsis superba, Rudbeckias, and not least two beautiful forms of Lathyrus latifolius alba and rosea. In the competing collections there were also Galegas, white and blue; Lychnis chalcedonica, Tradescantias, Lythrum roseum, Monarda didyma, Campanula persicifolia, and others, all tending to show not only their summer decorative qualities, but how beautiful they are when set up in neat bunches. Of course amongst garden flowers Sweet Peas, Roses, and Stocks were found also.—A. D.

—— Lathyrus rotundifolius.—This seems to be the earliest flowering of the hardy Peas, beginning to bloom in early May. At this time it has stems 6 feet long, bearing a profusion of flowers of a deep rosy red colour, known sometimes as old rose. This Pea is also known, says the "Garden and Forest," as Lathyrus Drummondi, and is highly valued wherever grown, for, next to the white-flowered form of L. latifolius, it is probably the most generally satisfactory hardy Pea in cultivation, as the colour is a pure tone, which contrasts most pleasingly with the light green leaves. It is perfectly hardy, and may be increased from seed or by division.

—— Diervilla japonica.—Many of the garden Weigelas bear abundant flowers of good colour, ranging from a dark wine-colour to pure white, but somehow the habit of these shrubs is stiff, and they do not seem to mingle well with other shrubs. Diervilla japonica was raised from seed gathered by Professor Sargent from wild plants in various parts of Central and Northern Japan. It is a common shrub by the banks of streams and along the borders of mountain woods. Well-grown individual plants reach a height of 15 feet and a diameter of from 10 to 20 feet. This species is the only one which Professor Sargent saw, and he is inclined to believe that the three species of Maximowicz must be reduced to this one, which varies much in size, in the pubescence of its leaves, in the number of its flowers, and the length of the peduncles of its flower clusters. It is from different types of this wild species, perhaps, that all the garden forms have been derived. It is easily propagated, and it has been flowering for some weeks past in the Arnold Arboretum and along the Boston parkways. Certainly, says the "Garden and Forest," it is a more graceful shrub than the Weigelas of gardens as we know them, and it can be unhesitatingly commended for park planting. The flower clusters are sometimes long-stalked and sometimes nearly sessile, and they are rose-coloured, yellow, dark red, or nearly white on the same plant, since the flowers which are very pale when they open turn darker as they fade.

IMPRESSIONS OF CULFORD.

Many and varied are the attractions of this fine seat of the Earl of Cadogan, and though no notes were taken on a recent visit, impressions of some of the principal points of interest remain. The flower garden is very fine notwithstanding the dry weather now being experienced. The whole is enclosed by magnificently kept Yew hedges, and whatever their value from an æsthetic point of view, there is no doubt that very careful tending is necessary to create and maintain them in their present luxuriant condition.

The beds are charmingly arranged, filled to repletion, and present a mass of colours well blended. A good strain of East Lothian Stock is magnificent in its freshness and bright colour, while in small scroll beds and large vases the useful Madame Crousse Pelargonium is used with good effect. Roses are quite a feature, the best of the Teas, Noisettes, and Hybrids being well represented in large beds, while one or two varieties of Scotch Roses adorn the walls. Many fine Coniferæ are to be seen in the pleasure grounds, which are planted for effect, and coming to the conservatory a large collection of healthy Palms, and a finely arranged planted-out fernery, are interesting.

Everything in the kitchen garden denotes high culture and careful selection of varieties, to enumerate which would take far too much space. The walls are covered with fruit trees of all the leading sorts, some grand old giant Cherries—unfortunately beginning to give way—showing that gardening has long been in ascendancy at Culford. With admirable foresight Mr. Davidson has a lot of young vigorous trees that in a season or two will almost take the place of the old ones. Fruit under glass is largely and well grown. There are early Peach houses cleared of their fruit, others with beautiful crops now ready, and a large expanse of glass to later ones, that will carry on the supply after the outdoor fruit is over.

Without enumerating more, I must mention Victoria, Humboldt, and Pineapple Nectarines; Royal George, Lady Palmerston, and Grosse Mignonne Peaches, the immense crops of splendid fruit being too good to pass. Grapes are well done, some finely finished Hamburghs and Madresfields looking well in the early vinery, while the usual kinds grown for late work, as Lady Downe's, Gros Colman, and Alicante, were equally satisfactory. House after house is in equally good condition, and carrying equally heavy crops, but that these even are not enough to meet the large demand is evident by some hundreds of feet more fruit houses being built. Houses to delight any practical fruit grower, roomy, light, capitally arranged and ventilated, the new Carnation house also being admirably adapted for the culture of these superb plants.

Of Malmaisons about 2000 plants are grown, none of these being more than two years old, yet some are carrying fifteen or sixteen flowers of great size and substance. Five hundred of these plants were arranged in one house—a sight to be long remembered. Many points of interest are necessarily skipped in this brief note, but the condition of the whole place shows that Mr. Davidson has it well in hand, the unmistakeable impress of careful and well considered culture being everywhere apparent.—H. R. R.

Maréchal Niel and Medea.

It is a great mistake to suppose, as Mr. Williamson seems to think, that Maréchal Niel is not thoroughly perpetual in the open ground if properly treated. It only requires to be pruned intelligently, and to have the shoots of the year well ripened and thoroughly protected from frost. I have staged it in some quantity at every show this year from my five or six standards in the open, and they have still plenty of buds in all stages of development, many just forming. For the open air alone I do not think anyone besides Mr. Williamson would venture to compare Medea with it.—W. R. Raillem.

Roses at Gateford Hill.

On calling at Mr. H. V. Machin's, Gateford Hill, for the first time, I was much interested in the magnificent show of Roses which were ably described in the *Journal of Horticulture*, March 6th, 1896. The garden Roses were superb, better than I have seen them before. H.P.'s were showing good flowers on cut-backs, the maidens not being forward enough for the early shows. The cut-backs have given a good account of themselves, as during the past fortnight, finishing with the N.R.S. Show at Norwich, thirty-six stands were exhibited, and thirty-four prizes (eighteen firsts) and three medals obtained, which cannot be termed a bad record.

The Machin Judging Card.

The Machin judging card is the most simple and useful one for judging Roses or Chrysanthemums by points with which I am acquainted. No judge ought to be without it. If not generally known, it may be useful to readers of the *Journal of Horticulture*.—S., *Yorks*.

Comments—Garden Roses.

Garden Roses were, as usual, a feature of much attraction at the Crystal Palace, although it was only in these that the lack of competition was seen, as in the leading classes there were only two exhibitors. Mr. H. V. Machin of Worksop again won a cup given by the Right Hon. Lord Penzance for eighteen bunches, amongst which were Camoens, Marie Pavie, Homère, Gloire de Polyantha, Red Damask, Paquerette, Rosa Mundi, Madame Pernet Ducher, Bardou Job, Bennett's Seedling, Marquis of Salisbury, Cecil Brunner, and others, prettily and tastefully arranged. There was a very close competition in the nurserymen's class for thirty-six varieties between Messrs. Paul and Son of Cheshunt and Messrs. Cooling & Son of Bath, it being ultimately decided in favour of the former.

I subjoin, through the courtesy of Mr. G. L. Paul, a list of the flowers exhibited in their first prize stand, as it will be a safe guide to anyone wishing to cultivate these charming flowers:—Seedling H.T. Dawn, a very pretty flower, with a charming shade of pink running through it; Rugosa Blanche Double de Courbet, the best of the seedlings which have been yet raised of this character; W. A. Richardson, Crimson Rambler, Moss, Blanche Moreau, Camoens, Mons. Desir, Mortetti, Marquise de Salisbury, Andersoni, A. M. de Montravel, Gloire de Polyantha, Madame C. Guinnoisseau, Rosa Mundi, Rosa Alba, Bardou Job, Rug. Rose Apples, Hebe's Lip, Madame G. Bruant, Alister Stella Grey, Reine Olga de Wurtemberg, The Garland, Rug. Imbricata, Ma Capucine, White Pet, Lucida, C. Soupert, Dominil Boccardi, Mignonette, Waltham No. 3, Madame C. Worth, Madame Falcot, Kakanlik, Perle d'Or, Madame E. Notte, and Bennett's Seedling.

As I have already said, the competition in these classes was not very keen, and I think there are two reasons for this; one is that they are only flowers for large gardens. It is true that every real lover of the Rose will grow some of them, whether his garden be large or small; but that is a very different thing to growing a sufficient number to cull from for exhibition. Another is that they are very difficult and expensive to bring to the place of exhibition, and I think more encouragement in the shape of prize money should be given to the amateur classes.

Medal Roses.

In looking over an exhibition where the general character of the flowers is so uniformly good, it is not easy to select any of very superior merit, and we naturally look to what the judges have selected as the best Rose in each division. The bloom of Muriel Grahame was undoubtedly one which the French would call *hors ligne*, or one of exceptional merit. It was exhibited by Mr. Lindsell, and fully justified all that has been said in its favour. The other flower which obtained a medal for the best H.P. or H.T. was a very beautiful bloom of Kaiserin Augusta Victoria. It was a very beautiful bloom, no doubt, but as it seems to me, as it has done to others, to be nearly, if not quite, a pure Tea, I grudge the honour given to it; but in saying this I do not wish to detract at all from the merits of the flower, or from the skill displayed in its cultivation.

In the nurserymen's class the flower with which Messrs. Harkness and Sons obtained the medal was a very beautiful and bright bloom of Horace Vernet, exhibited in the style in which Messrs. Harkness generally manage to show this Rose; what a pity it is that it can hardly ever be shown from anything but maiden plants. There was also a very beautiful bloom of Madame Cusin which obtained for Mr. B. R. Cant the medal for the best Tea or Noisette. Several flowers were exhibited as seedlings, and, as usual of late years, Messrs. A. Dickson & Sons of Newtownards carried off the gold medal for Ulster, another of their series of beautiful pink Roses, of which Mrs. Kellar and Mrs. Sharman Crawford are good instances. It is a flower of great substance and depth of petal, fragrant as all medal Roses ought to be, and very vigorous in growth, with smooth wood and bright glossy green foliage. There were several other Roses exhibited in this class, of which Mrs. Rumsey, exhibited by Mr. C. Rumsey, a pretty garden Rose, and Royal Scarlet, a brilliant coloured flower, exhibited by Messrs. Paul & Son, obtained cards of commendation; they also exhibited the Rev. Alan Cheales, a flower of peculiar shade of colour and very vigorous in growth. Messrs. Dickson & Son had Countess of Caledon and Killarney, both likely to be useful Roses. Messrs. Frank Cant and Co.'s Mrs. Frank Cant is another very promising flower of which I think we shall hear more by-and-by.

Men and Meetings.

I have already alluded to the change in the *personnel* of exhibitors. I may also notice another change. Mr. Orpen has moved a step higher, and Mr. Charles Grahame has occupied, as I was sure he would do, a very leading position, and I have very little doubt that his success this year is a precursor of still greater successes in the years to come; and it would be ungracious to leave any notice of the Metropolitan Show without saying how much the Society is indebted to him for his generosity, and also for the trouble which he has taken in procuring the very appropriate and beautiful silver trophy in the amateurs' division.

There is one feature of the Metropolitan Show which always gives to it an additional interest—viz., that it affords a meeting place for rosarians from all parts of the country. It is pleasant to meet old friends and to be able to take counsel with them on the various merits of the flowers we love. Whatever they may do on other occasions, they always try to be at the Crystal Palace. Of course it has its painful side, for there are many blanks, and we miss every year one or more of those who used formerly to be with us. One is especially glad to see that Mr. Burnside, amidst tremendous difficulties, has been able to secure a first prize in his much-loved class of Teas, and I have been very pleased to hear since the show that he has once more come down into his old county, and has accepted work at St. Margaret's, at Cliffe, near Dover. I do not know whether he will be able to go in for Roses, but from what I know of him and of his zeal I think we may safely predict that he will do so. I see no lack of zeal amongst the exhibitors and friends of the Rose, and I think we may look forward hopefully to the future.—D., *Deal*.

AN AMATEUR'S GRAPES.

I note in the replies to correspondents in the *Journal of Horticulture* reference to a photograph of Grapes (Barry Dock), which I presume refers to a communication and photo I sent you a few weeks ago. This photo was taken at the time the Grapes were stoning, and as the negative was not destroyed I have had another print taken to-day, which I enclose. There are four Vines shown on the print—viz., Mrs. Pince, Muscat of Alexandria, Black Alicante, and Madresfield Court. I have had to take a berry out here and there since stoning; they are nearly all coloured now, and the Madresfield Court, which is at the further end, has the largest and best bunches.

I obtained my information on Grape culture as follows:—In the latter part of 1894 I saw growing in a small greenhouse a Black Hamburgh Vine, and from what I then observed I thought I would like to try and see what I could do myself. At this time having very little knowledge of horticulture, and no knowledge whatever on Grape culture, I was told it would take many years to understand how to grow Vines successfully; however, undismayed, I determined to make the attempt, and had a small house constructed, 15 feet by 10 feet, and made my border about 5 feet broad.

When in London I had access to the *Journal of Horticulture* for about nine years back, which I carefully looked over, and noted the dates of the weekly issues that contained information likely to be useful to me. I then called at your office and obtained all the back numbers which I had previously taken note of, and carefully read the same. I then ordered some Vines from Messrs. J. R. Pearson & Sons, and planted them. I also at the same time had two Black Hamburgh and one Madresfield Court in pots for fruiting. As the Vines did not come on so well as I expected I studied the articles in the back numbers of your Journal again, and came to the conclusion that the border was not as it should be—not sufficiently porous, so I carefully lifted the Vines, took

the whole of the border out, and made it up again with part fresh turf and plenty of lime rubbish. I then replanted the Vines in it, and afterwards treated them according to the best information from the back numbers and from articles that appeared from time to time since.

With regard to the Vines in pots, I ripened six bunches on each Black Hamburgh, and five bunches on the Madresfield Court, which did not burst any berries; in fact, the Vines in pots finished the crops very well indeed. At this time the Vines in the border had completed their growth, and were stopped at 9 feet, then kept in check. The canes at this time were a good size, with prominent buds. When the leaves were down they were pruned to 8 feet, except the Muscat of Alexandria, which was pruned to 6 feet 6 inches. The following year (last year) the Madresfield Court carried six bunches, Black Alicante three, Muscat of Alexandria four, and Mrs. Pince five. These finished well, and the canes were stopped at 12 feet, and afterwards pruned to 11 feet, except the Muscat of Alexandria, which was pruned to 9 feet.

I started the Vines about the middle of February, and they soon began to show plenty of bunches. I left nine on Madresfield Court, nine on Alicante, six on Muscat of Alexandria, and eight on Mrs. Pince, which you will see by the photo look fairly well considering the prevalence of dull, cold, and wet weather during the whole of the time the Vines were in flower. At the present time the Madresfield Court is nearly all coloured, and promises well to make a good finish, the weight of the bunches ranging from 2 to 3 lbs. By carefully following the instructions given in the *Journal of Horticulture* on the treatment of Madresfield Court I have not had a cracked berry this year, neither have I had any trouble from this cause the two previous years.

Up to the present time I have had no gardener to advise me or assist me in any way, and I can assure you I am most anxious to obtain your Journal every Thursday as early as possible. I may add that my Vines are grown in an inside border with a brick wall above the border, so that the lower part of the Vines are below the staging.—THOS. LOWDON.

[We have pleasure in publishing the foregoing narrative, and those of our contributors of information on Vine culture will be gratified by the results, as shown in the photograph, taken, it may be noted, "when the Grapes were stoning." The photograph was in our hands some weeks ago, but as the explanatory notes were not so full as we desired, and as Mr. Lowdon's address was not quite clear either, we inserted a reference in our "correspondents'" columns with the object of eliciting the information now imparted by the grower of the Grapes represented in fig. 15. Judging by the photograph, the results seem to be altogether creditable. That the Vines were good goes without saying, and that their cultivation has been good appears to be equally conclusive.

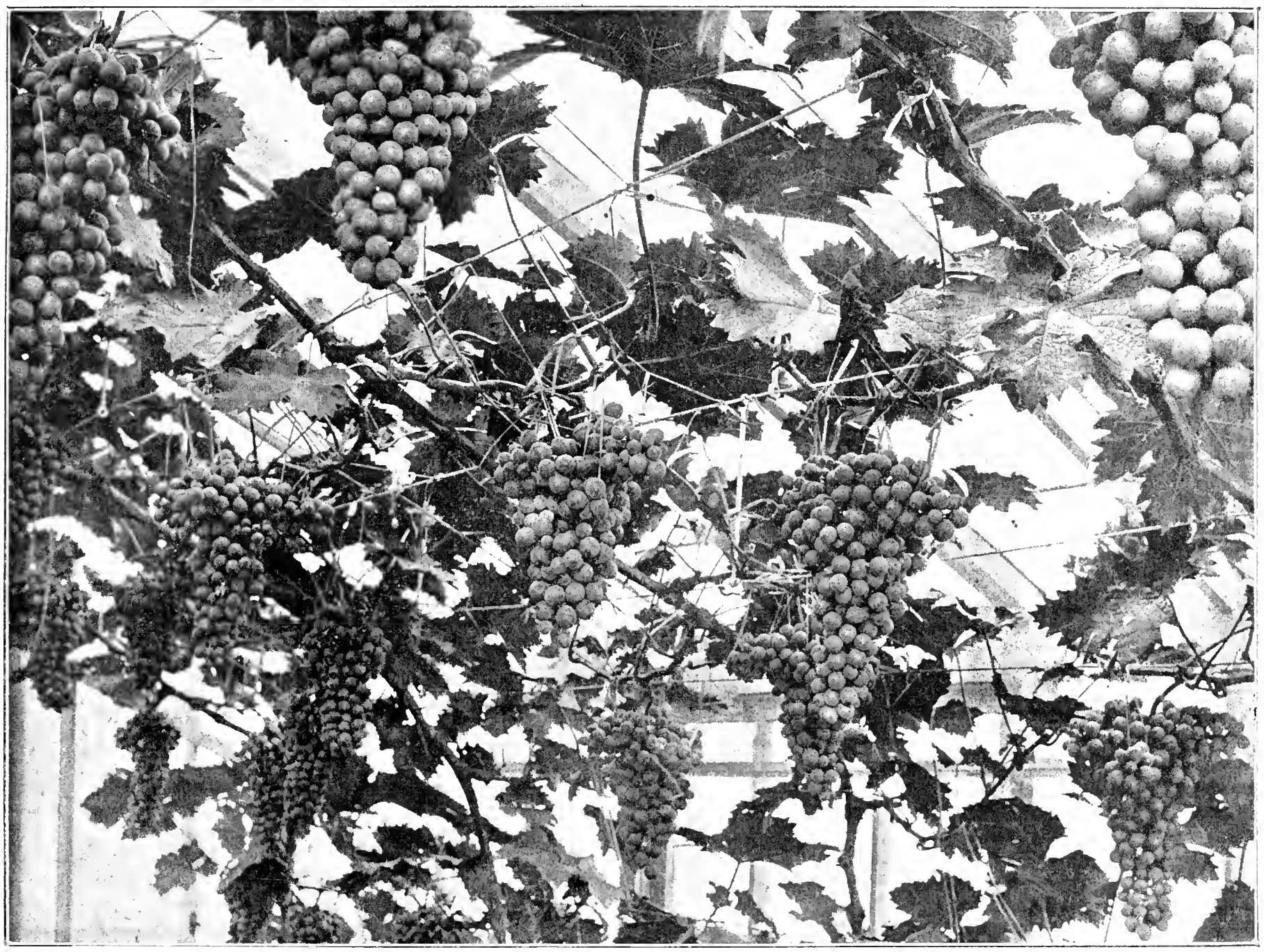

FIG. 15.—AN AMATEUR'S GRAPES.

We have two or three observations to make on this instance of success in Grape growing. 1, The same information which Mr. Lowdon turned to such good account must have been read by thousands more and some we may hope have equally benefited by it. 2, If there is a horticultural society in the district, and if, say, three sound gardeners were delegated to inspect the Vines in question, and they were found to be all that the photograph suggests, might they not, under all the circumstances of the case, be deemed worthy of some official recognition?

This opens another question—namely, Would it not be appropriate for societies, which are established for the promotion of local horticulture, to go beyond the show tent now and then and recognise exceptional merit in cultivation where this is in a form that cannot be "exhibited," though not the less meritorious, as in the case of a house of Grapes? What say our readers on the extension of the usefulness of such societies on the lines suggested by the Grapes of Mr. Lowdon, who sends us his address—23, Kingsland Crescent, Barry Dock. In the meantime we ask his acceptance of our congratulations.]

NANODES MEDUSÆ.

THOUGH lacking the delicate beauty of many Orchids this species possesses in a marked degree the quaint grotesque character that go far to make the family so popular, and anyone who delights in these singular and marvellous productions of Nature could not do better than include a plant or two in his collection. Some botanists have ascribed this and the other species in the genus to Epidendrum, as to this genus the structure of the blossoms bears a great resemblance. The habit is, however, so distinct that as a garden plant it will doubtless continue to be known by the name Dr. Lindley gave it from the typical N. discolor.

It is by no means a rare plant, yet not so frequently seen as it deserves. Its culture is not difficult if only it is allowed to have its own way, and cultivators do not try to force it into a resting and growing season according to their own notions of how it should grow. Watch the plants, and note how before one growth is finished another starts away, and how little rest it requires will soon be apparent. Keep it in a moist and mild temperature the whole season through, and never allow the roots to become absolutely dry. These may be accommodated in pots, pans, or baskets, but are best in every case suspended from the roof.

Tree Fern stems, too, form a capital holding for the roots, the open nature of this material, combined with its power of retaining moisture in just the right quantity, rendering it perhaps the very best material that could be used. If grown in pots or baskets the plants should not be disturbed more than is absolutely necessary, so when the time comes for a renewal of compost the work should be thoroughly done. The latter may consist of two parts of sphagnum moss to one each of the best peat fibre and broken crocks, this making a medium that will not readily lose its proper mechanical condition on the one hand yet hold plenty of moisture.

The flowers occur at the end of the stiff ungainly-looking shoots, and vary a little in colour. The usual tint is a brownish yellow on the sepals and petals, the lips roughly heart-shaped, magenta purple in front, where it is cut into deep filaments, as seen in Dendrobium Brymerianum. They occur at different times of the year, sometimes in pairs, but more often singly, and last a long time in perfect condition if not wetted with the syringe. To Messrs. Backhouse of York the credit of its introduction is due, this firm having first imported it from Ecuador as far back as 1867.

BOLLEA CŒLESTIS.

This is one of the very best species in the genus, and an unusual colour in Orchids. The plant has no pseudo-bulbs, the growth consisting of more or less erect stems from a rather tufted rootstock, young roots being annually produced from the base of these. The flowers occur in single-flowered stems over a foot in height, each measuring from 3 inches to 4 inches across. The sepals and petals are a pretty light blue at the base, becoming nearly white at the tips, the lip large and deep violet purple.

Many growers make the mistake of giving this and similar Orchids much too thick a compost, the roots in many cases perishing before they can get through it. About an inch or a little more is ample for small or medium specimens, a little more being allowed for large plants. Fine specimens have also been reared on pieces of Tree Fern stems, a capital holding for them if these can be obtained. But whatever is chosen for their reception, it is imperative that they be very firmly fixed in position, so that they cannot possibly ruck about.

The compost for baskets or pots may consist of peat and sphagnum—care being taken to have the latter quite fresh and clean—with plenty of rough lumps of charcoal. Remove the whole of the old material from the roots, and if these are in bad condition let them dry thoroughly before replanting, and cut out all dead and decaying ones. The new tiers have then the advantage of new, sweet compost.

There is no need to elevate the plants above the rims if potted, but neither should they be much below, as in this case moisture is apt to collect about the rootstocks to an injurious extent. Work the new compost about the roots with a fine-pointed dibber, and make it fairly firm. After potting place the plants in their growing quarters with as little delay as possible, and water very carefully until the roots are again active. When these are getting well about the new material a full supply will be needed right through the growing season.

In winter of course less will be required, as owing to the atmospheric conditions outside the roots do not dry so rapidly. But no dry rest is needed—simply a reduction of moisture as in any ordinary plant to meet the exigencies of the weather. These ebulbous kinds are not, if judiciously managed, very subject to insects, but on the other hand, if once badly attacked, they are more easily injured. Hence the necessity for very rigid exclusion of these pests as scale or red spider, sponging or using the vapourising fumigator directly the first insects are seen.—H. R. R.

MUSTARD AND CRESS FOR MARKET.

[The following article was written some years ago by Mr. Lewis Castle and published in the *Journal of Horticulture*, but as the issue containing it is out of print, the article is reproduced by desire of three correspondents whose letters are before us, and it will doubtless be acceptable to many of our readers.]

IN most English gardens attention is given to providing a supply of Mustard and Cress for salads, and being easily and quickly grown, and further possessing very wholesome qualities, they are within the reach of all, even to those with most limited means or accommodation for plant or vegetable growing. Still, very few residents at a distance from London have any idea of the extremely large quantities of this small salading grown to supply the demands of the metropolitan markets. It is only by visiting the gardens where its culture is made a speciality, or by an early morning journey to Covent Garden Market, that anyone unacquainted with the facts would be able to form the slightest conception of the extent of the trade in such apparently insignificant productions. One reason for this is that Mustard and Cress require to be quickly grown, quickly sold, and quickly conveyed to the consumer, as they soon become tough and tasteless after cutting; and the consequence is that outside the markets large quantities are seldom seen, as the retailers purchase only what is ordered, or as much as they consider will meet the demand for the day. The supply is thus very generally distributed, and though few shops have more than a dozen punnets, there is scarcely one in a respectable neighbourhood that does not require some daily. But for this fact it would seem almost incredible that so large a quantity as some growers raise could be consumed while fresh.

The chief season for Mustard and Cress is during the spring months, at which time a thousand dozen punnets are brought to Covent Garden Market daily by the chief growers, and one alone sends from a thousand to fifteen hundred dozen punnets per week. The supply is maintained in a varying degree throughout the year, reaching its lowest in November, December, and January, especially in severe or very wet seasons. It is, however, a constant crop, and one grower informs me that his supply would average five hundred dozen punnets per week throughout the year; and judging by the space he devotes to its culture the quantity does not seem to be exaggerated, though the results are somewhat astonishing when we consider the money value that is realised.

The price per dozen punnets varies from 1s. to 2s.; but as less than the first-named price has sometimes to be taken the average might be fairly considered to be 1s. the dozen. Thus five hundred dozen per week would give a total annual amount of £1300; and taking the profits at the very low estimate of 10 per cent. we have a yearly income of £130 for Mustard and Cress alone. From what I have seen and can judge of the labour and expense incurred in the production I should, however, think the profits would be nearer 20 than 10 per cent. The result appears almost incredible, and considering that even those market gardeners who grow the largest quantity of small salad also have several other crops, especial attention being paid to Mushrooms, this form of market gardening seems to be a rather satisfactory one. It must be remembered that these particulars only refer to those who grow the largest quantities, and less than half a dozen almost entirely supply the demands of Covent Garden. In small quantities it would probably not pay for carriage, and most of those mentioned as making a speciality of small salading have wagons which convey that and other produce to London and return laden with manure. The grower must also be conveniently situated as regards distance from the chief markets, or the expense would be considerably increased and the quality of the salad greatly deteriorated if it remained closely packed for too long a time.

It may be of interest to some readers to know the methods of growing this salad adopted by market gardeners around London, and as I have recently had an opportunity of visiting several of these establishments a few observations upon the subject will give an idea to those who are desirous of commencing the culture on a large scale. It may be premised that though some of the best gardening in the kingdom is to be seen in market growers' establishments, yet there is generally so much trade rivalry and jealousy that a reluctance to communicate any details of culture very generally prevails. Some who have been successful imagine they possess a secret essential to the satisfactory production of any particular crop; yet after all they only act upon general principles, and in half-a-dozen different establishments as many different systems may be seen in operation, with results that vary but very slightly, and are in a pecuniary point of view equally satisfactory. So it is with the crop now under consideration. One man who has been very successful in the culture of Mustard and Cress, and who sends a very large quantity to market, considers that his progress is due to certain cultural details which he would not communicate on any con-

sideration, and he is under the impression that other growers are continually endeavouring to ascertain these, even going so far as to offer some of his men very high wages to obtain their services; yet this does not appear necessary, for all growers I have seen have equally good crops.

One highly important matter is to obtain good seed, as unless this is done the crops will come irregularly, and it will be difficult to obtain a constant, reliable supply. It may be here mentioned that very little of the true Mustard (Sinapis alba) is grown, the substitute employed being Rape (Brassica rapa), which is preferred chiefly because it has a milder flavour, and the young stems blanch very readily, being also free from the small hairs which the stems of Mustard bear. Cress (Lepidium sativum) is grown in less quantities than the Rape, as it is less in demand, and, further, it is rather more trouble to raise than the other, as most gardeners know. The wholesale prices per bushel average about 12s. for Rape and Mustard and 16s. for Cress, though samples of superior quality realise higher prices.

Another point that especially needs attention is sowing the seed very thickly (in the case of the Rape the seeds are placed as closely as possible), as that not only insures the blanching of the stems, which adds greatly to the value of the crop, but it also simplifies the packing, as when the stems are so close together they are cut and placed in the punnets quickly and evenly. A light soil or compost is invariably employed; but the best results appear to have been produced by old Mushroom-bed manure not too much decomposed, which is sifted or screened and placed in beds 3 or 4 inches deep quite level, moderately firmly, and if at all dry it is thoroughly watered before sowing the seed. Almost any kind of light soil is suitable, and old tan was used at one time very largely for the purpose; indeed, there was one grower at Vauxhall some years ago who employed that entirely. It is also said that the sawdust which is now used in some stables is well adapted for Mustard and Cress; but it is too "strong" when first received from the stables, and requires storing for a time or to be drenched with water to remove some of the ammoniacal compounds with which it is saturated. An important object is to obtain salad free from grit, and on this account the old Mushroom-bed manure seems to be especially useful, as it forms a moist nourishing medium, in in which the rootlets can readily extend. The seed not being covered with soil also aids in insuring a clean crop, and the surface being rendered as fine and even as possible, the produce is obtained of equal height, which also adds considerably to the value of the crop, and facilitates the cutting and packing in punnets.

These particulars especially apply to the winter and early spring supply, which has to be raised in heated houses or frames. In the summer beds are prepared outside. Where the early supply receives much attention small span-roof houses or lean-to frames are devoted entirely to the purpose, as are the inside borders of late vineries. In the former case the houses are about 9 feet wide and 6 feet high, and vary in length from 30 to 60 feet, but of course the length is of little importance. They are heated with 2-inch or 2½-inch pipes, one row extending round near the sides. The beds are 4 feet wide, thus leaving a space of a foot for a path down the centre, which are edged with narrow boards 3 or 4 inches deep on each side, and next to the pipes also. The frames are about 5 feet wide, with a pipe along the front. In the case of the vineries the prepared soil is simply spread on the surface of the border to the required depth, and the seed is sown, sometimes being pressed slightly into the soil with a flat piece of wood or something similar. A good supply of water is then given, and the seed is covered with ordinary garden mats. These are only removed when it is necessary to supply water; and this must be carefully attended to, as little is given after germination is well advanced, or decay is likely to result. The mats are kept on during the day until the young plants have grown an inch or two, when they are removed to permit the seed leaves to acquire a bright green colour—a point of some importance in combination with well-blanched stems.

In from eight to twelve days the crop is ready for cutting—*i.e.*, when the stems are about 4 inches high, and to effect this a peculiar but simple knife is used. This has a straight flat blade like an ordinary dinner knife, but not rounded at the end, about an inch broad and a foot long. Near the handle is a crank turned upwards at right angles to the blade like a bricklayer's trowel, and the end is again turned at right angles, but parallel with and away from the blade; this is inserted in the handle just like the trowel. With this instrument the salad is cut much in the same style as mowing with a scythe, the blade being flat on the ground. One sweep of the knife cuts enough or more for a punnet, and is taken up with the hands and placed in evenly, so that it appears almost as if it had grown in it. Some practice is required to effect this satisfactorily, and skilful, experienced cutters can gather and pack over a thousand punnets a day. The punnets are then packed in boxes and conveyed to market in vans. The chief labour is removing the old material from the beds, which has to be done after every crop; this is stored away in a heap for several months and then incorporated with fresh material. Where the compost is purchased this is a rather expensive item, and one grower, I am informed, pays 2s. 6d. a load for old Mushroom-bed manure. In the best managed establishments, however, Mushrooms are grown in addition, and that outlay is thus to some extent reduced. It should further be added that both houses and frames are constructed in the most economical manner possible, utility and cheapness being the chief objects.

As to space required, some idea may be gathered from the fact that the punnets are about 6 inches in dimater, and I should think at a safe estimate a square foot of a good crop would fill two punnets of Rape, a little more Cress being required. Thus a heated frame 60 feet long with a bed 5 feet wide would yield about fifty dozen every fourteen days throughout the year, as the lights could be removed and the heat discontinued as the season advanced. Taking twenty-five crops in the year at the rate of 1s. per dozen would give a yearly total from one frame of £62 10s.; or, to put it in another way, the yearly return per square yard of ground occupied would be over £1 10s., a quarter of an acre so cropped giving £1815 per annum.

Although Mustard and Cress seed differ in cost to the extent of 4s. per bushel, there is not much difference in the results to the grower. For instance, a bushel of Mustard or Rape is sufficient to sow 256 square feet of bed, the same quantity of Cress being sufficient for 384 square feet; but for the same cost as the Cress 340 feet can be sown with Mustard. The ultimate results thus vary slightly, for though a somewhat higher price is obtained for the Cress, yet smaller quantities are required, and there is more uncertainty regarding the crop. As a guide to those intending to grow this salading it may be stated that a pint of Mustard seed is required for each 4 square feet, and the same amount of Cress for each 6 square feet. From about 25 to 30 per cent. should be deducted from the estimated returns for the cost of the seed. Thus, to provide the five hundred dozen per week mentioned above, between six and seven hundred bushels of seed are used yearly, at a cost of something over £400, or about one-third of the returns. The punnets are very cheap, but even for them, where such large quantities are grown, £2 or £3 per week is said to be the average outlay. It should be stated that some growers soak the Rape seed in water before sowing to hasten the germination.

Such are a few particulars concerning a very simple crop, which, if judiciously managed, can evidently be made more profitable than some others apparently of far more importance. The prices and quantities have been chiefly furnished by reliable market salesmen, and the information obtained from several different sources agrees in the main facts. Further, to avoid misleading statements as much as possible, the lowest figures have been given in each case.

TUBEROUS BEGONIAS.

THE display that can be made with a collection of these beautiful flowers is a magnificent one if the colours are carefully selected, and both double and single flowers are grown. But it is a matter of no small trouble to make a selection, especially if plants are desired for cultivation in the border as well as in the greenhouse, for some that succeed admirably in the latter are unsatisfactory in the former, and *vice versâ*. Then there are several that produce a fine effect when placed in baskets, and for this purpose particularly tuberous-rooted Begonias are not nearly sufficiently grown considering the results that may be achieved at so little cost of both time and money.

Many kinds of plants, upon the cultivation of which a considerable amount of time must be expended so as to achieve satisfactory results, are grown in large quantities, while tuberous-rooted Begonias are neglected. Not that this is the case to-day—or at any rate not to such an extent as a few years ago. Still, the fact remains that they are not accorded the attention to which their several merits undoubtedly entitle them. But if our large growers continue to put improved varieties on the market it may be naturally expected that ere long they will be grown all over the country, both in large and small gardens, for it must be remembered that they are equally well adapted for either. Under glass or out of doors, in the midst of towns or in the heart of the country, they grow well, and will give the maximum of display with the minimum of trouble.

To thoroughly appreciate the beauty of the foliage and of the flowers under either system of culture a place must be visited where a large collection is cultivated, such, for example, as that of Messrs. J. Laing & Sons, Forest Hill. Here may be seen in the houses and in the open ground thousands of plants in all stages of growth, and it is impossible for anyone to see them without having a wish arise to grow some. Not only is there great variation in the colour, shape, and substance of the flowers, but the leafage also is wonderfully diversified. On one plant the leaves may be green, while in another they approach the Rex varieties in their splendid marblings. Then there are the single flowers with smooth edges and with fimbriated ones, similar variations prevailing amongst the scores of doubles, while the habits of the plants are scarcely less dissimilar. Taking all these things into consideration it cannot be a matter for surprise that the popularity of the tuberous Begonias becomes greater year by year.

In view of the fact that many readers of the *Journal of Horticulture* are interested in these plants, a recent visit was paid to the Forest Hill emporium to see a few of the best varieties in flower. The "few" mounted to many scores, but notice was only taken of some of the new ones amongst the doubles and the singles, of each of which mention will be briefly made. Taking first of all the doubles, we will commence with a striking orange scarlet variety that has been named Dr. Jim, and which is superb. The upstanding soft salmon blooms of Duchess of Marlborough are singularly beautiful, as are those of Lady Pearson. The colour of this variety is apricot tinged with buff, making a very charming flower. The large crimson blooms of Li Hung Chang ought to make the variety an effective one for exhibition purposes. Very beautiful are the crimson of the Hon. Cecil Rhodes, the pure yellow of Diamond Jubilee, and the cerise of Lady Rosmead.

Though most people give the preference to the double varieties as making the best display, the single ones are very beautiful and, moreover, very effective when carefully staged. Evidence of this has

frequently been seen at many of our large shows. The bright pink of Marchioness of Northampton is very pleasing, as is the yellow of Mrs. Faudel Phillips. The habit of both of these is excellent. If one of delicate colour be desired there is Countess Nelson, while in direct contrast is the crimson Earl Brownlow. Mrs. Crisp, cerise, and Dr. Nansen, soft scarlet, are both varieties of merit. Half a dozen new ones have been mentioned, but there are many others of equal merit which must be omitted.

Hitherto note has only been made of those that are especially adapted to culture in pots, but it would be unfair to omit mention of a few of those that are admirably suited for bedding purposes. Amongst these are Duke of York, of which the colour is rose with a lighter centre; Jules Sacy, orange; Source d'Or, yellow; Phosphorescens, rich deep crimson; Golden Ball, yellow, and Madame E. Tourtell, white.—WANDERER.

THE BRADFORD PUBLIC PARKS.

THE smoky town of Bradford can boast of several public parks, which have been designed with skill and taste, and are well kept, this being the more praiseworthy under an atmosphere laden with smoke from hundreds of factory chimneys. Bowling Park, which is 53 acres in extent, with its flower garden, terrace, broad and undulating lawns; its clumps and belts of shrubbery; its vistas and lakes—all betoken skill in formation and care and management. On the western side are several acres of woodland. Overlooking the park on the east is Bolling Hall, formerly the seat of the De Bollings and Tempests of knightly fame. Built more than 500 years ago, it stands to-day unchanged as in those ancient days, with its latticed windows, its banqueting hall with raised daïs and minstrels' gallery.

The conservatory in the public park is at all times of the year filled with bloom. It is a lofty structure of about 90 feet by 30 feet. Two-thirds of the space is occupied for the display of flowers, the other part as a stove. The central portion of the flowering house was arranged with large Camellias, several plants of Kentia Fosteriana, Ficus elastica variegata, and Araucaria excelsa. In the foreground was a large bank of bloom, perfect in freshness and beauty, composed of good plants, in 6 and 7-inch pots, of double and single Zonal Pelargoniums, double Petunias (purple and white), Show and Fancy Pelargoniums, Schizanthus pinnatus, Spiræas, Hybrid Perpetual Roses, and Lilium auratum interspersed throughout the group. The edging was of Spiræas, Anthericum variegatum, and Aspidistras. The side stages were filled with all the above-mentioned flowering plants, with the addition of some fine pots of Machet Mignonette, and were edged back and front with blue Lobelia and Harrison's Musk.

The arrangement of show houses in public parks must be effective as seen from the exterior as well as the interior. The rafters were clothed with Cobœa scandens variegata, and profusely flowered Heliotrope. Hanging from the roof were wire baskets, 8 inches in diameter, filled with blue Lobelia and Harrison's Musk (but not in mixture), a fault which is not perpetrated here. There were also several large baskets of single Petunias in self colours. The other baskets were one of Stenochlæna scandens, one of Cyrtodeira metallica, one of Nephrolepis tuberosa, and several of Asparagus decumbens.

In the stove portion everything betokened cleanliness and good culture. The centre was arranged with several large Areca lutescens and Cocos flexuosa, while around the sides were Crotons, Dracænas, Dieffenbachias, and Caladiums, edged front and back with Caladium bicolor and C. argyrites. Amongst noteworthy objects in this house were several fine pans of Cyrtodeira metallica and Selaginella apoda, also a plant of Schubertia grandiflora covered with its fragrant white flowers. The rafters were clothed with Allamandas and Gloriosa superba. In this house a hanging basket of Hoya bella, profusely flowered, was very attractive; Davallias grown on cork rafts, and several Orchids in teak wood baskets were noticeable.

Mr. Spencer, the superintendent, is well known in the neighbourhood as an excellent gardener. All the parks, besides these show houses, have adequate glass for the growing and propagation of the plants for the flower gardens and conservatories.

Peel Park, purchased in 1853, cost, with laying out, £12,000; it is 53 acres in extent. For the whole length of the park the ground slopes in a gentle declivity. On the southern rising ground is a terrace 30 feet in breadth and at least half a mile in length, sheltered by trees and shrubs. On each side of its entire length are grassy recesses, flower beds, and statuary. The conservatory, a lofty structure, 100 feet by 30 feet, was arranged on the ground without any side stages. In the centre was a large Dicksonia antarctica, Camellias, and Phormium tenax, backed up with flowering plants, consisting of large Fuchsias, Zonal Pelargoniums, silver-edged Zonal Pelargoniums (large plants) Spiræas, Lilium auratum, and L. Harrisi.

Horton Park, opened in 1878, is 39 acres in extent from west to east, and the park has a gentle slope. The terrace runs in this direction. On one side of the terrace are eight sheets of water connected by miniature waterfalls, the banks on the northern side being clothed with trees, shrubs, and Ferns to the water's edge; grassy banks slope down from the terrace to the lakes. The lofty conservatory, the flowering part, 60 feet by 30 feet, had a central arrangement of Camellias, Araucaria excelsa, and A. Bidwilli. The bank of flowers was composed of about a dozen large Genistas, Lilium auratum, L. Harrisi, Schizanthus pinnatus, Spiræas, Fuchsias, Zonal Pelargoniums, Show and Fancy Pelargoniums. Amongst the latter were several good plants of the pure white Duchess of Teck. The side stages had smaller plants of the above, with the addition of Rhodanthe Manglesi, Eulalia japonica variegata and E. japonica zebrina, Coleus, Primula obconica, Hydrangea hortensis, and H. Thomas Hogg. The stages back and front were edged with white Lobelia, and a pale blue and white Lobelia, similar to the old Paxtoni, Harrison's Musk, and Isolepis gracilis. The stove had the usual fine-foliage plants, with the addition in the way of flowers of Gloxinias and Clerodendron fallax.

Lister Park, 54 acres in extent, was purchased in 1870 from the Cunliffe-Lister family, who were seated at Manningham House in the park for several centuries. It was bought for £40,000, and cost £10,000 to lay out. In this park are the monuments of two men who have more than any others developed the trade of Bradford—namely, Samuel Cunliffe-Lister, now Lord Masham, and Sir Titus Salt, Bart., of Saltaire; the latter monument, of white Carrara marble, formerly stood near the Town Hall.

There are in this park three conservatories in a line. The central one is 20 feet high, 100 feet long, and 30 feet in breadth. It was arranged with Camellias, a large Dicksonia antarctica, and several Dicksonia squarrosa, a Chamærops Fortunei, and Chamærops excelsa, with Phormium tenax and Japanese Maples. The flowering plants were Spiræas, Fuchsias, and Zonal Pelargoniums. The side stages had hundreds of herbaceous Calceolarias in bloom, Spiræas, Zonal Pelargoniums, and Fuchsias edged with common Musk and Isolepis gracilis. On one side of this central house is a stove, on the other a greenhouse, each about 90 feet long, besides the other preparatory houses. In addition to the aforementioned parks is Bradford Moor Park, of smaller extent, but equally well kept.—F. STREET.

BIRMINGHAM GARDENERS' ASSOCIATION.

UPWARDS of eighty members and friends enjoyed the annual outing on the 21st inst., by the kind permission of the Earl of Rosebery and Leopold de Rothschild, Esq., to Mentmore and Ascott. The weather proved most auspicious, though distant thunder was heard in the afternoon, accompanied by a few drops of rain when the party was at Ascott in the afternoon.

Upon the arrival at Leighton, about 10.30 A.M., the party was conveyed in brakes to Mentmore, viâ Cheddington. One of the most marked features during the route were the several large orchards of Damson trees, both old and young, the variety being apparently the Prune. Walnuts, however, appeared to be a good crop. The ride up the long carriage drive leading to the mansion, or rather the village of Mentmore, proved very interesting to those fond of tree scenery. There were several groups of fine Wellingtonias on each side of the drive. Mr. J. Smith, the well known head gardener, met the visitors at the entrance to the gardens, and at once conducted them through the glass department. The large house of Muscat of Alexandria revealed a crop of extraordinarily fine bunches with large berries on the eve of perfect maturation, as they were assuming the desirable amber tint. The other crops of Grapes were also in capital form. The fruit of Peaches and Nectarines in a large house had been gathered. The houses containing large quantities of stove and greenhouse plants also elicited admiration.

The *pièce de resistance*, however, was the palatial looking mansion with its splendid and extensive grounds and arboreal surroundings, coupled with the magnificent view of the Vale of Aylesbury and the distant Chiltern Hills. The mansion and pleasure grounds, which were designed in 1851 by Sir Joseph Paxton, are indeed lasting monuments of his genius and capability both as a landscape gardener and an architect. It is needless to remark that good order and neatness abounded, though on the previous day the heavy storm of rain had left evidences of its character on the sides of the sloping walks. Altogether the visitors were delighted with what they saw.

Heartily thanking Mr. Smith for his courtesy and attention, the visitors, about two o'clock, "made tracks" for Ascott, a distance of nearly three miles, where they were met by Mr. John Jennings, the head gardener, who led the way through the extensive and charming grounds, which are of varied beauty and picturesqueness. The Elizabethan mansion of brick and timber is partly clad with Wistarias, Roses, Clematis, and other trailing and climbing plants. A leading feature in the extensive shrubberies was a profusion of golden-hued trees and shrubs, planted in large masses and singly, in great variety, and which, well balanced with a rich and varied assortment of other subjects, including an extensive accompaniment of hardy herbaceous flowers, ornamental foliaged plants, besides the parterres of "bedding out" flowers, the whole constituting a picture of no ordinary splendour.

Sharing the admiration of the visitors was the large and splendid array of Carnations contained in the glass structures, principally of such varieties as Souvenir de la Malmaison, Mrs. Leopold de Rothschild—a most fragrant and beautiful pink-tinted variety; also the bright pink variety Princess of Wales, a great favourite at Ascott, both of which, with Mr. Arthur Sassoon, the best yellow self, James O'Brien, a beautiful scarlet, and others too numerous to mention, form one of the glories of the place.

Having thus feasted their visual and olfactory organs, the visitors were in readiness for the refreshing and excellent "meat tea" laid out in the cricket pavilion through the considerate generosity of Mr. Leopold de Rothschild, and, as may be readily guessed, the abundant accompaniment of "Strawberries and cream" afforded an additional delectation to the palates of the gratified visitors. A visit to the extensive and

well-kept stables, also the electric machinery department for producing light for the establishment, and other works, was also much appreciated by the visitors.

At the conclusion of the tea a hearty vote of thanks was sent by telegram to Mr. Rothschild in acknowledgment of his kindness and hospitality, also an equally hearty one was accorded to Mr. Jennings for his courtesy and untiring attention. Altogether the day's outing can be regarded as a red-letter one in the annals of the Society.—W. G.

BORONIA POLYGALIFOLIA.

THOUGH many of the Boronias are largely cultivated, this one (fig. 16) is very seldom seen, though it is one of the most useful of the genus. Wherever it has been fairly tried, the highest opinion is held of its merits as a greenhouse or conservatory plant. During the spring and early summer months plants are quite masses of flowers. These are borne on corymbose heads, are of a bright rosy-lilac hue, and last a considerable time either upon the plant or when cut. The growth being very free, the plant will endure hard cutting, a valuable quality in these days when flowers are so largely in demand; and though the colour is not so brilliant or startling as that of some plants, it is a shade that can be readily associated with many others without producing any unpleasant discord. It requires similar treatment to other species of the genus.

COLOUR IN WILD FLOWERS.

As we walk through the fields, the country lanes, and the woods in spring, summer, and autumn, and notice the variety of colour in the wild flowers, the question very often arises in our minds, "What is the commonest colour?" We see fields a perfect blaze of yellow Buttercups, a waving sea of Ox-eye Daisies or a gorgeous carpet of purple Clover, the hedges pink and white with wild Roses varied by the white cymes of the Elder, the green and white of the Guelder Rose, and the pink, yellow, and white of the Woodbine, the banks gay with the pink of the wild Geranium, the white stars of the Stitchwort and the "darling blue" of the Speedwell, and the paths by the roadside thickly matted with the grey leaves and golden cups of the Silverweed.

In the natural order Compositæ, which contains the largest number of genera, out of forty-five different species twenty-five are yellow, nine purple, six white, and two blue, the Chicory or Succory and the Cornflower or Bluebottle. In the next largest order, Umbelliferæ, out of thirty-six species twenty-four are white, three yellow, one (the Sea Holly) blue, and the remainder greenish or pinky white.

In the Cruciferæ out of twenty-six species we find fourteen white, seven yellow, one (the Cuckoo Flower or Lady's Smock) lilac, and the Hedge Mustard, "Jack-in-the-Hedge," white and yellow. Dyer's Woad, now seldom found, is yellow. In the Labiatæ the colours vary very much; white Dead Nettle, yellow Archangel, lilac Mints, purple Thyme and Betony, rose Hemp Nettle, blue Skull-cap, and violet Prunella or Self-heal.

In the Rosaceæ, which includes a great variety of plants, such as wild Roses, Plum, Cherry, Bramble, Hawthorn, Meadowsweet, Strawberry, Cinquefoil, Agrimony, Mountain Ash, Willow Herb, and Enchanter's Nightshade, we find white, yellow, pink, rose, red, purple, and one, the Isnardia, green. In the Leguminosæ, again, we find variety of colour; yellow Broom and Gorse, purple Medick or Lucerne and Clover, white Clover and Melilot, and the rose and pink of Restharrow and Sainfoin.

In the almost universal yellow of the Ranunculaceæ the gorgeous crimson of the Pheasant's Eye is very conspicuous. Poppies are brilliant in scarlet and yellow, our only other really scarlet wild flower being the little Pimpernel, or "Poor Man's Weather Glass." The wild Geraniums are mostly pink, though there is a beautiful exception in the large, bluish purple flowers of the Meadow Cranesbill. The Thistles, of which plant we have twelve species, are all purple. The common Germander Speedwell has flowers of the most perfect blue.

We have seventeen varieties of the Speedwell, and they are blue with three exceptions, the Thyme-leaved Speedwell, the Water Speedwell, and the Ivy-leaved, which are lilac. The Germander Speedwell is sometimes called the Eyebright, but the true Eyebright which grows on downs and heaths has a reddish-white flower. We get a good example of a lilac family in the Mints. While the Scorpion Grasses are all blue—and there are eight of them, the best known being the Water Scorpion Grass or Forget-me-not—one of them, the versicolor, is a yellowish blue.

The flowers of early spring are yellow, the Celandine, Primrose, Cowslip, Daffodil, and Marsh Marigold, varied by the blue Hyacinth, white Anemone, lilac Cuckoo Flower, and purple Violet, followed a little later by the white stars of the Stitchwort, the blue eyes of the Speedwell, and the pink of the Cranesbill. The hedges are white with Blackthorn and May, the copses and plantations fresh and beautiful with the pink and white blossoms of the wild Cherry, Apple, and Pear, and the emerald green of the Larch.

Early summer delights us with wild Roses and Honeysuckle, and paints the river banks with the flaming gold of the Iris, while it spangles the waters with yellow and white Water Lilies. Later summer gives us the rich purple of the Loosestrife, the yellow of the St. John's Wort, yellow Loosestrife, Corn Marigold, Great Mullein, Toadflax, Ragwort, and a host of others, the pink of the Willow Herb, Ragged Robin, and red Campion.

Autumn's cornfields bring with them the purple Corncockle, the pale purple Field Scabious, and the scarlet of the Poppy. Spring might be painted yellow and blue and white, summer yellow and pink, and autumn purple and scarlet and gold.—("Pall Mall Gazette.")

HORTICULTURAL SHOWS.

PRESCOT.—JULY 22ND.

ON Thursday last the thirteenth annual show of the Prescot and District Horticultural Society was held in a portion of Knowsley Park, set apart by the kindness of the Right Hon. the Earl of Derby, K.G. The Park is a charming place in which to hold a show, and with an absolutely perfect day the throng of sightseers was of a very striking character, the day ending by some hundreds of people enjoying themselves by dancing on the green to the strains of the band of the 2nd S.L.V.B., under Bandmaster Hall.

Considering the precarious season the exhibits were of a high order, the groups put up by Mr. McFall, gardener to E. C. Leventon, Esq., Roby; Mr. Ogden, West Derby, and Mr. W. Lyon, gardener to A. M. Smith, Esq., Bolton Hey, Roby, for first, second, and third prizes

FIG. 16.—BORONIA POLYGALIFOLIA.

displaying much diversity, and forming a charming feature of the show. So, too, were the stove and greenhouse plants exhibited by Mr. R. Pinnington, gardener to Mrs. Banner, Blacklow House, Roby, Mr. Pinnington securing the prize for six, in which were noticeable a good Croton Queen Victoria, Cycas revoluta, Allamanda Hendersoni, and Clerodendron Balfourianum. Mr. McFall was second, his foliage plants being good. The order was reversed in class for four greenhouse plants in flower. For four Ferns Mr. Pinnington easily secured first position, Mr. Field, gardener to J. H. Wilson, Esq., Allerton, being second.

The prizes for one stove or greenhouse plant in bloom, two Liliums and six Cockscombs, were also taken by Mr. Pinnington. Mr. Lyon won with handsome tuberous Begonias, also for four Coleus. For Fuchsias, single Begonias, and Zonal Pelargoniums, Mr. E. Bridge, gardener to Mrs. Jowett, Greenhill, Huyton, staged some remarkably good specimens, taking all the prizes. The Gloxinias were excellent, Mr. W. J. Barnes, gardener to J. C. Gamble, Esq., St. Helens, taking honours.

For eighteen cut Roses, distinct, twelve distinct, and six distinct, Mr. P. Greene, gardener to Thos. Gee, Esq., Allerton, won in each class, his blooms being fine in form, colour, and effectively arranged. Mr. W. Rigby was a good second in the former, and Mr. G. Berry in the two latter with fine flowers. Mr. Greene also won with twelve fine herbaceous flowers, and Messrs. J. Appleton and McFall with double and Cactus Dahlias.

For a collection of four dishes of fruit Mr. W. Oldham, gardener to Joseph Beecham, Esq., Ewanville, Huyton, was a capital first, staging Black Hamburgh and Buckland Sweetwater Grapes, Grosse Mignonne Peaches, and good Queen Pine Apple. Mr. R. Pinnington followed. Mr. Oldham was again first for two bunches Black Hamburgh, large in bunch and berry, faultless in form, and one of the best examples of thorough culture we remember seeing. Mr. James Rose exhibited well

for second position. Mr. Oldham won easily with very fine Muscat, a little short in colour, and with small, but nicely finished Madresfield Court, Mr. James Rose following in each class. Mr. R. Pinnington secured first prizes for Peaches with Rivers' Early York, Nectarines with Violette Hâtive, Melon with The Countess, and Cherries with Governor Wood; the prizewinners for Black and Red Currants were Messrs. Oldham and Rose; White Currants, Raspberries, Strawberries, and Gooseberries, Messrs. Rose, J. Brown, and H. McFall.

In the vegetable classes the competition was good throughout. Particular mention must be made of the collection of twelve varieties, all staged by cottagers, Mr. J. Rainford winning with excellent Sutton's Autumn Mammoth Cauliflower, Snowhall Turnip, Prizetaker Leek, Moore's Cream Marrow, Perfection Tomato, Yates' Cucumber, Veitch's Model Carrot, International Potato, Canadian Wonder Bean, Stratagem Pea, Wright's White Celery and Ailsa Craig Onion. Mr. J. Pownall was a very close second, his exhibit being worthy of all praise. For collections of Potatoes, Peas, Broad and French Beans, Cauliflowers, Onions, Turnips, and Carrots, the prizewinners were Messrs. McFall, W. Oldham, W. Lyon, J. Appleton, and J. Rainford. The cottagers' section was marked by the usual high standard of excellence aimed at in former years, and formed not the least attraction of the Show.

TRENTHAM.—July 22nd.

This the ninth exhibition of the Trentham and Hanford Horticultural Society was held on Thursday last in the grounds of Trentham. These gardens have many attractions, and a more beautiful spot for holding a flower show could not be found. Of late years extensive improvements have been made, and all round gardening is carried out in a thoroughly practical manner by Mr. Peter Blair, who has had the responsible charge here for some years. The weather was gloriously fine and the show was well arranged. The quality of the exhibits was first class, and a very large company visited the show. Messrs. Alford and Jones, the Hon. Secs., are to be congratulated upon the business-like arrangement so well carried out by them and the Committee. The show was opened by the Duchess of Sutherland, accompanied by Lady Rosslyn, Marquis of Stafford, Lord H. Grosvenor, the Austrian Ambassador, and the great rosarian, the Dean of Rochester.

The principal features of the show—as is the case now almost everywhere—were the groups arranged for effect in a space of 300 square feet. There were six competitors, and the first prize was worthily awarded to Mr. C. J. Mee, of Nottingham; second, Messrs. Jenkinson & Son, Newcastle, Staffs; third, Duke of St. Albans, Bestwood, Notts; and fourth, Sir Oswald Mosely, Bart. The prizes offered for the four leading ones amounted to £70 10s., but so good were the others that the Judges felt in duty bound to make two extra awards of £5 and £3.

Roses were excellent, and amongst the best we have seen this season. For forty-eight distinct:—First, Messrs. Harkness & Son; second, Messrs. A. Dickson & Son; and third, Mr. B. R. Cant. In the class for thirty-six distinct, Messrs. Harkness & Son, A. Dickson & Son, and Townsend & Co. were the successful competitors. For twenty-four varieties, trebles, Messrs. A. Dickson & Son were first, Mr. B. Cant second, and Messrs. Perkins & Sons, Coventry, third. Twelve Teas:—First, Mr. B. Cant; second, Messrs. A. Dickson & Sons; and third, Mr. H. Merryweather. The Rev. Pemberton took first for twenty-four H.P. and twelve hardy border flowers. The chief prizes for bouquets, bridal, ballroom, buttonhole, all went to Messrs. Perkins & Sons of Coventry.

Fruit was excellent. The class for a decorated table brought forth some spirited competition. First, Mr. McIndoe; second, Mr. J. H. Goodacre, Elvaston; third, Mr. Edmund, Bestwood; and fourth, Mr. Harris, Ledbury. For a collection of six kinds of fruit Mr. McIndoe was first; Mr. Harris second; and Mr. J. H. Goodacre third. Grapes were good, but the Muscats lacked finish. The principal prizes went to fine examples grown by Mr. Reynolds, Gunnersbury House, who was first for four bunches, distinct; three bunches black, any variety; three Muscats of Alexandria; three white, any other kind; two bunches black, one white, the other prizes going to W. D. Drury Lowe, Esq., and Mr. McIndoe. Peaches, Pines, Melons well shown.

Vegetables were splendid. We are doubtful if a finer lot at this season of the year has been seen, especially those shown for the valuable prizes offered by Messrs. Sutton & Sons, the successful exhibitor being Mr. Wilkins, gardener to Lady Theodore Guest, who also took Carter's special prize.

BROOKFIELD.—July 24th.

The thirteenth annual exhibition of the Brookfield Horticultural Society took place at South Highgate, in a field kindly lent for the occasion by W. Burdett-Coutts, Esq., M.P. The object of the Society is to encourage the growth of fruit, flowers and vegetables in the Brookfield Allotment Gardens, and in the cottage gardens of the working classes resident within the district of the Society.

The show was a decided improvement on former years, the number of entries reaching nearly 800, being fifty in excess of the average. Prizes to the value of 35 guineas were offered for cottage gardens, window gardens, plants and cut flowers, and other garden produce. All the classes in the schedule were well filled, the exhibits being remarkably good, comparing well with the produce from a gentleman's garden.

For the allotments, of which there are upwards of fifty plots, each averaging about 10 poles, and each having a strip of flower border on the frontage, twelve prizes are given by the Baroness Burdett-Coutts for the vegetable gardens, and the same number by B. G. Elliott, Esq., Hon. Sec., for the flower borders; other special prizes are given by the residents. The plots are kept and cropped in a manner much above what is usually seen in allotment gardens. In one of the first-prize plots I noticed all the following kinds grown—viz, Potatoes, Carrots, Parsnips, Beet, Turnips, Onions, Leeks, Shallots, Radishes, Tomatoes, Lettuce, Cabbage, Cauliflower, Peas, Broad Beans, French Beans, Scarlet Runners, Vegetable Marrows, Broccoli, Curled Kale, Brussels Sprouts, Herbs, Currant and Gooseberry trees, and Rhubarb. Most of the holders have a small greenhouse or frame for Cucumbers and plants. The flower borders contain Roses, Carnations, Stocks, Pansies, Sweet Peas, Dahlias, Fuchsias, Geraniums, Lobelias, Verbenas, and many good kinds of hardy herbaceous plants. Bee-keeping is also encouraged.

The allotments have been established twenty-one years, and are situated on the property of the Baroness Burdett-Coutts, whose interest in the welfare of the working classes is well known.—William Coomber, 106, *Huddleston Road, Tufnell Park, N.*

THE YOUNG GARDENERS' DOMAIN.

Melons in Pots and Frames.

For an early crop Melons are the best grown in pots. The plants should be transferred from the small pots into 5-inch, and afterwards into the 11 or 12-inch size, leaving ample space for top-dressing. Plunge the pots up to the rims in the hotbed, and give the plants the same treatment as described on page 83 for those planted in beds.

For cultivation in frames make a hotbed of litter and leaves about 3 feet deep, and at least 1 foot wider each way than the frame. Tread firmly, and then place on the frame, with a southern aspect. Sprinkle a small quantity of soil over the bed inside the frame, and place a narrow ridge across the centre. When the steam from the bed is exhausted the plants may be inserted about 2 feet apart. Stop them at the fourth joint, and allow three growths to extend, training them equidistantly over the bed. When the growths have nearly reached the side of the frame they must be topped, also all side shoots at the second pistillate or fruit-bearing flower.

When the fruits have set, thin out those which are not required, allowing each plant to carry three Melons. Remove all sub-laterals, and never allow the foliage to become crowded. Place a piece of board or slate under the fruit to prevent its being disfigured by coming in contact with the soil.

Enemies.—Red spider, with green and black fly are partial to Melons. The former is far the worst, and a constant search should be made for the pests. As soon as they put in an appearance the leaves should be sponged with a weak insecticide. I do not know whether nicotine vapour will kill red spider on Melons without injuring the leaves. For black and green fly syringe the plants with a weak solution of quassia, or fumigate.

Diseases.—Canker, one of the most common, and is caused by keeping the bed too wet, especially near the stems of the plants, and having an over-moist atmosphere. The decay may be stopped, if not gone too far, by rubbing the infected parts with a mixture of powdered charcoal and lime.

Anthracnose.—This is by far the worst disease. It affects the fruit when commencing to ripen. Two years ago I was in charge of a large house that was attacked with this disease. It was observed by two of the fruit turning a paler yellow than was desirable. Upon examination a dark spot, about the size of a sixpence, was found upon the under side, and inside fermentation had commenced. A day or two afterwards, two or three more began to go, and upon examining the crop we found the majority infected, some of them on the top side. At first we thought it was a bacterial disease, but afterwards ascertained that it was anthracnose, a disease caused by the fungus Gloeosporium.* Several remedies were tried, but all proved failures. One of them was rubbing the infected parts with lime. This prevented the dark spot from spreading, but not the inside from fermenting. Out of 180 Melons in the house only about eighty were available for dessert. The house was given a thorough cleansing, and a fresh start made with new seed, and no trace of the affection appeared again. Since then I have eagerly scanned the horticultural papers to see if any remedy was given, but as yet nothing has appeared, nor any reference to the subject. Perhaps Mr. Abbey may afford us information.—Elveden.

Means and Modes of Propagating Plants.

(*Continued from page* 83.)

Sometimes the underground portion of a plant assumes the form and functions of a stem to a certain extent, running sometimes above ground and partly below ground, but generally the latter, and sending up shoots into the air from the upper surface and roots into the ground from the surface below.

When the stem assumes this root-like form, as it does in Ginger (Zinziber officinale) and Solomon's Seal (Polygonatum), it is called a rhizome, which means "that which has taken root." The Primrose and kindred plants afford examples of natural propagation by rhizomes, for the stem of the Primrose instead of being upright and ascending, as in the great majority of plants, and attached to the roots below ground by a collar, is an underground stem, or nearly so, thrust forth laterally from the plant, and from this the leaves and blossoms immediately grow, and the roots issue, taking a downward course into the earth.

* Our correspondent does not say by whom the precise nature of the disease was "ascertained." The "ferment" in the diseased parts of some Melons has been found to "swarm with bacteria."

In other plants Nature has resorted to an entirely different kind of propagation. In these a loose trailing branch or stem, called a stole or stolon, is sent forth from the plant at the summit of the root, just where the leaves spring from the stem. This branch or stem proceeds from the original plant to some distance, and then takes root downwards and sends forth leaves upwards, frequently continuing its growth beyond the first attachment to the soil and rooting at intervals, forming a new plant at each rooting. Plants that propagate themselves in this manner are called stoloniferous. The Strawberry affords a familiar example.

Speaking broadly, natural propagation is effected by the development of a bud which proceeds from some portion of the plant, either root or stem, as the case may be—that is, below the surface of the ground, or from the stem proceeding from it at a point just above the surface. Examples have been already given. No matter what may be the mode of propagation that Nature selects, the offset, when ultimately separated from the parent plant, assumes a separate existence, and becomes an independent plant, similar in every respect to that from which it sprang. Thus the suckers thrown up from the root of a Rose or any shrub that throws up shoots of this kind from below ground, when detached with a portion of the root, will speedily form new and strong plants.

The rhizome of the Primrose and Polyanthus may be removed from the parent plant, and will soon send forth roots under favourable circumstances, if it be not already rooted before removal; and when the new plant springing from the stole of the Strawberry is once attached to the soil by roots of its own, the connecting link between parent and offspring may be cut away, rendering the latter dependent on itself for obtaining a supply of nourishment through its own roots. Every plant is provided by Nature with a suitable means of reproduction, whether by seed, sucker, stole, or rhizome.—C. W. M.

(To be continued.)

HARDY FRUIT GARDEN.

Watering and Mulching Fruit Trees.—Fruit trees and bushes having abundance of roots near the surface of the soil are benefited at this season by a copious watering, followed by a mulching of short manure. It is not advisable to water fruitless trees too freely, providing they are well established and making satisfactory growth. Weakly trees and those recently planted will almost certainly need the soil moistening, so that the roots may have a chance of extending and multiplying. After this has been done, immediately apply a mulching in order to conserve the moisture as long as possible.

Wall trees mostly require applications of water frequently; young trees advancing in size and older trees bearing crops should receive adequate supplies of clear water first, in all circumstances where the soil is very dry. If more support is needed, either to increase the growth of wood or to improve the size of the fruit, liquid manure may be given, but not to dry soil. Wall trees well established with their roots deeply in the soil do not suffer from dryness to the same extent as the more surface rooting trees. A mulching, however, to them will be beneficial.

Destroying Red Spider on Wall Trees.—Peaches, Nectarines, Apricots, and Morello Cherries that produce their fruit on young wood which is reserved one season for fruiting the next are frequently subject to attacks of red spider. This pest infests the leaves, abstracting from them their juices, preventing the buds in their axils receiving the nourishment and support required. Trees attacked in this way are evidently dry at the roots. Possibly they may be crowded with other trees, which drain away food and moisture from the soil. Insects, including red spider, soon attack impoverished trees The best remedy is to loosen the surface soil and give a liberal application of water to reach the lowest roots. Then syringe the trees with a solution of 2 ozs. of softsoap to a gallon of water, mixing in a little sulphur formed first into a paste with water. Syringe the trees vigorously with this, repeating the application several times; also use plenty of clear water. Thin out crowded growths.

Strawberries.—*Cleaning Beds and Propagating.*—As the fruit is finished gathering from Strawberries proceed to clear the beds of weeds and runners. If any plants are required for forming new beds the most promising plants or plantlets should be retained. The latter, not having rooted into the soil, may be thrown on one side without detaching them from the parent plants while the ground is being cleared of superfluous runners and weeds. Loosen the soil with a fork, adding, if necessary, a little fresh material to mix with the staple. Secure the plantlets upon this to form roots; water and prevent them being crowded, eventually lifting and planting. Those already rooted must have the surrounding runners thinned out, giving the selected plants room to develop.

Mulching.—After the clearance of superfluous growth from between the rows, should the soil be bare and hard slightly break the surface, then spread a layer of short half-decayed manure. It will tend to keep the roots cool and retain the most fibrous near the surface, where they can spread in the rich medium furnished by the mulching. Strong and healthy fruiting plants will be benefited by the additional support which this treatment affords, and it would materially assist any not making sufficient growth.

Young and vigorous growing plants, however, not having arrived at a fruiting stage might be induced to grow too vigorously with such generous treatment, and it may be advisable to apply it to them but sparingly, provided they were planted in good well manured soil, but a thin top-dressing of some light material can be spread as a summer mulch to prevent evaporation from the soil.

Destroying Old Beds.—After the third or fourth year Strawberry beds are not so profitable as younger plantations. Hence it is desirable to plant a fresh bed every year and destroy the oldest. The beds for destruction should be decided upon immediately fruiting is over. The plants may be chopped off close to the soil, allowed to wither, and then be burnt. The ground they occupied will be greatly improved for whatever crop is to follow by trenching. Avoid planting Strawberries immediately on the same plot of ground if possible.

Preparing Soil for Planting Strawberries.—Deep culture and liberal manuring previous to planting are the foundations of success. Ground not naturally rich, deep, and fertile can be improved by trenching and the addition of manure. In trenching a hungry subsoil must not be brought to the surface and the good soil buried. Preserving the layers of soil in their original position is usually the best plan, but the whole ought to be moved and the bottom well broken up. It is best to prepare some time previous to planting, in winter or early spring. Some early matured crop, such as early Potatoes, may then be taken, which will leave the ground in excellent condition for planting.

FRUIT FORCING.

Vines.—*In Pots for Early Forcing.*—The canes for starting in November, to ripen Grapes in March or April, ought now to have the wood thoroughly ripe and the buds plump. If not, keep the house rather warmer by day, 80° to 85°, closing early so as to raise the temperature to 90° or 95°, and throw the house open at night. The foliage must be well exposed to light, and as near the glass as possible without touching. Supply water or liquid manure in the case of Vines not inclined to luxuriance in sufficient quantity to prevent the foliage becoming limp, but do not give it until the soil is getting dry.

Lateral growths must be kept in check, leaving no more than are absolutely necessary to appropriate any excess of sap, and so prevent the principal buds starting. When sufficiently ripened, as they are when the wood becomes brown and hard and the eyes are prominent, they should be removed to a position outdoors in the full sun, standing them on boards or slates in front of a south wall, fence, or building, securing the canes to the face of the wall, only giving water to prevent the leaves falling prematurely, and having some waterproof material at hand to throw the water from the pots in case of heavy showers occurring. In this position they will rest, even if the leaves are not actually shed, provided they are not kept too moist. When the leaves turn yellow commence reducing the laterals, and when the foliage is all down cut them close to the cane, but without injury to the buds, and shorten the Vines to the length required, or from 6 to 8 feet. Dress all the cuts carefully with styptic or patent knotting. The Vines should be placed in any cool, airy, dry place until required for forcing. Though dryness at the roots is desirable, the soil must not be allowed to become dust dry, and the pots must be protected from frost by some dry material placed round and over them. It will not, of course, be necessary if frost has not access to the house.

Earliest Forced Planted-out Vines.—A dry atmosphere is now necessary, not so much to ripen the wood as to induce rest. All laterals must be kept stopped and the house cool, with moderate dryness at the roots. The inside border may require water, for it is essential that the roots be kept healthy, and the soil not allowed to crack, but if the border has been mulched watering may not be necessary. A moderate extension of the laterals will be sufficient to keep the principal foliage in health. Where the Vines are in an unsatisfactory condition preparations should be made for lifting, getting fresh loam and clean drainage, so that the work can be quickly done when begun. One part of the border only need be operated upon at once, the inside one year and the outside the next. This prevents loss of crop. The roots should be lifted and laid in fresh soil nearer the surface whilst there is foliage on the Vines; therefore work of this nature ought not to be delayed beyond the early part of September in the case of Vines that ought to be started early in December. The Vines will need pruning by the middle of September or, when lifted, a little later.

Houses Required for Early Forcing.—Vines that have not been forced early hitherto, and are required for that purpose, will, as soon as the crops are off, need to be thoroughly syringed to cleanse them from pests, applying an insecticide if necessary, and if there is any doubt about the ripeness of the wood or the plumpness of the buds it will be necessary to keep the house rather close by day, but with sufficient ventilation to cause evaporation and allow the moisture to escape. Give no more water than will prevent the foliage becoming limp. If the weather prove wet and cold employ fire heat in the daytime to maintain a temperature of 70° to 75° with moderate ventilation, and turn the heat off at night to allow the pipes to cool, increasing the ventilation so as to induce a thorough draught, and this will soon cause the wood to harden and the buds to plump, insuring rest, which for Vines to be started in December should be complete from the middle to the end of September. When the wood is ripe ventilate fully day and night.

Vines Cleared of Grapes.—Through crops hanging after being ripe the Vines often become infested with red spider, and by growing plants in the house they are sometimes attacked by scale and mealy bug, the dry atmosphere encouraging thrips. Thoroughly cleanse the Vines, fumigate on two or three consecutive evenings for the thrips, and repeat in a week or ten days; syringe forcibly two or three times to eject red spider. Mealy bug and scale may be eradicated by syringing with the following solution:—Softsoap, ¾ lb.; water, ½ gallon. Dissolve by boiling, and while hot add 1 gill (¼ pint) petroleum, stirring briskly till emulsified; then dilute 6 gallons with hot water, and when cooled to 100° apply with a syringe, wetting every part of the Vines. Repeat in the course of four days or a week, and again at a similar interval. Have the laterals fairly in hand, not closely pinched, unless the Vines are very vigorous and not ripening the wood kindly, when keeping the house rather dry at night, with all the ventilation possible, and somewhat close and warm by day, will promote the ripening of the wood and buds. In stopping vigorous Vines regard must be had to the principal leaves and buds, for when all the growth is removed as made and the leaves injured it may cause the pruning buds to start, which must be avoided by allowing a little lateral growth and keeping the soil dry at their roots to the extent of causing the foliage to become limp. Weakly Vines may be fed with liquid manure and the laterals allowed to extend, but whatever extension is permitted the extraneous foliage must not in any way interfere with the free access of air and light to the principal leaves, which must be kept healthy, and thus appropriate some of the food and store it in the buds and adjacent wood. Free ventilation will be necessary day and night.

Grapes Ripening.—Whilst ripening Grapes swell considerably, therefore do not allow any deficiency of moisture in the border. Give if needed a good supply of water or liquid manure, and in the early part of the day, so that superfluous moisture may be dissipated before night. Heavily cropped Vines require time and copious supplies of liquid manure, which if it does not help the current crop, will prevent the exhaustion of the Vines. A good rest at night in a temperature of 60° to 65° with air is a great aid to Vines taxed to the utmost by weight of Grapes. A moderate amount of air moisture also is essential to the health of the Vines, sprinkling the paths and borders occasionally, and if possible allow the laterals to extend, but full or overcropped Vines rarely can cater for more than the principal leaves and Grapes. Admit air constantly, enough with a gentle heat in the pipes to insure a circulation, and maintain a temperature by day of 70° to 75°, keeping through the day at 80° to 85° or 90° with sun and full ventilation.

Melons.—*Late Fruit.*—A sowing should be made to afford very late Melons. The plants will be fit to plant out in about a month, they will set fruit in September, and that will be ripe in November. A light airy structure, well heated, is essential with high culture for this crop. Bottom heat is necessary, and is best afforded by hot-water pipes, but if had from fermenting materials they must be thrown into a heap, watered, and turned, so as to insure the needful fermentation, and escape of rank steam.

Early Autumn Fruit.—Good looking fruit is always esteemed, if only from a decorative point of view, and when the quality is of a high order the advantage is duly appreciated. To have fruit in October the plants must be planted out at once, giving them about a barrowload each of soil made into a flattened cone or ridge about 10 to 12 inches deep in the centre. Rather strong loam, with a fifth of sweetened horse droppings, and a sixth of old mortar rubbish, form a suitable compost. Make this quite firm, and have it in a moist state before planting. Turn the plants out carefully, watering them overnight, so that the roots may come freely from the sides of the pots, and make the soil firm about the ball. Keep the stem slightly raised, and water to settle the soil about the roots. The plants must be encouraged to make a free growth by syringing at closing, and damping the paths and walls in the morning and evening of hot days. Ventilate between 70° and 75°, and keep the temperature through the day at those degrees by artificial means, 85° to 90° from sun heat, and close so as to raise to 95° or 100°. Through the night the temperature may fall to 65°.

Fruit Swelling.—The ultimate result must be kept in view from the start, as sturdy plants only can produce fine fruit, and this may be spoiled by overcropping the plants. When the fruit is fairly swelling the crop should be reduced to two on a weakly, three on a moderately vigorous, four on a strong, and six on a large plant. Overcropping is very prejudicial to the plant's health, and unless the foliage is kept in good condition to the finish high quality, which mainly depends on solidity through the high elaboration of the juices, cannot be expected; therefore keep the foliage fairly thin, all having full exposure to light. Earth the roots, giving copious supplies of water or liquid manure, and damp the paths with liquid manure twice a week, but it is best to give it often and weak. The drainage of stables, not containing washings, should be diluted with five times the bulk of water.

Fruit Ripening.—The atmosphere should be kept dry, and a top heat maintained of 70° to 75° by artificial means, admitting a little air constantly, a circulation of rather dry warm air greatly improving the quality and finish when the fruit is ripening. Water should be withheld from the house unless there is fruit advanced in swelling, when an occasional damping will be necessary for the benefit of the foliage.

Plants in Pits and Frames.—The latest plants will be setting their fruit, it being important that the fruit be set at the close of July or early in August to allow time for its swelling and ripening. Give a good watering, if necessary, before the flowers open, and line the sides of the bed and frame with hot dung, or the mowings of lawns, and give a little ventilation constantly at the top of the lights until the fruit is set and commences swelling. This prevents the deposition of moisture on the blossoms and insures a good set. Fertilise the flowers daily, and when sufficient are set, and the fruit swelling of about equal size, remove all flowers, and keep the growths thin and well stopped, maintaining a warm moist atmosphere, but not stagnant, by early closing with sun heat. Sprinkle the foliage on fine afternoons, and afford water in bright weather about twice a week.

Cucumbers.—Where it is desired to have fruit in the autumn and onward through the winter, seeds may be sown early in August, and the plants being ready for planting early in September, they will, in a light, well-heated structure, with a good bottom heat, give fruit through the autumn months, and, not then being overcropped, continue in bearing during the winter, a succession of bearing wood being maintained by cutting out exhausted and training in young for the purpose. The soil for growing them where eelworm has been troublesome should be disinfected, there not being anything cheaper or better than soaking with boiling water. This acts admirably, so also does mixing with the soil about 5 per cent. of best chalk lime, using it when freshly slaked, and mixing with the soil as evenly as possible. Allowed to lie a month to six weeks, it renders the turf mellow and in excellent condition for use.

THE FLOWER GARDEN.

Bedding Antirrhinums.—The white bedding variety forms a very attractive bed, the flowering period being fully equal to that of the majority of other plants used. Several newer forms suitable for bedding have also been introduced. In order to have strong plants ready for planting early next season, and which only can be depended upon for a good effect, propagating should commence now. Short flowerless shoots, slipped off from old plants, will root readily in a cold frame or hand-lights at the foot of a north wall or other cool and not too dark position. Dibble three or four of the cuttings round the sides of 3-inch pots filled with gritty loamy soil, give a gentle watering, and keep close and shaded during the hottest part of the day till they are rooted. Some could be wintered in pots, and the rest planted in sheltered nursery beds.

Antirrhinums from Seed.—The white bedding and other named Antirrhinums come quite true from seed, and this is the readiest means of raising a large number of plants. Now is a better time for sowing than early next year, and this season's seed will germinate more strongly than older seed. Sow the seed thinly on the surface of previously moistened pans of light sandy soil and very lightly cover with fine soil. Cover with a square of glass and either moss or paper, and place in a cool frame or hand-light at the foot of a north wall or fence. When the seedlings are large enough prick out in boxes of light soil. Being fairly hardy, some may be planted out in nursery beds and the rest be wintered in a cold frame.

Pentstemons.—These again are seldom very effective the same season they are propagated, but plants raised now from either cuttings or seed would do remarkably well next summer. Both cuttings and seeds should be treated exactly as advised in the case of Antirrhinums. Where hardier bedding plants are preferred to the more tender kinds, Pentstemons ought certainly to be given a place. Strong old plants are most suited to mixed borders, but late summer or autumn raised plants placed out early into large well prepared beds and lightly staked up would prove quite a feature in the display. A mixture of Pentstemons and Nicotiana affinis is both bold and pleasing. As many as are wanted should be wintered in cold frames or pits, as a very severe winter is sometimes fatal to most of the exposed plants.

Tuberous Begonias.—If short flowerless side shoots of these are made into cuttings, dibbled rather thickly in pans or boxes of fine sandy soil, set in the full sunshine and sheltered from heavy rains, the majority will strike root and form tiny tubers before the tops die down. Left where they are, and stored in a dry cellar or shed where severe frosts cannot reach them, these small tubers will winter well and be very handy for bedding next season. Now is also a good time to sow seed with a view to having abundance of small tubers to make an early start with next season. Quite new seed will germinate very quickly and strongly, and this should be preferred, though last season's seed will not fail if sound at the time of sowing. Prepare several pans or boxes, by careful draining and filling up with fine light sandy soil. Make the surface very level and firm, but do not sand over, give a gentle watering, and about one hour later sow the seed thinly, quite on the surface, no covering over being attempted. Place in a cold frame on inverted pans or pots with a view to excluding worms, cover with squares of glass, and shade heavily. The soil must be kept uniformly moist, not by waterings, but rather by partial immersion in a tub or tank of water, the one thing to avoid being the disturbance of the germinating seed. The seedlings will not make much growth, but if undisturbed will form tubers near the size of Radish seed. Such, if kept plump till next March, will be available for growing into strong plants by the time they are wanted for the flower beds.

Chrysanthemums.—If there are any bad failures in the flower garden, and the late hot and dry weather proved very trying in many cases, some of these might be made good by either planting out or transplanting Madame Desgrange and Mrs. Hawkins. Both of these varieties are very sturdy and floriferous this season, and perhaps would do better service in the flower beds than under glass. If planted in a sloping direction, the tops well spread out, and lightly pegged or

tied down, either variety would form a good groundwork for a few rather tall Cockscombs. A bed or beds thus filled would rank amongst the most attractive feature in a garden.

PLANT HOUSES.

Bignonia grandiflora.—In 5-inch pots this plant flowers profusely, and is very useful for various decorative purposes. Cuttings of young wood root freely in houses where a fair amount of moisture is maintained. The plants should be well ripened and rested in a cool house. When started into growth in the spring an intermediate temperature suits them well if fully exposed to the sun. The wood made must be firm or else the plants fail to flower.

Gloxinias.—Plants raised from seed sown late in the spring and now in small pots should be transferred into others 4 and 5 inches in diameter, according to their size. These, if shaded from bright sunshine and grown close to the glass in cold frames, will make excellent decorative plants a few months hence. Few plants when well grown are more effective. By starting the tubers at intervals of a month and raising seedlings a very long succession of bloom can be obtained. Plants that flowered early and have enjoyed a good season of rest may be started again into growth. They will soon commence to grow in any structure that is kept moderately close. The plants may be flowered in the same pots.

Tuberous Begonias.—Seedlings may be grown in cold frames, for although they may appear to be late they will make wonderful progress, and flower profusely during October and November if placed in a warm house close to the glass where the atmosphere is kept moderately dry. The flowers of these Begonias are very useful for house decoration. They are easily bruised, and therefore do not travel well.

Nertera depressa.—This is really a charming little plant when well grown and covered with its coral-like berries. Plants that have berried well and have started again into growth may be broken up and dibbled thickly into small pots or pans, the latter being best when needed for table decoration. This plant grows freely in any light moderately rich soil, and should be kept moist until well established in an intermediate temperature. By autumn the surface of the pots or pans will be covered with growth, and if well watered we find the plants winter well on shelves where the temperature does not fall below 45°. In spring a fair amount of air and full sunshine should be afforded them, when they will be found to berry freely.

Celosias.—Plants for autumn and winter now in 3-inch pots may be transferred into 5-inch without delay. Grow the plants in frames where they can enjoy a liberal amount of air. They should not be hurried in their last stages, or they will be almost certain to damp at the base when arranged in conservatories and other structures.

Asparagus deflexus.—However effective and useful other varieties of Asparagus may be for furnishing in pots and for supplying greenery for cutting, A. deflexus is a handsome basket plant. It is very distinct in appearance, and its fairly long feathery shoots droop gracefully over the sides of the basket. This is certainly a great acquisition to the numerous basket plants at disposal.

Epiphyllums.—These, if assisted by gentle warmth to make their growth, should now be fully exposed to the sun, and at the same time be given abundance of air. They flower profusely when the growths are thoroughly ripened, which is best accomplished by exposure to light and air, and not by the barbarous system of drying them at their roots until the plants shrivel. Where stage room is limited these plants do well grown in pots suspended from the roof by means of wire. In this position they do not suffer so quickly from the drying conditions of the atmosphere as many other plants. Even in baskets the plants do very well, providing they are not overwatered. If strong stocks of Pereskia are at hand they may be cut into lengths and inserted in small pots. If pieces of Epiphyllum are attached on the top and then stood in the propagating frame they will unite by the time the stocks are rooted. Grafting is easily effected by splitting the stock at the top and the removal of the bark from the scion, or by placing pieces on each side after removing a portion of the stock, so that the two barks come together. When placed on each side of the stock, and each scion pointing outwards, they form good shaped heads much quicker than when one piece only is attached.

MISSOURI BOTANICAL GARDEN.—The Trustees have decided to to add 100 acres to these gardens, and plans are being prepared by the Messrs. Olmsted of Boston. The work of making extensions and improvements will begin during the present summer, and will cover a period of five years. This season will be devoted to grading and the laying of water pipes. Next year the planting will begin. The year following the walks will be laid out. The fourth year the herbaceous plants will be put in, and in the fifth year the work of preparation will be completed. The proposed improvements are the beginning of an entire remodelling of "Shaw's Garden." The instructions given to the Messrs. Olmsted were—first, for a general plan for improving the farm land adjoining the garden; second, a detailed plan for the North American synopsis, and a small department of medical botany; third, suggestions for the gradual modification of the present park to harmonise with the improvements. According to a contemporary, Professor Trelease, who has embodied the plans in his forthcoming annual report, considers that the improvement will place these gardens in a foremost position among the famous botanical gardens of the world.

THE BEE-KEEPER.

REMOVING SUPERS.

SUPERS will now require attention, as it is not advisable to allow them to remain on the hive after they are properly sealed over, or the combs will soon become discoloured, and instead of being of pearly whiteness the cappings will be dark in colour. This is very objectionable, whether they are required for exhibition, home consumption, or marketing purposes. It is not always possible to have all the cells filled with honey, as a sudden change in the weather will often cause the bees to leave the supers and cluster in the body of the hive; but with the perfect bee weather experienced during the past fortnight there can be no excuse on the part of the bee-keeper if supers are not in good condition.

Sections that are well sealed over should be removed from the hive without delay. If there are a few cells not properly finished off place them in the middle of the crate and allow them to remain a few days longer, then in all probability they will be in a fit condition for removal. This is important, as the unsealed cells will drip, which is often a just cause of complaint from dealers who have the handling of them, and prevents them stocking a supply of sections as often as they would if they could always rely on them being dry and otherwise in good condition. It is now too late (except in Heather districts) to fill up the vacant space in crates with empty sections. The bee-keeper's aim should be to endeavour to obtain as many well-finished sections as is possible. This can only be done by placing the partly filled sections close together directly over the brood nest, the empty space being filled with some warm material to prevent the escape of heat from the hive.

REMOVING GLASS SUPERS.

Although glass supers are now not nearly so common as formerly, when the majority of bees were kept in straw skeps, still many bee-keepers who manage their bees according to modern ideas have a fancy for at least one glass super in their apiary. This is not to be wondered at, for what is more interesting to many people other than bee-keepers than a well-finished bell-glass of honey?

Many of those that are in use for the above purpose are most inconvenient for table use, the combs having to be removed bodily and placed on a dish or something similar. The most useful bell-glass that I have used for that purpose was obtained from Messrs. Neighbour & Son, High Holborn. It is circular in shape with straight sides, which are about 9 inches in depth, a lid with a knob on top is supplied with it, which gives it a very handsome appearance when placed on the table. The lid also prevents flies from gaining access to the honey, which is a great advantage when stored away.

Before attempting to remove a bell-glass from the hive a piece of fine wire or string should be drawn under the glass so as to cut through the comb, which will be fastened to the board on the top of the hive. When this has been done place some thin wedges of wood under the super so as to leave a clear space between the comb that has been severed, otherwise the bees would connect them again, but not of sufficient height to allow the bees to escape. Cover the super again and allow it to remain on the hive for at least two or three hours, which will give the bees ample time to clear up the dripping honey. The combs will thus be dry and the super may be handled with impunity.

On removing the super carry it bottom upwards some distance from the hive. If the glass is darkened by being wrapt in some of the coverings from the hive the bees will come to the light, when they may be brushed off with a feather, and will at once fly back to their hive. If the bees will not leave the super freely a little smoke blown into the glass will cause them to do so. It is better, however, not to use smoke if it can be avoided, as it may give an unpleasant flavour to the honey.

CARBOLIC *versus* SMOKE.

In handling bees it is necessary to have something at hand for quieting them. It is, however, a disputed question what is best for that purpose. For general purposes I prefer a Bingham smoker, and I know of nothing better when examining stocks in the spring. If the weather is warm it is often not necessary to use anything at all, but if the bees are inclined to be troublesome a gentle puff or two from the smoker will quiet them. Afterwards when removing supers, either full-sized frames or sections, I now make it a rule never to use smoke in any form, as a carbolic cloth is much better. This is very simple in preparation and use. All that is required is a piece of unbleached calico, slightly larger than the top of the hive intended to be operated

on, sprinkle the calico with a few drops of carbolic, and it is ready for use. First remove the covering from the top of super, and lay the carbolic cloth in its place. The bees will at once beat a retreat, and in a few minutes the super will be quite clear of bees, and the most timid bee-keeper may handle them with impunity. For this purpose carbolic cloths are strongly recommended, but a smoker is preferred when examining the brood nest, as if carelessly handled the carbolic would drive all the bees from their hive.

But whatever bee deterrent is used it is well to bear in mind that it is often quite unnecessary to use anything. Careful handling is essential to success, and the less bees are examined the better. A bee-keeper who has only two or three stocks will often spend more time manipulating them than another who has ten times the number, the former half suffocating the bees with smoke, whilst the latter who has his smoker handy will use it only when really necessary, and the bees are less disturbed in consequence.—AN ENGLISH BEE-KEEPER.

GARDENERS' CHARITABLE AND PROVIDENT INSTITUTIONS.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—*Secretary*, Mr. G. J. Ingram, 50, Parliament Street, London, W.C.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—*Secretary*, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

ROYAL GARDENERS' ORPHAN FUND.—*Secretary*, Mr. A. F. Barron, The Royal Gardeners' Orphan Fund, Chiswick, W.

TO CORRESPONDENTS

*** All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," *8, Rose Hill Road, Wandsworth, London, S.W.* It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects, through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Propagation of Conifers (*J. Thompson*).—You will find on page 91 an article on the propagation of Conifers and shrubs which is certain to be of assistance to you. It is from the pen of a thoroughly practical man, and the information is reliable.

Seedling Carnations (*W. Pearce*).—Owing to your flowers being wrongly addressed they were so much shrivelled when they reached us that it was impossible to form any reliable judgment as to their merit. When sending in future kindly comply with the directions printed weekly at the head of this column.

Pear Tree Leaves Eaten (*W. Fry*).—The "sort of caterpillar" which has been grazing on the leaves you have sent is known as the slimy grub or Pear slug, the larva of the Pear saw fly, Selandria atra. The slime on the body is not dried by exposure to the hottest sun. This covering is, however, cast as the season advances, and the grubs are then clay coloured. They form cocoons in the autumn, rest in the soil, and from them the perfect insects emerge the following summer, the females depositing eggs on the upper surface of the leaves, from which the grubs are hatched. We have found, as have others, that dusting with freshly slaked lime destroys the grubs. We have also found it decidedly advantageous to remove 3 or 4 inches of surface soil from around the trees, give a good dressing of lime and soot, covering with fresh soil. If you find petroleum and soapy water the best remedy, and the mixture does not injure the leaves, by all means use it. Perhaps a few light sprayings in June and July might prevent the flies depositing eggs. It is generally safer to apply petroleum mixtures in the evening than in the morning, because if hot sun follows while the leaves are wet they are liable to be scorched.

Seeds for Chiswick (*Brassica*).—The proper course to pursue is to write to the Secretary, Royal Horticultural Society, 117, Victoria Street, Westminster, on the subject.

Unknown Plant (*S. J. A.*).—If you can oblige with the botanical name of the plant, so that we may be able to identify it, we shall be glad to give you any information we can on its cultivation. Good King Henry is one of the fanciful names of the Lincolnshire Mercury (Chenopodium bonus Henricus), but we doubt if this is the plant you have in mind.

Paraffin-Napthalene Emulsion (*K. J. N.*).—We are unable to give you the desired information. The preparation, as you say, is "not advertised," and we really do not know whether it is on sale generally or not. The "Patentee's" letter gives you as much information as we can, but he, as he stated, is not personally interested in the sale of the product. We do not know the address of the proprietor.

Early Rivers Nectarine Splitting at the Stone (*W. H.*).—This variety has been so short a time in commerce as not to enable us to say if it is accustomed to this serious defect. The specimens have not come to hand, hence we cannot form any opinion as to what caused the splitting. In your case it may be due to the tree being overfed in the later stages of swelling, the roots of the tree then only having got extensive possession of the soil, and transmitted more nutriment than could be utilised; hence the cracking of the flesh and splitting of the stone, both too hard to bear the tension and growth of new cells. See "Peaches Decayed and Hollow," page 86.

Cucumber Plant Diseased (*T. A.*).—The fine plant and excellent specimen for examination was found perfectly healthy in the leaf and stem, also on the root-stem for 6 inches or more downward from the collar of the plant, and even the main lateral roots were quite normal. The small roots or fibres are knotted, numerous small knobs being on them, and the effect of this is to arrest the ascent of the nutrition absorbed by the young fibrelets, in consequence of which the foliage of the plant becomes sickly in appearance, and this results in gradual collapse. In the knobs were eelworm, fine examples of Tylenchus devastatrix, *Kuhn*, and its cysts or eggs in various stages of development. We advise you to use Little's soluble phenyle in the proportion of 1 gill (quarter pint) to 3 gallons of rain or soft water, applying as in an ordinary watering. It may be necessary to repeat the application occasionally, and in such cases half the strength suffices. The soluble phenyle acts as a manure, besides compassing the destruction of the eelworm. Nitrate of soda, quarter ounce to a gallon of water, also acts well against the eelworm, especially when used in conjunction with soluble phenyle (see article by Mr. W. Iggulden in our issue of February 18 h, 1897, page 130).

Woodlice in Eucharis Pots (*Subscriber*).—The fact of the soil, which was scorched before using it for the Eucharises, being "full of woodlice," suggests that it has been kept more than ordinarily dry, and too dry, we are inclined to think, for the well-being of the plants, while favourable to the increase of their enemy the mite. We have never known woodlice to swarm in soil which is kept sufficiently moist for the h alth of Eucharises. We should give the plants a good watering to "swell" the soil, then follow with clear soot water of the colour of pale ale. This would not be palatable for the woodlice, which would find means of escape, while it would benefit rather than injure the plants. The best thing to do, then, is to catch the pests. The old plan of placing a boiled Potato in each of a few flower pots, covering rather thickly but somewhat loosely with dry hay, and laying the pots where the woodlice abound, will attract many of them. Another simple method is to take two dry dirty old boards and place them face to face, with just sufficient room between them for the pests to enter. We have seen thousands of the woodlice caught in this way, and ended in a moment by casting them into boiling water. It is said that a sprinkling of oatmeal or crumbled potato on the lower board causes the pests to congregate the more quickly. By perseverance in the methods proposed you may clear the house of woodlice.

Madresfield Court Grapes Diseased (*Grower, Darlington*).—The leaves and berries are attacked by anthracnose fungus (Sphaceloma ampelinum), but in a very mild form. The tendency to crack is also accelerated in the berries, as appears in your specimen. There are not any "fruits" of the fungus on either of the leaves or berries, but there will probably be some borne on the young wood. They appear as minute pustules on the epidermis, through which the spores push and are scattered far and wide. That the atmospheric conditions of our vineries are unfavourable to their germination is evident from its attacking some varieties in the same house and leaving others, evaporating more freely, severely alone. It appears to prefer light coloured or somewhat delicate varieties, especially those not in vigorous health. The treatment advisable is to cut off all injured canes during winter, as will be done in pruning, and burn them. When the house has been cleansed in the usual manner dress the Vine, with all the rods in the house, with a solution of sulphate of iron, 1 lb. to 1½ gallon of water, applying with a brush to every part of the rod, not missing any part, but taking care not to injure the buds. Do not practise peeling the rod, as the iron sulphate on raw bark may sink in and do mischief, but we have not found any result. It must be used whilst the Vine is quite dormant, but preferably just before the buds start. It is needless to say that all fallen leaves should be removed and burnt. As a further preventive measure you may dust the Vine with a powder formed of equal parts best chalk lime, air-slaked, and flowers of sulphur when the leaves are fairly formed. We find the sulphate of iron quite sufficient. Use fertilisers freely.

Cockscomb Plant Diseased (*C. B.*).—The plant is perfectly healthy at the roots, bnt infested in the leaves and "comb" by a minute insect or rather mite, which affects Pelargoniums, especially Ivy-leaved and Zonal, and is a very malignant pest on Begonias, Gesneras, and Gloxinias. It is somewhat difficult to find, but its bite appears to be very poisonons or injurious, as the attacked foliage becomes rusted and browned, as if injured by some corrosive substance, and Begonias oftentimes cast their leaves altogether, especially tuberous-rooted. There is no preventive or remedy but frequent fumigation with tobacco paper, or vaporisation with nicotine essence. Of course insecticides in the form of washes are equally effective, but you must know what effect these have on hairy-leaved plants, and exercise judgment accordingly.

Tomato Fruits Diseased (*F. J.*).—The fruit are affected with "spot," "blotch," "black stripe," or Tomato rot, which we are now in a position to say is the fungus known to botanists as Macrosporium tomati. The malady usually becomes first noticeable when the fruit is about half grown, appearing at the blossom end, commonly as a depressed blister, due to scorching; but oftentimes the disease appears earlier as a small blackish spot or stripe, which increases in size as the affected Tomato develops. The flesh beneath the spot is destroyed by the fungus, causing the fruit to become flat on the top, and the inside of the Tomato is blackened, some of the seeds destroyed, others only partially so. In some cases, and always ultimately, the fungus involves the interior of the fruit entirely, producing a shrivelling and blackening, and finally a rotting. Now as to preventive measures—(*a*) Use thoroughly decayed manure, if any, for enriching the soil, and use "artificials" supplying a large per-centage of lime, preferably free basic slag phosphate. (*b*) Have the soil firm, so as to induce a sturdy habit. (*c*) Give the plants plenty of light and air from the time of seedlings appearing above the soil. (*d*) Admit air day and night, so that the plants and fruits may dry quickly, if syringed, and moisture not be deposited. (*e*) Paint the hot-water pipes thinly with a cream formed of flowers of sulphur and skim milk, and occasionally heat them to over 170°, so as to give off fnmes, never being afraid to have a little warmth in them in dull weather or when needful to keep the air of the house in motion. (*f*) Avoid straw or partially decayed stable or farmyard manure as a mulch, employing a little air-slaked best chalk lime, about 7 lbs. per rod as a top-dressing. (*g*) Dust the plants as soon as they show flower with some preparation of sulphate of copper in powder, this containing 10 per cent. of sulphate of copper. Apply with a bellows apparatus in as fine and light a manner as possible, and keep coated as new growths and trusses are made. (*h*) Grow the less improved corrugated varieties, or the small Cherry and Plum sorts, as they are the most exempt from the disease. Do not save seed from diseased fruits. We attribute your attack by the fungus to the mulching with farmyard manure six weeks ago. Apply some lime or basic slag phosphate.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*A. M. M.*).—Epidendrum nemorale. (*K. W. G.*).—1, Lychnis chalcedonica; 2, Rudbeckia laciniata; 3, Erigeron speciosus; 4, Chrysanthemum maximum; 5, C. segetum; 6, a variety of Aërides odorata. (*A. F. R.*).—The Iris is a charming form of I. longipetala, which varies much in size and colouration. (*J. H.*).—1, Galega officinalis alba; 2, Tradescantia virginica; 3, Polygonum brunonis; 4, Ruta graveolens; 5, Lysimachia nummnlaria; 6, Lilium davnricum. (*J. E. M.*).—2, Phlebodium aureum; 3, Asparagus deflexus; 4, A. plumosus nana; the others are quite insufficient for identification; the Grape appears to be White Frontignan. (*J. D.*).—The flower is of Alstrœmeria aurantiaca; possibly the leaf is Strelitzia reginæ. (*G. F.*).—Lælia crispa. (*S. K.*).—Nymphæa cœrulea.

COVENT GARDEN MARKET.—July 28th.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	1 9	to 3 0	Lemons, case	11 0	to 14 0
Currants, Black, half ...	7 6	0 0	Raspberries, tub, £34 to £35		
,, Red, half	3 6	4 0	St. Michael's Pines, each	3 0	8 0
Filberts and Cobs, 100 lbs.	0 0	0 0	Strawberries, per lb.... ...	0 0	0 0
Grapes, lb....	0 8	2 0			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, ½ sieve	0 0	0 0	Onions, bushel	3 6	4 0
Beet, Red, doz	1 0	0 0	Parsley, doz. bnchs	2 0	3 0
Carrots, bunch	0 3	0 4	Parsnips, doz	1 0	0 0
Cauliflowers, doz.	2 0	3 0	Potatoes, cwt.	2 0	4 0
Celery, bundle	1 0	0 0	Salsafy, bundle	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Seakale, basket...	1 6	1 9
Cucumbers...	0 4	0 8	Scorzonera, bundle	1 6	0 0
Endive, doz.	1 3	1 6	Shallots, lb.	0 3	0 0
Herbs, bunch	0 3	0 0	Spinach, pad	0 0	0 4
Leeks, bunch	0 2	0 0	Sprouts, ½ sieve	1 6	1 9
Lettuce, doz.	1 3	0 0	Tomatoes, lb.	0 4	0 0
Mushrooms, lb.	0 6	0 8	Turnips, bunch	0 3	0 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var. doz. ...	6 0	to 36 0	Fuchsias, doz.	4 0	to 6 0
Aspidistra, doz....	18 0	26 0	Heliotropes, per doz. ...	4 0	6 0
Aspidistra, specimen ...	5 0	10 6	Hydrangeas, doz.	8 0	10 0
Calceolarias, doz.	3 0	6 0	Lilium Harrisi, doz.... ...	12 0	18 0
Campanula, per doz... ...	6 0	12 0	Lobelias, doz.	2 6	4 0
Cockscombs, per doz... ...	3 0	5 0	Lycopodiums, doz.	3 0	4 0
Coleus, doz.	2 6	4 0	Marguerite Daisy, doz. ...	6 0	9 0
Dracæna, var., doz.	12 0	30 0	Mignonette, doz.	4 0	6 0
Dracæna, viridis, doz. ...	9 0	18 0	Myrtles, doz.	6 0	9 0
Euonymus, var., dozen ...	6 0	18 0	Palms, in var., each... ...	1 0	15 0
Evergreens, var., doz. ...	4 0	18 0	,, specimens	21 0	63 0
Ferns, var., doz.	4 0	18 0	Pelargoniums, doz.	8 0	12 0
Ferns, small, 100	4 0	6 0	,, Scarlet, doz.	3 0	5 0
Ficus elastica, each	1 0	7 0	Rhodanthe, doz.	4 0	6 0
Foliage plants, var., each	1 0	5 0			

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchid Blooms in variety.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms ...	2 0	to 4 0	Maidenhair Fern, doz. bnchs.	4 0	to 8 0
Asparagus Fern, bunch ...	2 0	3 6	Mignonette, doz. bnchs. ...	2 0	4 0
Asters (French) per buch.	0 6	1 0	Orchids, var. doz. blooms.	1 6	12 0
Bouvardias, bunch	0 4	0 6	Pelargoniums, 12 bnchs....	4 0	6 0
Carnations, 12 blooms ...	1 0	3 0	Pinks, doz. bnchs.	2 0	6 0
Cornflower, doz. bnchs. ...	1 0	2 0	Pyrethrum, doz. bnchs	1 6	3 0
Eucharis, doz.	2 0	3 0	Roses (indoor), doz.... ...	0 6	1 0
Gardenias, doz....	2 0	4 0	,, Tea, white, doz. ...	1 0	2 0
Geranium, scarlet, doz. bnchs.	4 0	6 0	,, Yellow, doz. (Niels)	1 6	4 0
Gladioli, doz. bnchs. ...	4 0	8 0	,, Red, doz. blooms ...	1 0	2 0
Lavender, doz. bnchs. ...	6 0	8 0	,, Safrano (English) doz.	1 0	2 0
Lilium longiflorum, 12 blooms	3 0	4 0	,, Pink, doz....	1 0	2 6
Lily of the Valley, 12 sprays	1 0	2 0	,, outdoor, doz. bnchs.	2 0	6 0
Marguerites, 12 bnchs. ...	2 0	3 0	Smilax, bunch	2 0	3 6
			Tuberoses, 12 blooms ...	3 0	6 0

TRADE CATALOGUES RECEIVED.

Austin & McAslan, Glasgow.—*Flower Roots and Plants.*

Cooper, Taber & Co., Ltd., 90, Southwark Street, London.—*Wholesale Bulb Catalogue.*

Jas. Douglas, Great Bookham, Surrey.—*Carnations.*

Little & Ballantyne, Carlisle.—*Bulb Catalogue.*

A. Roozen & Son, Overveen, Haarlem.—*Dutch and Cape Bulbs.*

"SAILING THE LOWLAND SEAS."

We English are a mixed race; the ancient woaded, skin-clothed Briton, the polished war-like Roman, the Saxon marauder, the Norseman, Viking, and the cold, proud Norman, all contribute to our making. We have fought and wrangled and contended with all, and all have left their impress upon our national character. Our old foes are turned into friends. No more does the Norseman with his pirate ship devastate our shores in the spring time of the year, no longer do we dread his barbaric cruelties. In science and in agriculture they are now our equals (not superiors, of course), and it was with the hope of learning some of their excellent methods that a select party of British dairy farmers sailed the lowland seas on July 1st. The B.D.F. loves an outing and, more than that, gets one every summer.

We venture to say that no tour could have been better planned. Denmark has of late years been first and foremost in the manipulation of dairy produce, and Sweden seems to have caught the infection. "No one need apply who is afraid of work." Certainly the programme for the ticket-holders made hard work a necessity. "Not a full night's rest for a week after leaving home." Only the able-bodied could stand this, but consider the distance traversed, the manifold objects of interest to be seen, and surely one would feel that all was well worth a little toil. "Steal a few hours from the night, my boy," says an old song, and these fair calm nights in the northern latitudes are things of beauty and joy.

July 1st saw about ninety pilgrims, male and female, leave Harwich for the Hook of Holland, from there by train to Kiel. At that point the party re-embarked for Wedellsborg, on the Island of Fumen. Count Wedell Wedellsborg, one of the

Presidents of the Danish R.A.S.; the British Minister, Sir Charles Scott; Herr Faber, Danish Dairy Commissioner, and others met the party with hearty welcome. The Count's estate extends over fifty-four square miles. The home farm (820 acres) is managed on a nine-course system; 300 head of cattle are kept, 190 of them being cows, all are of the red Danish breed. Now science steps in. Half these cows are subjected twice a year to the tuberculin test (we have not arrived at that in England yet).

Twenty-four breeding sows are kept, and about 300 fat pigs are turned out annually. The horses number about twenty-five. The cows appear the main feature on this farm, and are most carefully selected in their butter and milk qualifications: 500 gallons of milk per annum is the minimum production of any one cow, giving less than that her fate is sealed. Close attention, too, is paid to the bulls, only those the offspring of grand milkers being admitted into the stud book.

Now hard-worked English dairymaids, note this—each woman milks twenty cows *twice* a-day beside doing her other work. Most of these cows calve in the autumn, are kept up till the beginning of May, are then turned out till the end of June, spending July indoors. Now here we may note a point. Our cows invariably run off in this month, yet we look upon it as a necessity; it has hence occurred to us they would do better up in cool cowhouses, with plenty of green food supplied them in hot, scanty pastures. We, too, except in a few isolated cases, have no Mangolds left, neither do we ever use Sunflower cake. In the dairy all the milk is separated, and then the cream is artificially ripened.

A handsome entertainment followed this instructive inspection, and after hearty good wishes, exchanged and received, our party left for Copenhagen. Monday morning early found us at the Copenhagen Milk Supply Co. premises. Here 5000 gallons of milk are received and distributed daily. The milk is first filtered through coarse, fine sand, and a certain quantity is pasteurised, after which it will keep for three or four weeks. Then the babies are not forgotten; specially prepared milk is got ready for them, bottled and sealed. By the aid of ice and pasteurisation the company is enabled to deliver milk only once a day—this must be an immense saving in labour. Butter and four kinds of cheese are also produced at this establishment.

For those interested the cream separator factory of Messrs. Burmeister & Wain was on view, as was also the Scandinavian Preserved Butter Company's factory and the public abattoir. Very properly Government is exceedingly strict in its rules as to the selling of any doubtful meat. The blood from the abattoir is converted into food for pigs and poultry by being mixed with molasses and meal.

On Tuesday a visit was paid to the Agri. College at Lyngby, where are from eighty to 100 pupils, male and female, mostly the children of small farmers. The course of education is purely theoretical, and the full term of work is about nine months.

At Mellose is a co-operative dairy dealing with milk of 900 to 1000 cows. This factory is supplied from 164 farms, all small ones, and the farmers are the managers. Such a factory is found in almost every parish.

At Lund is another factory, owned by 170 members. The price paid for milk is 3½d. to 4d. per gallon. Any farmer requiring separated milk can have it at about 0½d. per gallon. The town price is 1½d. per gallon.

Then, Ho for Sweden! The College and Dairy School are at Alnarp. This is a most comprehensive school, being divided thus:—1, Higher agri. coll.; 2, lower agri. coll.; 3, higher dairy coll.; 4, lower dairy for men; 5, lower dairy for women; 6, a gardening college; 7, a farmery school.

Is anything left out, or any class of student unprovided for? In the higher schools the fees are by no means heavy; in the lower schools part, if not all, the fees are remitted.

A visit was paid to the factory of the Stockholm Milk Supply Company, also the Alpha Laval Separation Works was seen. Here a man may, by piecework, earn 40s. per week—not a bad living wage.

Here in England dairy work and management has been left to the women; other industries, deemed more important, occupying the energies of the farmer. We have made a mistake. No industry is too trivial, and no industry should be relegated to a "back seat," so to speak. Please do not think we disparage our dairymaids, not for a moment. What we say is this, they have had to work on bad material without any scientific training. Neither in the selection of the cows, their feeding, nor in the housing of the milk have sufficient pains been taken; too much has been left to chance. Hence it is that little Denmark, where dairy work and management receive the first and best attention, the dairy outcome is so magnificent. All we can say is shortly summed up in a few words, Do not be too proud to learn, and be grateful to your instructors.

WORK ON THE HOME FARM.

We have got our hay crop well and just in time, for rain has again begun to fall. St. Swithin this year was dry, but barely a week elapsed before there were signs of a break in the weather. The rain is very welcome, as pastures were going off very rapidly, and Turnips, especially the early ones, wanted moisture very much; the Potatoes, too, early as well as late, were inclined to stop the growth of haulm, and it remains to be seen whether there has been sufficient premature ripening to cause second growth and loss of shape and quality. On warm soils, it is to be feared, that such has been the case.

Though grain crops as a rule do not require rain, and in fact would be damaged by it if at all heavy, still a thoroughly good soaking now would greatly benefit the average farmer. The meadows and clover stubbles are very bare and brown, and there will be very little aftermath without a thorough watering.

Corn is changing rapidly, and reapers are being looked over and prepared for work. It is advisable to have at least two spare connecting rods for each machine, for when one breaks it is often a case of misfortunes not coming singly, and a third to fall back on, eats nothing whilst awaiting its turn.

Every effort should be made to finish Turnip cleaning, but if the most has been made of recent opportunities there should be little left to do.

Coal leading, repairs to private roads and gateways, and the trimming of hedges around the premises are items of work to occupy any time there may be to spare from the thatching of the haystacks, which must be completed at once. We are in the unfortunate plight of being without thatch, and have cut all the grass on hedge sides by cart roads and ditches, and topped up the stacks with the mixture; well raked down it will turn a good deal of rain, and at any rate be a protection to the more valuable fodder beneath.

Lambs are doing well, though the rain with its starting of new growth in the pastures may cause trouble. Change of pasture with any dry food that the animals can be induced to eat is the best preventive. Watery, washy food of any kind is bad for lambs at this period.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

DATE. 1897. July.	9 A.M. Barometer at 32°, and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of soil at 1 foot.	IN THE DAY. Shade Temperature. Max.	IN THE DAY. Shade Temperature. Min.	IN THE DAY. Radiation Temperature. In Sun.	IN THE DAY. Radiation Temperature. On Grass.	Rain.
	Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Inchs
Sunday 18	30·064	67·7	58·9	N.E.	67·0	81·4	56·2	118·8	49·4	—
Monday 19	29·802	69·0	59·4	N.E.	67·6	79·8	56·4	115·0	49·2	0·383
Tuesday 20	29·607	64·9	61·0	S.W.	66·9	77·4	58·3	122·1	56·8	—
Wednesday 21	29·700	61·8	58·9	S.W.	66·0	73·2	56·2	103·1	50 6	0·012
Thursday .. 22	29·938	63·4	59·9	N.W.	65·0	76·1	57·7	118·9	51·5	0·031
Friday 23	30·148	64·8	57·9	N.W.	65·0	79·5	51·1	129·0	45·1	—
Saturday .. 24	30·123	72·1	65·9	S.	66·6	83·6	60·0	126·3	53·1	—
	29·911	66·2	60·3		66·3	78·7	56·6	119·7	50·8	0·426

REMARKS.

18th.—Generally sunny, but haze or thin cloud at times.
19th.—Sun visible most of day, but little bright sunshine. Thunder, lightning, and heavy rain from 7.45 P.M. to 9.30 P.M.
20th.—Overcast early, frequently sunny after 9.30 A.M.; thunder at 2.30 P.M., followed by spots of rain, and generally cloudy after.
21st.—Overcast day; much thunder, a dozen flashes of lightning, and spots of rain between 1.30 and 3.30 P.M.
22nd.—Overcast till about 11 A.M., sunny at times after.
23rd.—A little cloud early; hot sun all day.
24th.—Bright sun almost throughout, with pleasant breeze.

A fine hot week. The thunderstorm in N. London, which gave from 2 to 2½ inches of rain at some places, only gave 0·01 inch here.—G. J. SYMONS.

Journal of Horticulture.

THURSDAY, AUGUST 5, 1897.

THE JOURNAL OF HORTICULTURE *can be obtained from the Office,* 171, *Fleet Street, London, post free for a Quarter,* 3*s.* 9*d. Editorial communications must be addressed to* 8, *Rose Hill Road, Wandsworth*

SUMMER PRUNING.

THE value of summer pruning has long been recognised and largely practised by gardeners and fruit growers in Britain. Grand crops have been grown, and doubtless will in the future be grown where this practice is intelligently carried out—indeed, some of our foremost fruit growers consider their success in producing good crops annually is largely due to their systematic attention to summer pruning, and yet I am personally acquainted with several fruit specialists who do not prune or pinch their bushes or pyramidal trees till early autumn.

Notwithstanding this, the fruit they stage each year at the metropolitan shows frequently, I might almost say invariably, obtains the highest awards. Let me, however, hasten to add that I would not, on this account, advise anyone to discontinue their usual practice in cases where such has proved satisfactory, as there are, and I think always will be, instances where the shortening of shoots in summer is productive of the best results. Those who do without it so successfully are usually located in warm, sunny positions, and have the branches of their trees very wide apart. These two circumstances, taken in conjunction, solve the apparent enigma.

The majority of gardeners have to deal with established trees, planted in many instances too thickly, the main branches also being placed too closely together. When the trees are young matters may of course be considerably improved by the removal of some of the branches, but with old ones this alone will not have the desired effect; yet by judicious summer pruning highly satisfactory results can be and are obtained. Then, again, in the case of trees trained to walls, the removal of shoots at midsummer is quite necessary to allow the fruit as well as main branches to get the full benefit of sun and light, otherwise the colour, if not the size of the fruit, is affected.

Given two equal amounts of wall space to experiment upon by practising summer pruning on one portion, and neglecting it on the other, I am firmly convinced the results obtained would be to the advantage of the former practice.

Having now advanced some reasons why the work under notice should be performed, I will proceed to deal with the practical part of the matter, and leave to those who choose to take up their pens the simple task of demolishing the arguments I have set up.

In one direction we seem to have gradually altered our practice with advantage, for the work of summer pruning is now usually performed at a somewhat later date than formerly, and the extra amount of freedom given to growth in its active season is to my mind beneficial to the trees, which seem to require some channel for the overflow of their exuberant energies. When the shoots are pinched in a very young state a good deal of secondary growth is made, which necessitates the expenditure of extra time in its removal, and there is also some danger of the basal buds starting; whereas, when the work is deferred till July, or early August, those who watch trees closely will have noticed that growth is almost, if not quite, completed. The shortening of the shoots then has the effect of helping to plump up the basal buds, while at the same time but few young growths are started.

In carrying out work of this description the right course to pursue is to go over the upper parts of the trees first, shortening back the remainder of the shoots about ten days afterwards. Trees so treated do not receive such a serious check as when the whole of the growths are removed at once, and, moreover, the practice of annually pruning the uppermost portions of trees first has the effect of forcing the sap into the lower branches, thus preventing their becoming unduly weak. This is an important point to bear in mind, for it is the principle upon which well-balanced trees are produced.

Apples, Pears, and Plums require little difference in their treatment. The shoots of each should be shortened back to three or four leaves, not counting the pair of small ones at the base. On well managed trees numbers of sturdy shoots having four or five leaves will be formed. These should not be shortened, as they form fruitful spurs from which some of the finest fruit is obtained. The extremities of all branches, where there is room for extension, ought not to be shortened, but when they have covered their allotted space shortening rather severely must, of course, be resorted to.

In the treatment of young trees, well placed shoots must be selected and laid in full length to form the necessary number of branches. In old ones gaps sometimes occur through reason of branches dying. Strong shoots should in such cases be, if possible, originated and allowed to grow without being stopped or shortened for filling the vacancies. In some old trees the spurs are much too close together, which causes them to produce a thicket of shoots, not strong ones, but mere breastwood. The best way to deal with such is to cut out half the spurs at once instead of waiting till the autumn; thin the shoots on those left, and allow the others to go unshortened till September. The wood then becomes hard and ripe, and in the course of another season develops fine fruit buds.

Peach trees will, of course, already have received much attention in the way of disbudding and nailing. All that needs doing now is to pinch a few of the strong shoots, and where there is room lay in laterals from them. This will help as quickly as anything to bring them into a fruitful condition.

Morello Cherries ought to have young shoots laid in full length about 4 inches apart, the remainder being cut clean away. It will be safe to say that all kinds of fruit trees and bushes which are crowded with growths now, forming something like a thicket, may be greatly improved by a free, yet judicious, thinning of the branches, removing the more weakly or least promising, and those retained will be materially benefited by the greater amount of sun and air thus having access to the foliage. As a rule, and broadly speaking, too little thinning and too much shortening of the branches of fruit trees may be noticed, a practice that is certainly not conducive to bountiful crops of any kind of fruit.

The above are a few simple hints for the guidance of those who need them, and by acting in accordance therewith no one should have the slightest difficulty in practising usefully the art of summer pruning.—H. D.

PRECEPT AND PRACTICE.

Parting Words.

(*Concluded from page* 70.)

Looking back over many years, "remembering a thousand things that passed me on those golden wings which Time has fettered now," in order to conclude these remarks to those who are looking forward, one is impressed by the fact that there are some truths which need experience more than reason to confirm them. Young gardeners of a past generation never had the opportunities now presented to their successors for self-tuition and advancement. Visible as this is, it is, perhaps, less easy to perceive the ban which lurks near every blessing, and is ever ready to neutralise it. But, really, in one sense, young gardeners of to-day are neither better nor worse off than their predecessors, unless they feel the corresponding responsibility attached to the great gifts within their reach.

Within their reach? Ancient history tells of an old Greek who cut the wings of his bees and placed before them the finest flowers he could gather in order to save them the journey to Hymettus, yet found they made no honey. So simple is the moral conveyed, that it is hardly necessary to say it does not apply directly to our expert pupils, but, rather, to younger students whose untried wings oft weary in the first flight to our Hymettus; hence the highest teaching, the best exemplified practice, scarcely including these minor efforts, can avail but little without unceasing labour to acquire knowledge, or personal practice to attain individual perfection. We may, in the main, agree with Lord Chesterfield, that "There never were, since the beginning of the world, two cases exactly parallel;" and in doing so, may add that, practically, there never will be. In this consists one of the chief charms of life, particularly our lives, to feel and to know that in assimilating the precepts and the practice contained in those rich stores, garnered by great gatherers, such will eventually be stamped by the impress of our individual character, and moulded to each particular use.

But lately, in discussing a matter with a gentleman, extraneous to our vocation, and upon which he had received professional advice from an expert, he said, Mr. —— not only explained the *pros* and *cons* in a clear, practical manner, but he inspires one to action. We may find similar cases in our own field of work—men who, not by their knowledge alone, but by their energy and unquenchable enthusiasm, inspire those of congenial tastes with kindred feelings. These are men amongst men, and we cannot over-estimate the great influence they wield for good, or question their undoubted position as leaders. True, a direct personal acquaintance with them may seldom be our privilege, but we find their second self in their writings, and here Lord Lytton's aphorism admirably expresses what a whole page of mine could less ably convey—viz, "It is not study alone that produces a writer, it is intensity." Intensity! not knowledge alone, but that fire which warms all within its influence into vigorous life and action.

To the industriously disposed nothing is more catching than industry, is the sum and substance of an old precept, and another tells us that, "Who conquers indolence conquers all the rest." As a rule from the vitality of youth springs a desire for action, which requires but direction and confinement to its proper channel to accomplish the best possible according to individual calibre. If youth could know what age requires in the matter of character-building doubtless the foundations would be more carefully laid, and there would be less shoring up with pillars of excuse in after life, with fewer tumbles. Man was born to rule—"to have dominion," but to rule he must obey infallible laws of system, method, harmonious in their working, inevitable in their results. There is no youth, I suppose, who can realise the dynamic force of this moral in its entirety. We see some of brilliant intelligence taking erratic flights in their course of study, aiming at many marks, but hitting none decisively. Clever, and wise, and witty in their way; each and all by turns but none for long. Marvellously busy, wonderfully energetic in their movements; in fact, a combination of good qualities—of atoms in violent activity, but wanting cohesion—system—to resolve them into solid bodies. So is this energy finally dissipated into the cosmic dust of wasted opportunities.

Double toil and trouble have those who ignore Heaven's first law of order. Let no busy youth ever deceive himself into assuming that he can accomplish more than one-tenth of what he is capable of without mapping out his course of self-tuition intelligently and judiciously, according to the circumstances in which he is placed, and persistently carrying it out to the end. Our youths must soon take their place as men—men of the world, not quite in the sense, perhaps, in which that term is usually employed, so we will change it to men in the world, and not as cyphers, which are well enough for totting up a census paper. What preparation is now being made for it? As a free man with the passport of education,

or is the birthright to be bartered for a few petty frivolities with a dash of desultory unfinished things thrown in, resulting, in some cases, in a life's regret, or in others—the worst cases—into the slavery of a distorted vision, which sees the whole world going wrong with some vague notion of setting it right by the impotent lever of a blind and biassed mind?

In conclusion, my sentiments, drawn from experience of life, are clearly expressed by one who said, "The longer I live the more certain I am that the great difference between men, between the feeble and the powerful, the great and the insignificant, is energy—invincible determination—a purpose once fixed, and then death or victory." Mark the sequel extracted from the above by another teacher, "That quality ('energy—invincible determination') will do anything that can be done in this world, and no talents, no circumstances will make a two-legged creature a man without it." Success is heartily wished to all earnest aspirants by—AN OLD BOY.

BURNT EARTH.

Do gardeners, as a body, fully appreciate the value of a large heap of "burnbake?" I think not. I admit that this material is most efficacious when applied to soils of a tenacious clayey nature, but it is also of good service in improving soils of a lighter nature. It is not of ballast or hard burned soil that I am thinking; but even this, if not too coarse, may be employed to good purpose on strong clayey soil, though it is poor stuff for fruit trees and vegetables when used in excess. For genuine burnbake fruit tree roots, especially those of the Vine, have a great partiality, while the borders in which it has been used are the most abundantly tenanted with root fibres and the last to become soured.

It once fell to my lot to have to move a large vinery a distance of three miles, and in order to have "something to show" the same season all the Vines were transplanted. About one-half had apparently been treated to a heavy surfacing of burnbake, and these moved remarkably well, actually ripening a full crop of small bunches within four months of removal. The remainder had long naked roots with few or no fibres, and these, although they grew fairly well, were not equal to maturing any bunches. Much the same results have been observed when dealing with Apricot, Peach, Pear, and other fruit trees. One of the most profitable crops of Strawberries I ever grew was produced by strong plants lifted, after the fruit was set, from an open border in which burnbake had been mixed. It is practically the same when charred refuse is mixed with soil in which a variety of hardy plants are temporarily bedded out.

Private gardeners are so accustomed to use sharp sand in potting composts that the fact of charred refuse answering equally well, if not better, is lost sight of. Especially is it to be commended when the loam used is deficient in root fibres. Given the choice of either light, spongy turves and silver sand, or a fairly free-working clayey loam from a cultivated field, I should probably "plump" for the latter. Quite recently I was offered 50 loads of turf from a black soil almost for the cost of hauling, but declined it.

The compost for about 3000 Chrysanthemums I grow consists of clayey loam carted from an open field, leaf soil, bonemeal, horse-droppings, and burnbake, and if they succeed as well as they did last year there will be no regret that the loam had no fibre in it, or that no sand whatever was added. Pelargoniums, Carnations, Bouvardias, Arums, Cyclamens, Primulas, Ferns, and a variety of other plants, all have burnbake mixed freely with the soil, and those who like to see Cucumber roots in a network should try the effects of charred soil and ashes. Some fifteen or more years ago Dipladenias were shown in greater perfection than now, and I shall not forget a house the whole roof of which was draped with choice Dipladenias at their best. Among other hints the successful cultivator gave me was one upon the employment of charred soil in the potting compost.

It is at this time of the year when rubbish accumulates the most rapidly in gardens, that a slow fire ought to be started with a view to converting much of this unsightly accumulation into valuable matter. Everything that will burn either slowly or rapidly should be roughly separated from the rest preparatory to burning. Start a fire with old Pea stakes or coarse dry wood of any description, on this disposing first the drier portion of the rubbish, following with heavier greener materials, banking over with the half-rotten weeds and soil. A slow fire is essential to the successful production of a valuable residue, no flame being allowed to break through. Instead of leaving the heap of charred wood, soil, and ashes exposed to all weathers, as is often done, I advise that it be stored in the dry, as when much exposed to rains some of its manurial virtues are washed away.—W. IGGULDEN.

VEGETABLES FOR HOME AND EXHIBITION.

ROOT CROPS—ONIONS.

No vegetable holds out greater possibilities to the grower for exhibition than the Onion, and, as is well known, bulbs varying in weight from 1 to 3 lbs. are staged by eminent growers at the most important shows. For the excellence of the exhibition Onion of to-day first thanks are due to the enterprising firms of seedsmen who have looked ahead, and seeing there was capital in the bulbs have centred much of their attention on it, with the result that many excellent strains have been produced. Pedigree horses and cattle have been known for a long period, but pedigree Onions sounds somewhat paradoxical, seeing they are of quite recent introduction; yet such is the name given to the best exhibition strains which are sold in sealed packets direct from the hands of the specialists, to whom they owe their origin.

Credit also is due to growers—gardeners who make vegetables their strong forte. They have not been slow to grasp the fact that to produce Onions of exhibition size and quality a good strain is indispensable, and having obtained the approved varieties have brought energy and experience to bear on their cultivation, the result being seen in the enormous bulbs which the average Onion grower looks at and marvels. There is no trade secret about growing large Onions. Anyone can do it who has the inclination, with cultural aptitude and facilities. Special treatment is of course necessary, and if this is given in conjunction with that indispensable item to true success in all gardening operations—close attention to details—then Onions may be grown in most gardens worthy to occupy a place on the exhibition table, and if not first prizewinners they may still be a credit to the cultivator.

Those whose aspirations lead them to the cultivation of exhibition Onions should remember three rules necessary to success. In the first place, a suitable soil, as all are not conducive to the welfare of the bulbs; secondly, as I have already intimated, seeds from the best stocks that can be obtained; and thirdly, the plants must be well cultivated, and receive constant attention at the hands of the grower from the time the tiny bulblets are formed till they have reached the maximum size and are removed from the ground. A soil in which clay predominates is not good for the plants, yet they must have something substantial in the way of compost. The benefits of deep cultivation should also be observed, and the intending exhibitor must select his ground in the autumn, trench it to the depth of 2 feet, and place in the bottom a good dressing of farmyard manure. Wood ashes, soot, and lime may also be incorporated with advantage. Some growers ridge up the soil only, thus laying it open to the influence of frost. For the ordinary crop this is often all that is necessary if the ground is in good heart, but it must be borne in mind that if exceptional bulbs are required the soil must be rich in character and friable in tilth.

The brevity of our summers prohibits the full development of the bulbs if the seeds are sown out of doors in the ordinary way, therefore artificial methods are adopted by the enlistment of the services of a cool house or vinery in which the canes are resting. Propagating boxes form good receptacles for the seeds, which may be sown in ordinary potting soil in January or February. When the plants have grown to the height of 1 or 2 inches they are pricked about 3 inches apart into other boxes, and placed close to the glass in a house in which a genial temperature can be maintained. Care is taken that they do not become drawn, and hence weakly. When growing sturdily, and about 6 inches high, they are gradually hardened and given the accommodation of a cold frame till about the third week in April, when, if the weather is favourable, they are transplanted in the drills, allowing a space of about a foot from plant to plant. It is a good plan to arrange the bed so that there are two rows of Onions, and then a path, by which means all cultural operations may be performed without treading among the bulbs. It should be borne in mind that during the preparatory period the plants are subject to attacks of mildew, so that any neglect in ventilating and watering materially affects the after welfare of the bulbs.

Constant attention with abundance of stimulative food are the chief requisites through the summer. The surface soil should be frequently stirred during dry weather. A light dressing of soot and an approved chemical manure may be sown broadcast every three weeks or so, preferably in showery weather, and if dry then it must be washed in. Liquid manure from the farmyard may be used with advantage, and the moisture is conserved in dry weather by a mulching of well-decayed manure. In periods of drought a light top-dressing of salt is good. The plants must be allowed the full benefit of the sun, as the idea is to build up the bulbs thoroughly sound and hard, hence the necessity of soil containing an average amount of mineral matter. Do not remove the bulbs till the foliage ripens and dies, as this is an indication

of maturity. A cool dry shelf is the best place for storing exhibition bulbs.

Onions treated in the manner described do not suffer materially from attacks of the maggot, as the growth is firm before the plants are placed in the drills, and the dreaded fly passes them over in favour of the tender growths of the maincrop Onions sown outdoors. Where the grub is very destructive it is a good plan to sow largely under glass, and afterwards transplant, as this is a good means of averting the pest. A further method of prevention is found in spraying at intervals with a mixture of soapy water containing a little petroleum, but the first application must be given *before* the winged enemy is out and about, the time of emergence depending on the weather.

Among the varieties of Onions now in the market Ailsa Craig retains its popularity as one of the best of the large globular types. As a maincrop Onion it has no superior, and if not sown too thickly and afterwards judiciously thinned bulbs of good size and firm in texture may be obtained. Cranston's Excelsior is another variety with a reputation second to none. It is regular and even in shape, large in size, and weighs well. This variety, like the foregoing, is excellent for growing in quantity, and without any special treatment gives excellent returns. Cocoa-nut is good when its qualities are fully developed by special cultivation. Advance is also a fine Onion, and for long-keeping qualities the Improved Wroxton is excellent. The bulbs are large, even, and so sound that they will keep in good condition till the following summer.

Among the large flat types Anglo-Spanish still holds its own both for exhibition and also as a maincrop Onion. Under special treatment it grows large in size, and is perfectly sound. Both Lord Keeper and Rousham Park Hero are excellent for exhibition, and splendid examples may often be seen at large shows. Sutton's A1 is an Onion of excellent quality, and mention may also be made of Royal Jubilee as a good exhibition variety. No vegetable gives better returns for good cultivation than the Onion, whether for show purposes or general crop, so that the above remarks will be found applicable in either case.—Grower and Judge.

OLD ROSES AND NEW CARNATIONS.

An Old Rose Hero.

"Growth such as I never had before; blooms—ah! there was nothing to touch them in my showing days, and never an insect anywhere. Come and see." That closing adjuration is quite Cannellesque to be sure, and the ingenious reader who spots his man with a certainty is doomed to confusion. It was not the old lion of Swanley, but a rare fighting hero for all that, though he now talks as one who scents the battle no more. I picture him standing at the vicarage door, gazing with a pathetic far-away look as though all too sadly conscious that he is much given to forgetting the faces of friends, and pleads the weakness of sight consequent on a heavy burden of years as his excuse if he is deficient now; but his wrinkled face breaks at length into a cheery smile of recognition, and perturbation passes swiftly away. He is upright as any guardsman, notwithstanding that he bears the burden of seventy-five years, and his step has the briskness of youth. I ask myself, as I follow him, whether it is because he is leading me towards the flowers that his movements are thus buoyant. I think it must be so, and that the light in his eye is also a reflection of olden fires. Curious it is to note, and pregnant of the depth of sympathy that exists between a true flower lover and his plants, that although the veteran has to peer long and earnestly to make sure of the face of an old acquaintance, by some strange power he is able to name at the briefest glance scores upon scores of varieties, differing from each other, many of them, by only a faint shade of colouring. So do we know that love indeed rises supreme over the weakness of the failing senses.

The old hero lingers amongst his beds, pointing with joyful finger to noble blooms and thick leathery leaves. "Times have changed," he says, "and I cannot afford to keep a gardener now, for I am very poor." There are evidences of this, alas! in plenty; but as if Nature were determined to deal kindly with the old man, fly and blight have spared his bushes as they never spared them in the days when a gardener pursued his daily round of labour. They have been perforce neglected, but they are as clean as if no pestilent foe existed. And the flowers are fit to fight any cup battle. They are of huge size and full of the most lustrous colour. "I have grown Roses all my life," he says, "but they were never like this. Look at that Souvenir d'Elise, look at that Innocente Pirola. It is an old favourite of mine, but I have never had it like it is this season. Madame de Watteville, too, and Dupuy Jamain. Do you not think that A. K. Williams would have won me a medal?"

It is the same round of delighted exclamation and admiring response, long continued. Such Roses would satisfy the eye of the most critical expert, and he would be lacking in sensibility indeed if he did not see in the glory of the flowers a great and moving compensation for the burden of infirmities which time inexorably brings. It is show day in the neighbouring town, and for the first time in his career as a Rose exhibitor the venerable vicar is not there, the early morning rise and drive being now beyond his strength. But if that brings, as bring it must in the memory of past delights, a shadow of pain, this rich and bountiful harvest of flowers beguiles the sadness. It is thus, surely, that we learn the full measure of compensating happiness which the garden can bring.

Anon the veteran's knife flashes out.

"You are going to give me a lesson, Mr. Buchanan?"

"In making cuttings—yes!"

He tells me that he has had great success with own-root Roses, and shows me vigorous bushes raised by his own hand a year and two years ago. They are amongst the best of the whole beautiful flock, running over with exuberant strength.

"Now this is the secret of it all. A shoot taken off with a heel; remember that always, with a heel, taken 8 or 9 inches long and put in firmly nearly to the top."

His listener had heard the lesson before from other lips, and illustrated by other hands. Aye! and he has proved the soundness of it, but none the less he follows the movements of the deft fingers as they shape the shoot with the interest of inexperienced youth. It is no worthless method of growing Roses, this. Not every variety succeeds alike on Manetti, Grifferaie, and Briar, and many a good Rose gives of its best and freshest when it has no caterer but its own inherent vigour. Anyway, there is significance in this fact of a veteran grower, and literally the hero of a hundred fights, telling you with all the emphasis of firm and well-proven conviction that the own-root plan has his strong allegiance.

The Carnation Man at Home.

It is at the other end of smiling Kent. Town is very near, but there is only the smell of Heath and Bracken on this burning July day. Hayes village is making merry in good old English style at the annual show, and on the ground I come upon a short, sturdy figure, bearing about it a notable stamp of decision and determination. It is the famous Carnation man, he who in a few short years has achieved a distinction that falls to the lot of few gardeners. It is not a far cry to the garden, and the grower is in a mood to act as guide. The flowers are there in thousands. I ask him how many, and he tells me that there are 10,000 in pots and another 30,000 planted in the open ground. What a legion! And every variety a selected one. In all the vast array there is not one which held a place ten years ago.

It is rich enjoyment to wander through house after house. When you have seen Banner you think that anything further in rich bold colouring it would be impossible to get, and yet but a yard away you find Endymion and know that the impossible has been accomplished. This is a classic flower. It has all the parts of a really great self. In the wonderful breadth of its magnificent petals, in their firm, stout texture, in the extraordinary fullness, richness, and vividness of the colouring there are united in a most uncommon degree the qualities that go to make up a perfect flower. If the generations as yet unborn are to see as great an advance on Endymion as this superb variety is upon, let us say, Raby Castle, happy should it be. Carnation lovers would find almost as deep enjoyment in some of the best of the whites. Most people would be satisfied with Adela, but only till they had seen Mrs. Eric Hambro and Pearl. It is hard to choose between two varieties like these, but the man who can afford both need never give himself that painful task. Our old friend Purple Emperor has departed to another sphere, but he will not be regretted while Bendigo remains, for this beautiful variety has splendid growth and grand colour to help it in its fight for fame. For a yellow what advance could any reasonable mind expect on Blondin? It has substance, fine form, fine colour. But in a house further on there breaks on the visitor's delighted gaze the form of Cecilia, and then he has eyes for nought else. That beautiful race the yellow ground Fancies are represented in great numbers. You think Mrs. Tremayne is the best until you see Iago, then transfer your allegiance to that arch-traitor and reap a just retribution when at length you come upon Badminton. Lady Hindlip has the deepest colouring of all the reds. It is a rich crimson, bold, lustrous and shining.

The young carnationist is a man of deeds and not of words. He walks gravely round, throwing in a remark now and then, but for the most part leaving the flowers to tell their own story. What will be his future? He is not a one-plant man, but excels in every department of a large garden. Onions proclaim his thoroughness and skill as eloquently as Melons, Peaches, Grapes, and grand

phalanxes of pot fruit trees, as healthy, as productive, and as well trained as Mr. Rivers' own. You know him, good reader, as well as if I had worked his name into every line. I ask again—What will be his future? The workers do not always come out the best in the end, but the Carnation hero has a chance that most of us would envy—and he will not let it pass.—W. PEA.

GARDEN ARCHITECTS AND ARCHITECTURE.

BRITISH gardeners may well view with pride Paxton's Palace of Crystal adorning the Sydenham Hill; familiarity with the structure can never breed contempt, although, just possibly, it may be taken with other marvels of modern skill and mechanical enterprise in a matter of fact kind of way. Yet it is but common justice to the memory of the great gardener-architect to include in the mental stock-taking now being made of progress during this beneficent reign a brief survey of the *chef* and his *chef d'œuvre*. Great gardeners had preceded him, illustrious architects left enduring monuments behind, such monuments, indeed, as are seen in our cathedrals, to testify to sublimity of conception in the magnificent realisation of design.

It is true that the Palace arose for purposes somewhat apart from gardening, and for such it has been retained; it is true that others may view it in a totally different light, but we, as gardeners, regard it as a great greenhouse, and glory in its creation by a gardener. We mark advance by marking time and the traits it has developed—stage coaches and railroads; wind and steam; candles and electricity; and, recognising the value—nay, the necessity of comparison, we must for the nonce place in juxtaposition, not the Crystal Palace, perhaps, but one of these palatial conservatories of the present with its antitype of a hundred years ago and, by analogy, acknowledge that Paxton was veritably the Napoleon of garden architecture.

There are good reasons for supposing that our illustration of a conservatory in 1797 is an example of the best then existing, a noted gardener of that day thinking it worthy to adorn, as a frontispiece, a comprehensive little work by him on gardening—viz., "The Gardener's Journal." The reproduction (fig. 17) shows that the engraver of the original has given a tilt to one angle of the roof which does not improve its appearance, and which I do not think a gardener-architect even of that day would have been guilty of. Possibly, though, the stately dame figured in the foreground is enforcing some remarks upon the point in question by displaying what appears to be a huge horse pistol, and the good old gardener, in view of possible consequences, has brought out his largest spade as a shield of defence.

We can duly allow that glass being a luxury a hundred years ago its employment for our purpose was severely restricted, but the fact cannot be ignored that no marked development of its use in horticulture took place until the man and the hour had arrived—until Paxton in three giant strides reached the pinnacle of fame as a gardener-architect on the summit of Sydenham Hill. This does not appear to have been by laborious, protracted stages. His first practical exposition of that remarkable engineering talent he displayed being the Victoria Regia house at Chatsworth, from which was conceived and brought into existence the great Exhibition of 1851 in Hyde Park, this, in its turn, being the parent of the present Crystal Palace. There are few, if any, more fitting monuments to that munificent patron of the arts and sciences, the lamented Prince Consort, to whom must be accorded unqualified honour and esteem for including among the many traits of a noble life that of fostering and promoting the magnificent talents of Paxton.

Details of the great workman and his works need but be briefly mentioned here. Mr. Paxton, born in 1803, was educated in the Woburn Free School, and entered the service of the Duke of Devonshire at Chiswick, eventually attaining to the post of head gardener at Chatsworth. Here his successful experiments with iron and glass for horticultural building led to the planning of the great Exhibition on the larger scale, embodying the same principles. For this he received the honour of knighthood ere commencing his *magnum opus*. In 1854 Sir Joseph was elected M.P. for Coventry, which he represented until his death in 1865. *Apropos* of his *régime* at Chatsworth, that veteran horticulturist and cultured scholar the late Mr. Geo. Cunningham of Liverpool told the writer there was none he enjoyed and appreciated converse with more than Paxton, and that the last time he dined with him in the gardener's house at Chatsworth there was outward and visible signs of coming events in two livery servants waiting upon them at table.

The great Exhibition, as well as it served its direct purpose, indirectly paved the way to that perfection found in its permanent successor; for, as far as the building was concerned, various defects which only experience could determine were noticed to be avoided. In the present Crystal Palace the grandeur and harmony of design are perfect to a fault, if we may say so, for where criticism finds no margin for adverse judgment it often lacks by want of comparison a full measure of appreciation. Would that by some Rip Van Winkle process the architect of our conservatory of a century since could view this sparkling triumph of iron and glass!

The writer's first impressions of this colossal conservatory were, I fear, but parallel with those of the public, whose wonder is often absorbed in the variety shows. Well do I recollect as a child seeing it first from a vantage point some few miles distant flashing back the dying rays of the setting sun, and the childish wonder and admiration which could only be appeased by the promise of a visit to it. Of that visit, which took place at a school excursion some few years after, there is but one feature prominent in memory, and that is the waiter who served up our cold collation, brought it ready cut on plates piled up sandwich fashion, and

FIG. 17.—A CONSERVATORY IN 1797.

the bulk of my moiety stuck to the bottom of the next boy's plate which he appropriated, to the end that I was a sadder boy and but little wiser for the visit. Then, I think, the next visit was engrossed by Blondin, and the next is yet to come, when, doubtless, in looking up its 174 feet to the roof of the central transept, in knowing that there are some 25 acres superficial of glass and some sixty miles of hot-water pipes, the grandeur and magnitude of its proportions will be justly appreciated.

Probably the source of Paxton's inspiration as a designer may be traced to that voluminous writer, zealous scholar, and earnest worker, John Claudius Loudon, who, in addition to his exhaustive studies and comprehensive published works upon agriculture and horticulture, grafted upon each of these great branches the study of architecture in direct relation to them. In 1805 Loudon published "A Short Treatise on Some Improvements Lately Made on Hothouses;" in the following year, in two volumes, "A Treatise on Forming, Managing, and Improving Country Residences, and on the Choice of Situations;" and in 1832 "The Encyclopædia of Cottage, Farm, and Villa Architecture." To the fertility of Loudon's inventive faculties must be attributed the "ridge and furrow" system of horticultural building, although it was left to Paxton to place it in practical form. Loudon was not destined to witness Paxton's crowning work, nor, indeed, the exhibition preceding it, his death occurring eight years previously at the age of sixty whilst actively engaged upon his labour of love, his unfinished work being "Self-Instruction for Young Gardeners."

Rude as were the earliest examples of greenhouse architecture, some of them being simply sheds, with a glazed sash introduced for

the admission of light, it was the dawn of a new era. If we view the long-ago greenhouse in the light of modern criticism, the methods of heating must be considered as barbarous. As far back as 1684, we are told by Ray, the greenhouse in the Apothecaries' Garden at Chelsea was heated by means of embers placed in a hole in the floor. Later, in 1771, in the "Medicus Index Plantarum," a sectional view of a greenhouse in the Elector's garden at Mannheim, advance is marked by a stove being shown. This was followed by the use of flues, which carry us well within the Victorian era, and some examples of which, now rightly termed old-fashioned, are still to be found. Literally and figuratively those were the dark ages of garden architecture, when struggling under disadvantages, that intense love of gardening, especially characteristic of the English and German races found, in the system of hot-water heating, the freedom we now enjoy.

Of that increasing demand and marvellous supply of horticultural produce necessarily grown under glass, which in its turn increases horticultural building by leaps and bounds, it is needless to dwell upon; sufficient to say, or rather to quote from a recent work, "Where twenty years ago one plant-house was to be seen, there are nearer fifty now," and the cry is Still they come; good, sound, sensible houses, designed on the most practical of all bases —viz., to pay. In viewing some of this building, of which the suburbs of London provide so many examples, where ten, twenty, fifty and more span-roofed houses of considerable length are to be seen *en bloc*, although the architecture is of the simplest description, the eye dwells upon them with not less satisfaction than upon the more imposing types, so admirably do they in their rigidity, lightness, and general essentials adapt themselves to their purpose.—FREEMASON.

CHARACTER SKETCHES.

BUSY MEN.

WE have received two letters from correspondents in which regrets are expressed for not sending contributions of late. It must be understood that we had no thought of making any complaint on the subject, though we are pleased to hear from both of them when they have time to write. They are young men—that is to say, were born about a generation ago, and are above the ordinary run of gardeners in educational attainments, largely, we suspect, and laudably, acquired since they left school. One of these men is more of a "dandy" than the other, and he cannot very well object to our saying so—first, because it is true; and secondly, because wild horses would not drag from us his name.

As the two letters arrived by the same post, and were, in fact, the first and second opened, we could not but observe the difference between them. They were alike in one respect, and one only. The two young gardeners had been so very, very busy that they could not find any time for the pen. If the statement had ended there no more would have been heard of the matter, but they both found just time enough to make explanations as to the pressure to which they had been subjected; and as these statements are not without significance, it might be somewhat of a pity if they were lost to the world. The first letter that was opened is in these words:—

"We have had such a busy season that writing, much as I love it, has been out of the question of late. To give an example of a week's work—Three swell dinner parties, three cricket matches, and one ball. I have had to attend all these, but I don't mind, as we won twice."

This reference to seven events in one week is perhaps a little mixed, but we may presumably take it that the "winning" refers to the "work" of cricket, of which, we understand, our smart young friend is somewhat of an adept. The other "work," we may suppose, consisted in dressing the dinner-table on three nights, and taking part in a ball, possibly after a cricket match, which *would* be a hard day's (and night's) "work," especially if it were the losing day. That all this comes within the "work" of a young gardener shows how different things are now from what they were a generation ago; still, a man must do his duty, even if he has to sacrifice the evening occupation he "loves so much"—composing essays on gardening. Let it be granted that he really does enjoy this instructive exercise, the question still may be asked—Does he "love" cricket more? In this reference, however, it may be said that skill in the "field" is not incompatible with capacity in the garden, as sundry examples prove.

These remarks, it must be understood, are not condemnatory of anything or anybody, but comparative; and here is the comparison —the second letter. It reads as if from the "'orny hand" of a son of toil, but there are brains behind the labour, as there always ought to be; and after the potting and the packing will come the pen, because this worker (not in the ball-room or with the bat and ball) tells us so as follows:—

"My work has been so heavy of late that when the day was over I was too tired to write. No one will know better than yourself what I have had to do when I say that during the past month I have potted 4400 Tomatoes in 12's, and 1100 Chrysanthemums in the same size; also 2000 Royal Sovereign Strawberries in 32's; and besides all the watering and tying, packed 4 tons of Tomatoes—my first crop—my only help being a labourer; but now that the heavy work is finished I shall soon be at the pen again."

It will be conceded that the two letters are different from these two men, each able in his own way; and it may perchance be granted that they ought not to have been consigned in silence to that receptacle of random thoughts known as the W.P.B., because they will give birth to other thoughts, which may, perchance, culminate in action, on lines that each particular young thinker may deem the best. We should rather like to know, also, what some of the older "thinkers" think of them—the "Old Boy," for instance, whose sympathies with striving, struggling youth are obviously so sincere—whose counsel is so wise, whose desire is so strong that the gardeners of the future shall be better than those of the past. Cannot he in the fertility of his conceptions enforce no lessons from letters so diverse, and which were never intended to see the light, as those above cited?

Character sketches, they may be taken to be, as indeed they are —types of men of whom there are many of each kind, but more perhaps of one than the other. Will there be room in the coming years for all of both these types to distinguish themselves in the world of gardening? and for which are there the greater possibilities of raising themselves above their fellows, of exalting the art of which they are exponents and enriching the world?

EXHIBITS OF WILD FLOWERS.

THE too common and utterly worthless exhibits of wild flowers set up at flower shows all over the kingdom have absolutely no merit, for whilst not one in fifty is really light and graceful in appearance, the bunches teach the little ones nothing useful. Then, too, they lead to a wholesale gathering and consequent destruction of these pretty natural products, and the more flowers are thus ruthlessly and wastefully gathered the greater are the reproductive powers of these plants reduced. It is too much forgotten that so long as wild flowers adorn our hedgerows and lanes, our woods and commons, they make in all such places gardens for humanity at large. No feature is so noticeable and so lamentable in the neighbourhood of large towns as is rapid disappearance of wild flowers, destroyed by reckless and ill-advised plucking.

Those whose duty it is to judge such exhibits as nosegays or bunches of wild flowers present at shows, realise almost their impotence to decide as to the merits of such products, and when shown, as is sometimes the case, in hundreds, the task is almost an appalling one. Against these wild flower bunches I have often written and spoken most earnestly, because they are worse than useless.

On the other hand I have strongly advised that wild flower exhibits should be of an essentially educational nature, the children who present them being wanted to stage so many kinds or varieties, in small bunches, neatly set up in glasses, each one being correctly, or so far as possible correctly, named both with the botanical and common appellation. Some children know the common names of wild flowers as they do those of wild birds; but even that knowledge is both limited and imperfect. Still, whilst a general knowledge of such common names is useful, it helps little to a better knowledge of or appreciation for these wild flowers. It is when children are not only taught the family or botanical names of wild flowers, but to thoroughly understand them, that real interest is aroused, and what was in wood and hedgerows before a sealed book, into which not the least care is shown to look, now becomes an open volume, which is read with the deepest interest.

I have often urged that not only should the present absurd wild flower classes be withdrawn, but also that the prizes be given only to named collections culled from the district; and, still farther, that persons of leisure, ladies especially, who have, or for the purpose would acquire, botanical knowledge, should form children's classes, and during the summer evenings or on days when there was leisure take these round the locality to collect plants or flowers for naming, and in that way not only find very delightful occupation, but also spread abroad such wide knowledge of names, habitats, and families of wild flowers as would speedily transform numbers of children from being mere dullards or drones into intelligent, devoted lovers of Nature, and especially of wild flowers.

I met with a very interesting feature at a recent village flower show in Petersham, near Richmond, where the Rector, the Rev. W. H. Oxley, all honour to him, had offered to boys under fifteen years of age, and girls in a separate class, capital prizes for the best collection of wild flowers set up in separate bunches, and so far as possible correctly named. There were several large collections staged, the numbers of diverse kinds ranging from twenty to fifty. The nomenclature was very fair, not a few being botanically correct, whilst many others had their common appellations only. All praise to Mr. Oxley for what he has thus done, and it but needs the friendly coaching of some lady or gentleman to render these classes of immense value to children generally. —A. DEAN.

ROSES

MEDEA AND MARÉCHAL NIEL.

I HAVE just received the following communication from one of the greatest of British rosarians, who gives me permission to use it in any way I please :—

"I do not know whether you will think well to answer the communication which appears on page 100 of the *Journal of Horticulture*, but it certainly seems to me that the correspondent has overstated the case as regards the fitness of Maréchal Niel for outdoor culture. Such an instance as 'W. R. Raillem' quotes must be quite exceptional, and in ninety-nine cases out of a hundred the most intelligent pruning can do no more than get a single crop of flowers, and these almost invariably become damaged by the weather before attaining perfection unless growing against a wall. No amount of writing can truthfully represent Maréchal Niel as a satisfactory garden Rose, whereas Medea is one of the best outdoor Roses of its class and colour, as witness the splendid flowers of it that have been continually shown this summer by Mr. Orpen of Colchester and others."

I hope to find other rosarians giving their opinion upon this interesting subject.—DAVID R. WILLIAMSON.

"THE QUEEN."

I WISH to propose a toast, my friends, if a lady may. Full of days and crowned with honour, blessed by her people and made a blessing to them, it is not of her Gracious Majesty Victoria of whom I would descant, but of a frailer sovereign who comes to us in radiant beauty each summer, and only leaves us with the first frosts of winter. Rosa regina, of her I would sing, had I the gift of the poet. Rosa regina, in all her moods, in all her protean forms of loveliness. She condescends to expand her beauties alike in the cottage garden as in the wide domains of a ducal owner.

You may think you know the Rose intimately, but you must have spent every summer of a long life in her company to say so with any degree of truth. Of course a nurseryman's knowledge is unique, but personally I think the best way to acquire an "at homeness" with her majesty is to be the owner of a fair-sized garden where the Rose is made a special feature. In a nursery everything is too neat and trim—*i.e.*, rows upon rows of each variety with no break or tangle of other flowers to serve as a background or contrast. A smooth-shaven lawn makes the fairest setting and walls of greenery, Yew for choice. What makes up the charm of so many gardens seen in the Academy? Masses of red, white, and blue, varying in height and toned down by vistas of grey green.

Very few people, except her own particular worshippers, see Rosa regina at her best. She is not a flower for midday exhibition—her beauty is too rare, too delicate for a full blaze of sunshine. It is said that only a perfect style of loveliness can bear the light of the early morning sun, so if you will rise with me betimes I will show you such a picture as will make your heart sing for joy. The sun has just left his bed, and the shadows from the old grey house fall athwart the western lawns; the birds are awake—the day is never too long for them—but little else is stirring. Dew everywhere; the poor flowers, full blown by yesterday's sun, have drawn in and stiffened their drooping petals, and for an hour or two will flaunt it again with their young fresh sisters The cool air and the bath can do so much to re-invigorate the failing, and what must the effect be on the newly opening flowers? Strong shoots uninjured by the mild winter have been tied in one to another, and form a succession of rosy festoons, the wealth of Roses, so heavy as to fairly cause the arches to reel and fall forward. What shall we look at first?

The hedges of Félicité Perpetué, Ayrshire Ruga, and Crimson Rambler—Félicité with her clusters each a perfect posy, the central, or mother Rose, of the purest white, and compact in form, with her attendant mass of pink children in various stages of development. Her leaves are of a glossy green, and her sprays of this year's growth of fairy-like elegance. "Ruga" is a modest flower, bends her pink-tinted face, and sheds a sweet perfume around. Here is the sturdy Rambler—of such a crimson! and lifting his handsome face to catch every beam of light. A heavier climber you see in Cheshunt Hybrid, big flowers, big leaves, for about two days unsurpassed in colour—then, alas! fading to a dingy magenta. Here is an old pink Monthly, and by her side Mrs. Bosanquet with fair and delicate blooms. Here is a flower, upright as a dart, firm and strong, in the middle of a setting of perfect green, cup-like, and of a lovely pink, but, alas! scentless—our old favourite the Baroness, and in close proximity what might be her sister in white—Merveille de Lyon. A pretty Tea, often the best in a box of exhibition Roses, is found in Catherine Mermet, and near her, with creamy pink, is Marie Van Houtte—a soft primrosy yellow at her zenith. she blushes rosy red as she gently passes away. Here is some size and vigour too, with perfect shape. Look over the plants—not a single failure. Mrs. John Laing does credit to her raiser, and her fair pink is set off to perfection by the richer hues of her German neighbour, Ulrich Brunner. Go to that tree when you will, there will always be a flower, the best of its kind. Where is there such a rich red as marks the Queen's second son—he of Edinburgh, or so dark a crimson as Prince Camille de Rohan—alas! a hot sun fairly browns and burns his deep petals; he is eminently a Rose for bad weather.

A year or two back, in all shows, Madame Gabriel Luizet took first place as a pink. She seems to have been relegated to an inferior position, but grown as she has grown this summer she is bad to beat. Do you want anything fragile? Sweet Madame Cusin, with her pinky rose petals, like a butterfly's wing, or the fair white flowers of Alba rosea. Ask for a deeper shade of salmon pink, and I give you Madame de Watteville, a full blown Rose on every stem. It hardly pays to grow a Rose that only flowers to perfection, say, once in nine years; but Etoile de Lyon, with her daffodil yellow and red-green foliage, is worth growing, even on those terms. For an exhibitor of Teas, there is Cleopatra, as enchanting as her Egyptian namesake, with her big long-pointed bud, and Souvenir d'Elise, so strong in petal that she may and has been carried to three successive shows (hot tents and the toils of travel), and taken first in each instance. For richness of fragrance, beauty of shape, with her petals turned back, nothing has been found yet to touch old La France, and she too is constant in season and out. Running her close for scent is Boule de Neige, a curiously shaped Rose of the purest white, and with dark foliage. Among the other pinks, but differing as so many stars, are Marie Finger, Captain Christy, Egeria, and Lady Mary Fitzwilliam.

Do you know the warm flesh tint of a young baby's skin? Look at this loose petalled Viscountess Folkestone and see the close resemblance. There is another Rose, equally delicate in tint, but more cup-shaped and closer in habit, the pretty Cannes la Coquette, and Violette Bouyer would come in a good third. Of dark Roses their name is legion. In a decently managed rosery do you ever see a really bad Marie Baumann? I never do, and Charles Lefebvre is ever an old favourite. Fortune's Yellow, with her masses of golden bloom, alas! like fortune, is often fickle; but when she does bestow her favours, it is with a lavish hand. I wonder if Victor Hugo was ever so sweet and lovely as his namesake, and a W. A. Richardson in the flesh would need treatment for a sharp attack of jaundice.

No garden is complete without a Sweetbriar or two, and Lord Penzance, now that he rests from his legal labours, has done much for their improvement. I have still a lurking tenderness for the sticky Moss Rose of my childhood. Do you know its sharp pungent odour? The little Scotch yellows, the first to bloom of all this vast family, are perfect in their way, and make such glorious masses of colour in the garden at a time when colour is so wanting.

I cannot catalogue like a nurseryman, nor have I the ready and trained pen of a "D., *Deal*," a "W. R. Raillem," or a witty Dean of Rochester; but I do love my sweet flowers, and it is out of the abundance of the heart that one must speak. Never have they been so lovely or so abundant as in this glorious year of Jubilee, and it is but a fitting tribute that the greatest queen that ever lived should have her path strewn with wreaths and garlands in lavish profusion woven out of this regal flower. —THE MISSUS.

COMMENTS.—THE NORWICH SHOW.

AS a national society, the committee which manages its affairs is bound to make arrangements for exhibitions to suit its members in all parts of the country, and it falls to its lot to make geographical distinctions which are sometimes called in question. Why, it was asked three years ago, was Gloucester fixed on for a Southern show, and only this year Norfolk for a Northern one? Someone (I suppose waggishly) said, "Oh! of course, as the first three letters of Norfolk evidently designate something northern." East Anglia had, however, for a long time called out that it was neglected in our arrangements; so after communication with the Norfolk and Norwich Horticultural Association it was determined that the Northern show for the present year should be held there under its auspices, which has for many years been affiliated with the National, and is evidently well officered and managed. In one respect local exhibitors had cause for complaint. Their own show is held in the first week of July, and to put it off for a fortnight was, of course, a great tax upon them and their Roses; moreover, from many parts of England Norwich is not easy of access. Of course, the Southern amateurs did not expect to be present; the show by its date was intended for northerners, while the East Anglian contingent was in great force.

The exhibition was held in the delightful grounds of Carrow Priory, the seat of J. J. Colman, Esq. It was an extensive one, and was contained in five tents, but the one with which we have to do was a large and airy one, in which were staged all the exhibits intended for competition in the National Rose Society's schedule. The weather of the preceding week had been extremely hot and trying for the Roses; this told, naturally, more upon the H P.'s, especially upon the dark flowers, than on the Teas or Noisettes, although there were some fine flowers in all classes that were exhibited. There were, of course, few exhibitors from the South of the Thames, and Essex and Herts carried off the lion's share. Neither the North nor the northern Midlands took a very prominent place, and it was curious to see how in both nurserymen and amateurs the leading prizes went to one exhibitor in each division. Thus in the nurserymen's class the old veteran, Mr. B. R. Cant, carried off the Jubilee trophy, with all the principal prizes which he could compete for, and I think we may fairly say that to his son, Mr. Cecil Cant, is due a great deal of the honour. He evidently inherits the taste of his father, than whom no one understands better the way of setting up a box of Roses.

In the amateurs' division Mr. E. B. Lindsell swept the board, carrying off all the principal prizes, and now holding both the trophies for the present year. It has always been felt that as far as H.P.'s are concerned he was always almost unapproachable, but I think it must have been a surprise to many that he should have taken the prominent position he did in the Tea classes. He has always shown some good Teas in the mixed classes, though in the Tea and Noisette division he has not heretofore taken a prominent position, and now East Anglians and others will have to count him as a very formidable adversary in this division. Scotland was altogether unrepresented, as the list of the counties given by Mr. Mawley shows, nor did any come from Ireland, as Messrs. Dicksons did not exhibit. There were, of course, many exhibitors from Norfolk, but these were mainly in the local classes.

The two stands which stood out most prominently were those exhibited by Mr. B. R. Cant, for which he gained the challenge trophy, and that shown by Mr. E. B. Lindsell, to whom also fell the Jubilee trophy. In the former stand the most noticeable were of H.P.'s A. K. Williams, Madame Charles Crapelet, a very old Rose; Beauty of Waltham, which, though sent out in 1862, still holds its own as an exhibition Rose; Susanne Marie Rodocanachi, Duchesse de Morny, Marchioness of Londonderry, and Countess of Rosebery; while amongst Teas were Comtesse de Nadaillac, which seems to be good everywhere this season; Muriel Grahame, Innocente Pirola, The Bride, and Catherine Mermet. Messrs. Harkness & Sons were a good second, and some of their darker coloured flowers were of very great excellence; while Messrs. Paul & Son made a good fight for a third place.

Mr. E. B. Lindsell is so good a grower and exhibitor that we may be sure to find the very best Roses in his stand. We find him still clinging to the older varieties, and in his box were good blooms of such old-established favourites as A. K. Williams, Marie Baumann, Alfred Colomb, Beauty of Waltham, Souvenir d'Elise Vardon, Madame Victor Verdier, Merveille de Lyon, Her Majesty, Charles Lefebvre, Horace Vernet, and Duke of Wellington (not very often seen now). Rev. J. H. Pemberton was a good second; in fact, these two champions run one another very closely. Last year it was Mr. Pemberton's turn, and this year it is evidently Mr. Lindsell's. Mr. Lindsell's twelve Teas were very fine; with the exception, perhaps, of Maman Cochet they were all old-established favourites; indeed, it will be some time before such flowers as Comtesse de Nadaillac, Catherine Mermet, The Bride, Innocente Pirola, and Madame Cusin are supplanted. It was noticeable, too, as showing that distance does not form an insuperable barrier in the successful exhibition of the Rose that Messrs. Townsend of Worcester came from the extreme west, and carried off the first prize in eighteen trebles; the flowers were wonderfully fresh, especially when the heat of the weather was considered. Mr. Orpen, who is so well known as one of our most successful Tea exhibitors, obtained the prize for eighteen varieties with an excellent stand; but, as I have said, all the principal prizes fell to Mr. Lindsell, while the Rev. J. H. Pemberton followed closely in all classes as second, and Mr. H. V. Machin as third.

In the open classes there were some excellent stands, while in that for new Roses Messrs. Paul & Son exhibited good blooms of both foreign and home-raised Roses; they were T. B. Haywood, Marquis de Litta, Sylph, Bladud, Bacchus, Alice Furon, Captain Hayward, Helen Keller, and Mrs. W. J. Grant. With regard to this latter Rose it is satisfactory to find that in no instance that I can recollect has it been exhibited under its American synonym. As it was fitting on such an occasion a special prize was offered for Her Majesty, and was taken by Messrs. Paul & Son with some grand blooms. Messrs. Townsend & Son of Worcester had some grand blooms of Comtesse de Nadaillac, as had Mr. Frank Cant of A. K. Williams. The Tea division was one of exceptional interest, for the weather suited these Roses much better than it did the H.P.'s, and in the trade division Messrs. Merryweather & Sons occupied the leading position which they have so long coveted, their stand of twelve trebles being a very beautiful one containing grand blooms of Maman Cochet, Niphetos, Madame de Watteville, Golden Gate, Catherine Mermet, Comtesse de Nadaillac, Ernest Metz, The Bride, Souvenir d'Elise Vardon, and The Bridesmaid. The amateurs' division was also very strong, Mr. Lindsell, as I have said, taking the foremost positions, closely followed by Mr. C. J. Grahame.

Garden Roses, although very attractive, were not equal to those seen either at Portsmouth or the Crystal Palace. Mr. Machin occupied the premier position amongst amateurs, and Messrs. Paul & Son amongst professionals; amongst trade-growers Mr. Chas. Turner showed remarkably well, as did also Mr. Orpen amongst amateurs. The "displays" of Roses were not satisfactory, and the strictures of a well-known horticulturist in one of your contemporaries this week are well deserved; although I cannot agree with him that the Rose is a flower that lends itself easily to decorative purposes. Of course, this sounds like heresy, but at the same time I believe it to be true.

The medal Roses deserve notice; the blooms which obtained the awards were in each case exceptionally good. The Muriel Grahame with which Mr. Orpen carried off the medal was a magnificent flower. Its comely shape, good substance, and its distinct colour contributed to make it a very lovely specimen of this variety, and surely we may say that when a Rose during the first year of its general distribution carries two silver medals at the exhibitions of the National Rose Society its claim to being a great acquisition can hardly be doubted. There are some who shake their heads and say it will revert to The Bride; but I do not think that Tea Roses are apt to return to the type. The other Tea Rose which obtained the medal in the nurserymen's class was a magnificent bloom of Niphetos, certainly the finest white Tea when caught in such a state as this that we have. I saw somewhere the other day that a writer mentioned Kaiserin Augusta Victoria as the best white Rose that we have; but I confess that I cannot see the whiteness of it, although I am quite willing to admit its beauty. The Roses which gained the medals in the H.P. class were Mrs. J. Laing, a rather undersized but a well formed bloom exhibited by Mr. S. Berger of Stevenage, Herts; while Messrs. Harkness & Son secured it amongst nurserymen for a beautiful and well formed flower of Earl of Dufferin.

On the whole, then, we must conclude that the northern exhibition was this year a successful one, and will, we hope, give a fillip to Rose growers in the eastern counties; and many thanks are due to the Secretary and Committee of the Norfolk and Norwich Horticultural Society for the efforts which they made to make the first National Show held in the eastern counties a great success.—D., *Deal*.

BRIEF NOTES ON ALPINE FLOWERS.

(*Continued from page* 54.)

ACÆNA MICROPHYLLA.

THE Rosy-spined Acæna, although comparatively plentiful in collections of alpine flowers, is yet worthy of even wider acceptance than it at present receives. Its usefulness is not limited to the rock garden or rockery, as it will be found serviceable in carpeting some borders occupied by taller growing plants or in semi-wild places where a close cover of vegetation is required. It is as widely known by the name of A. novæ-zealandiæ as by Hooker's one of microphylla, which has the priority, and is also better than the former name, there being several other species natives of New Zealand.

Acæna microphylla is of a creeping habit of growth, and is exceedingly dwarf, its height being generally from 1 to 2 inches. The pinnate leaves are of a pretty green, but the flowers are extremely ineffective, produced though they are in dense little globular heads. The beauty of the plant consists in its leaves and the bright crimson spines which so adorn the heads of flowers. These give a mass of this Acæna a very beautiful effect. It does not like a very dry position, although it will grow in such, and prefers a rather moist, peaty soil with a fair amount of sun. In the rock garden it is often found very useful for growing between the stones in rocky pathways or along the edges of the walks. It is readily increased by means of division.

CORONILLA VARIA.

We have here a plant eminently suitable for large rockwork, and quite out of place among the smaller encrusted Saxifrages, the exquisite Dianthi, and other diminutive and choice alpine flowers. The free growth, trailing habit, and pretty flowers of this Coronilla are better seen trailing over a sunny ledge of rock or covering some almost perpendicular crevice than when grown in the border, even if trained, as some recommend, over sticks so as to form a miniature tent. The name Coronilla, or "Little Crown," is a very appropriate one from the way in which its Pea-shaped flowers are clustered together.

Like most of the Leguminosæ, it possesses elegant foliage as well as graceful flowers, and these merits are enhanced by the colour of the blooms. Plants vary in the shade of the colour shown by the flowers, and the blooms themselves also give diversities of tints. The colour varies in some specimens from white to almost purple. Thus the name of "Various-coloured Coronilla" is appropriate, although the other trivial or popular one of "Rosy Coronilla" is more pleasing, and well represents the greater number of the plants grown. It will grow 4 or 5 feet in length, so that anyone planting it must allow for this feature when choosing its position. It is recommended that division of the roots be followed for increasing the stock; but one finds that young plants raised from seed grow more rapidly and are more readily established than divisions of old plants. Seeds are easily obtained, and may either be sown under glass or in the open.

It is a native of Europe and Asia—a variety, named by Boissier libanotica, coming from Armenia. It in no way detracts from the beauty of this plant to know that it has been used as a food for cattle. It is to be doubted, however, if it were found of much value for this purpose. A plant cultivated in 1597 and of value for cattle would have been more widely grown than it is now. It is as an ornamental plant that it is spoken of here, and it can be confidently recommended for this purpose in the positions already mentioned. It begins to flower in this garden in July, and continues for a month or two to produce its prettily coloured heads of bloom.

CAMPANULA PELVIFORMIS.

Botanists and gardeners do not always agree in the names of plants, and when the latter are checked with regard to an error in nomenclature they are apt to retaliate by saying, with some degree of truth, that botanists differ among themselves. The plant or plants under notice may more correctly be named C. carpatica pelviformis, but this is too cumbrous a name for general use. A plant named C. c. pelviformis is said by a high authority to be a seedling of C. c. turbinata. There are, however, several pelviform or saucer-shaped varieties, and some two or three of these approach more nearly to the typical C. carpatica than to the variety known as turbinata.

One of the best of these was received from a well-known nursery in

Chester, and it is generally an admired plant by all garden visitors Its colour is a light porcelain blue, and the habit is stiff and erect—stiff in the sense of firmness, but without inelegance. It is a little later this year than usual, and did not begin to bloom until the end of June. It will continue to flower for a long time still. This variety is increased by division. Another, and, in my opinion, less beautiful variety has smaller, darker, and more cupped flowers than this, but has the same upright habit.

A very distinct variety of more trailing habit has for some time been a mass of bloom. It is also darker, rather more so, indeed, than C. c. turbinata, and is very effective where it grows close to a narrow gravel path at the base of one of the rockeries. It is one of the most profuse bloomers among the Campanulas, a statement which means much, as those well acquainted with the beautiful Bellflowers well know. There is no difficulty in growing these varieties of C. carpatica, a light but fairly moist soil suiting them well. A slight shade from the height of the mid-day sun will prolong the flowering period.—ALPINUS.

(To be continued.)

ABUTILON CULTURE.

(*Continued from page* 96.)

FOR general decorative purposes Abutilons may be grown in almost any shape. Pyramids can be formed by stopping the lead at about every foot of growth, and the side growths to 6 inches, keeping them from flowering each year until a good well-furnished habit is attained, and then allow them to flower. It is of great importance that an equalisation of growth be attained, therefore gross irregularities must be cut away unflinchingly, seeking to apportion the vigour as far as practicable throughout all parts, having the plants as well furnished at the base as at the summit. Well grown specimens rival, if they do not excel, Fuchsias in picturesque loveliness.

Useful decorative plants are raised from cuttings of the growing points, choosing vigorous examples early in spring. The cuttings root readily in a close frame stood in a Cucumber pit, if a gentle bottom heat is afforded. They may either be inserted singly in thumb pots or be placed just clear of each other around the side of a 6-inch pot, repotting them in the latter case so soon as they are rooted, and keep them rather close until established. I prefer the single pot, and so soon as the cuttings are rooted remove them to shelves where they will be just clear of the glass. When inured to the air of the house and the pots full of roots shift into 4-inch pots, continuing in a gentle warmth and a light position until established, when they may be moved to a cooler house, but keeping rather close so as not to give a severe check. A span-roofed house or pit is best, in which the plant can have a cool moist base to stand on, and where they can be near the glass without touching it. The plants must also have plenty of space sideways, and as these make very handsome decorative plants they must be given every encouragement in the shape of a little artificial manure mixed with the first and all potting compost, and a sprinkling on the surface of the pots about every ten days, just a pinch between the finger and thumb, evenly disposing it on the surface for the waterings to carry down to the roots. Shift from 4 to 6-inch pots, and if all has gone well the plants will be ready for transferring to 8-inch pots early in June, always allowing them to fill the pots with roots, but before they become matted shift into larger pots. These—viz., 8-inch pots—are the size they are set to bloom in, and the plants being grown in a cool house in plenty of light they will branch from the base, the plants being trained with a single stem, and so be furnished to the pot, affording a fine head of bloom from at least early August right away through the autumn and winter. These plants are fine for greenhouse or conservatory decoration in late summer and autumn, and in a light properly ventilated house, with a minimum temperature of 50°, flowers will be borne successionally through the winter into the spring months.

For winter flowering I find cuttings rooted early in April, grown similar to those rooted earlier, and transferred to the largest pots not later than mid-July, the most suitable, as they will be about 15 or 18 inches in height, and coming into flower by mid-September or its close, and then placed in a house with a temperature of about 50°, they will be at their best during the early autumn and winter months. In winter they must not be overwatered, and the air of the house must be buoyant, damp, especially when accompanied by cold, being fatal to the flowers.

I have tried placing the plants intended for winter flowering outdoors in summer, with the result that though a fine full habit was secured, the plants did not flower so satisfactorily as those that were grown from first to last under glass. The moisture of late summer I apprehend made the growth too soft, and not unfrequently the soil was soaked, and the roots were killed. Some, however, manage the plants very well stood on and partially plunged in ashes during the summer months, housing at the close of September; therefore my lack of success with plants so treated may be due to inadaptibility of location.

There are, perhaps, no finer plants for bedding than Abutilons. They may be raised for this purpose by inserting cuttings early in spring, February or March, and growing them on so as to have sturdy well-established plants in 4 or 5-inch pots, well hardened by the close of May or early June. For bedding purposes, however, it is best to root the cuttings in gentle heat during the early part of September, repotting singly when rooted, keeping them in a house from which frost is excluded and rather dry during the winter. They may be left in the store pots over the winter, repotting in spring, but the single-pot system of wintering is a long way ahead of the poverty huddling method. Transfer to 5-inch pots in spring, and if the plants have become tall cut them back to about 4 inches from the soil. This should be done and the plants allowed to start again before they are potted. Encourage growth by liberal treatment, hardening them well before planting out.

Outdoors give them a sheltered situation, as their flowers are liable to be damaged by strong winds. They look best on a gentle elevation, yet are highly effective when viewed on a level or even from a height. They require a bed of good rich light soil, deeply stirred, to grow in, and made moderately firm so as to induce flowers as well as foliage, and plant them about a foot, and not more than 18 inches, apart. It is better to raise a fresh stock of plants annually than to lift and store the old ones.—A.

PEAS AT MAIDSTONE.

A SHORT time since, when examining the Peas growing at Chiswick, where true character is, because of the porous nature of the soil and the exceedingly superheated condition of the atmosphere, not always correct, Mr. George Bunyard invited me to run down to his seed farm at Maidstone, and see how Peas and Beans did with him. I could not spare time until the 22nd, by which date all the earlier varieties were ripe, and the greater portion of the main crop section were a little past tenderness.

None the less, I had an interesting visit. The seed farm is very extensive, comprising over 200 acres, and lies on the high land two miles out of the town towards Sittingbourne. The soil is fairly good, on a dense chalk base, and, of course, the air is of the freest—indeed, it is in relation to soil and atmosphere the very converse of Chiswick. I found not short rows, but rows extending to hundreds of yards in length, all properly staked, and the seed sown thinly. I often think that to see Pea plants in true character we still sow far too thickly. I have sown at the rate of one pint per 100 feet, and found from good seed that to be rather thick. I should say, judging from appearances, that Mr. Bunyard's drill made a quart reach 300 feet, which gives very different results from what is commonly seen in the thickly studded plants in gardens.

But apart from getting a good crop of fine pods, everyone familiar with Peas knows how they tend to sport, and how needful it is to preserve stocks pure that they should be well rogued. Thin sowing and sticking greatly facilitate this, and there can be no doubt but that in this case it is thoroughly well done. That Peas do not intercross, grown side by side, is a blessing. Did they do so, as many other things will, to keep them pure would be a task indeed. Now I give the diverse varieties still standing, when I saw them, just as they came, and they serve to show that Maidstone and all that portion of the beautiful county of Kent around it can get a fine selection of Peas, as, indeed, the gardeners and cottagers of the county will have them. Between Maidstone and Swanley, the county is indeed fortunate in its seed growers and seedsmen.

The first batch of Peas included that first-rate long season and most useful variety, Walker's Perpetual, one in great request. This is 3 feet in height, carries a great crop, and the peas, even when the pods seem old, are still tender and sugary. Eckford Critic is less widely known. This grows to a height of 4 feet, and closely resembles Ne Plus Ultra, the pods long and full. The true Ne Plus Ultra is also largely grown; but that needs no description. The Duchess has become almost as well known as the Duke of Albany, which it closely resembles, but its pods are rather straighter and are well filled. Epicure reaches 5 feet in height; the pods are long and slightly curved. It is a great cropper and of much excellence; most certainly one of the finest of Peas. Sutton's Dwarf Defiance is 20 inches in length, and a very fine bodied dwarf variety, cropping heavily. It is a keen competitor in this class with Carter's Daisy, which is here also in quantity, and cropping well too.

Another capital Pea from Reading is Sutton's Windsor Castle, 3 feet in height, a great cropper, and has fine pods. A good Pea of Laxton's raising is Alfred the Great, which is a very fine form of Ne Plus Ultra, having rather longer pods than the type carries. It is 5 feet in height, and has a heavy crop. Fairbeard also some years ago gave us the famous Champion of England, as represented by Marvel, 4 feet high, a capital cropper, and of excellent quality. Of course Autocrat—not badly named, for it is of Peas almost the autocrat of the dinner-table—is here in a big breadth. The entire plant is, in spite of the long drought experienced, literally green as grass. It is, indeed, a splendid variety, cropping heavily. Another good Pea, but one that seems not to have been fully appreciated, is Sharpe's Triumph, 3 feet high, a splendid cropper, and, apart from its garden merits, is one of the finest market field Peas ever sent out. That fine new Pea, Boston Unrivalled, has pods of great length and profusely borne, is here in quantity also. A grand podding Pea is this, and, with Alderman, can hardly be excelled. A good stock of Veitch's Perfection is also grown.

Altogether, including such first early varieties as Bunyard's Early Dwarf, Chelsea Gem, Gradus, and William the First, it will be seen that an abundant selection of Peas is offered in Maidstone. Whence improvements are to come it is hard to tell. Pods and crops are now large enough for anything.

There is here a fine stock of Bunyard's Exhibition Longpod Beans, which seems to be a capital development of the Johnson's Wonderful type, the pods being not only very long, but tightly filled, seven and eight beans constantly occur in the pods. The early erect Longpod, a good stock of Taylor's Broad Windsor, and the large Mammoth Windsor are also in great abundance.—A. D.

Notes & Gleanings

EVENTS OF THE WEEK.—Horticulturists will not be quite so busy during the next seven days, though there are several provincial fixtures to be attended. Amongst these may be noted Alderley Edge on Friday, Weston-super-Mare on Tuesday, and Cardiff and Bishop's Stortford on the Wednesday, all of these being usually good shows.

—— WEATHER IN LONDON.—The heat in London since our last issue went to press has been exceptionally intense—indeed, Thursday last was one of the hottest days that have been experienced this summer. Friday was only a very little cooler, but on each day since then it has been pleasanter, owing to the breezes that have prevailed.

—— CLIMATOLOGICAL OBSERVATIONS AT DRIFFIELD, JULY, 1897.—Mean temperature at 9 A.M. (corrected), 63·17°; wet bulb, 57·69°; mean maximum, 69·58°; mean minimum, 49·04°. Highest, 79·6° on 30th; lowest, 38·0° on 18th. Mean of maxima and minima, 59·31°. Mean radiation temperature on grass, 43·91°; lowest, 30·2° on the 18th. Rainfall, 0·475 inch; number of rainy days, nine; greatest amount on one day, 0·1 inch on 5th and 28th.—W. E. LOVEL, *York Road, Driffield.*

—— COMMON PEARS.—Although the Pear crop this season is generally a light one, yet I have seen on very stiff soil, literally a strong clay, at Hook and Chessington, in Surrey, some wonderful crops of early and common varieties. Thus at Hook there are huge trees of the Windsor Pear, one said to be 130 years old, and in perfect health, carrying wonderful crops. The largest tree has probably on it 20 bushels. Further on, at Chessington, Green Chisel and Autumn Bergamotte, as well as other varieties not easily recognised, but of the same early and common order, and fine healthy trees, too, are heavily fruited. Certainly these trees, fruiting so constantly, show that they have very robust constitutions, and that they like the strong clay soil thoroughly. Large trees of Williams' Bon Chrêtien, have not a fruit.—D.

—— HOOK FLOWER SHOW.—At this local exhibition, held last week, Mr. E. Burrell, gardener to H.R.H. the Duchess of Albany, Claremont, staged numerous vases of hardy flowers in great variety, and some capital black and white Grapes, Peaches, Nectarines, and Gooseberries. Mr. Weddell, gardener to F. Clayton, Esq., sent a pleasing group of plants; Messrs. Barr & Sons, Long Ditton, had a capital collection of hardy flowers in bunches; Mr. Will Tayler, Hampton, sent beautiful H.P. and garden Roses, and Mr. Muxworthy charming Begonias, all exhibits being very highly commended. Of table decorations a charming exhibit was that of Miss Clode, which consisted of yellow Coreopsis flowers, sprays of Eryngium planum and Gypsophila, taking the first prize.

—— AN INTERESTING COMPETITION.—Two years ago Messrs. Cannell & Sons of Swanley placed at the disposal of the Richmond Allotment Holders' Association a handsome sash and £6 in three prizes, for competition between the allotment holders of Surrey and Middlesex. There was no competition that year, and last year only Hook (Surrey) entered the lists against Richmond, and came off second best. This year the Richmond Association handed over the place of competition to Hook, and as a result there were at this village Show on the 28th ult. five associations competing. These were Surbiton (the District Council Allotments), placed first with 61 points, County Council scale; the exhibits consisting of nine kinds of vegetables only. Richmond (the Corporation Allotments) came second with 56 points. Petersham (village allotments) was third with 55½ points; and Tolworth and Hook came with 53 and 45 points respectively. The latter Association members having their ordinary classes, put all their best produce into these, or they might have done much better. Next year, if the competition is continued, it will be at Surbiton, where only the challenge class can be competed in. The class aroused great interest, and numerous members of the Associations of Richmond, Petersham, and Surbiton came in the evening to learn the result. There is great probability that several other associations will enter next year. The classes were this year judged by Mr. Dean, Surrey C.C. Horticultural Instructor, and Mr. E. Burrell of Claremont Gardens.

—— THE ROYAL HORTICULTURAL SOCIETY.—The next Fruit and Floral meeting of the Society will be held on Tuesday, August 10th, in the Drill Hall, James Street, Victoria Street, Westminster, 1 to 5 P.M. A lecture on "Cross Fertilisation of Florists' Flowers" will be given at three o'clock by Mr. James Douglas, F.R.H.S.

—— RAINFALL AT HAYWARDS HEATH.—The total rainfall at Haywards Heath, Sussex, for the past month was 0·50 inch, being 2·16 inches below the average. The heaviest fall was 0·18 inch on the 21st—rain fell on seven days. The maximum temperature was 86° on the 17th, minimum 43° on the 8th. Mean maximum 78·22°, mean minimum 53·07°, mean temperature 65·64°, which is 3·87° above the average. With the exception of 1885, this has been the driest July in our Mid-Sussex record of seventeen years, and rain is very much wanted. —R. I.

—— "FAMILIAR GARDEN FLOWERS."—Uniform with their popular edition of "Familiar Wild Flowers" Messrs. Cassell & Co. are now publishing the well-known "Familiar Garden Flowers" in twenty-one parts at 6d. each. The letterpress is from the pen of the late Mr. Shirley Hibberd, and is written in that gentleman's fluent and readable yet instructive style. There will be in the complete work 200 coloured plates by Mr. F. E. Hulme, F.L.S., and those that appear in part 1 comprise Wallflower, Michaelmas Daisy, Petunia, Monkshood and several others, each accompanied by explanatory notes. The paper is good, and the type clear, and at so low a price that the book should have a large sale. The parts are to be published weekly, and the second will be ready on the 13th inst.

—— LINCOLN AUTUMN SHOW.—Sixty classes are scheduled as being for competition in the exhibition to be held under the auspices of the Lincoln Chrysanthemum Society on Thursday and Friday, November 11th and 12th, in the Drill Hall of that city. There is an open section, as well as one for amateurs, and another for cottagers, with about eighteen miscellaneous classes in competition for which there is no residential restriction. Some capital prizes are offered for cut blooms and groups arranged for effect. Vegetables are neglected. For fruit we notice under the heading of Plants in the cottagers' section a class for five culinary Apples, and presume that plants in pots are required, for beneath are given suggestions as to size of pot and height of plant. The Secretary is Mr. W. Pask, from whom schedules and full particulars may be obtained.

—— ROYAL BOTANICAL SOCIETY OF MANCHESTER.—The schedule of a Chrysanthemum show that is to be held in the Town Hall, Manchester, on Tuesday and Wednesday, November 16th and 17th, has been sent to us by the Secretary. It is one of the smallest we have seen, containing twelve classes only, and is possibly unique in another respect—namely, that of offering its best prizes for incurved blooms. This class is for thirty-six incurved in not less than eighteen distinct varieties, nor more than two blooms of one sort, for which £7, £5, £3 and £2 are offered for the four best collections. Other prizes also are good, but full particulars may be had on application to the Secretary, Mr. P. Weathers, Royal Botanical Gardens, Manchester, who is hoping to get up an exhibition of good quality even if it is not large.

—— LITIGATION BETWEEN ORCHID GROWERS.—Judge Parry, sitting at the Manchester County Court, July 28th, heard the case of Ashworth *v.* Wells. It was an action brought by Mr. Elijah Ashworth of Harefield Hall, Winslow, against Mr. Matthew Wells of Sale to recover £50 damages in respect of a breach of a warranty as to the nature of an Orchid. It was purchased by the plaintiff in 1895. The plant figured in the catalogue as "Cattleya Acklandiæ alba, the only known plant." On behalf of the plaintiff, a number of well-known cultivators were called. They included Dr. Hodkinson and Mr. G. S. Ball, solicitor. Their evidence was to the effect that if the Orchid had been an alba, perfectly white and well shaped, it would have been worth from 70 to 150 guineas. It turned out, however, that the plant only produced a coloured flower of no particular value. It was the plaintiff's case that he believed the Orchid to be a genuine alba, and he thought he had got a bargain when he got it for 20 guineas. Mr. Tweedale, who appeared for the plaintiff, informed the Court that the action had been brought as a test case. It was submitted by Mr. Newman, who appeared for the defendant, that there had been no deception. His Honour reserved judgment, remarking that as two years had elapsed between the purchase and the parties coming into Court, they probably would not object if he took time to consider his decision. He added that the case would give him something to think over during his holidays.—("Gardeners' Chronicle.")

—— SPIRÆA ARIÆFOLIA.—How beautiful is this species with its creamy white plumes brought out in relief by the foliage of the shrubbery. After the first flush of summer in the flowering shrubs is over this graceful North American plant takes a high position. One regrets the evanescent character of its flowers.—E.

—— THE APPLE CROP.—Apples begin to show up more prominently as they swell in size, but we fear in most districts there will be but a poor yield. Taking the Apple-growing counties of Devon, Hereford, and Worcester we should say there will not be above half an average crop. This will make cider rather dearer from the pound's mouth in gathering time, but it will not affect that in barrels materially. Plenty, says the "Rural World," can be bought now at about 8d. per gallon at the farmer's door, and merchants are selling at about 9d. or 10d. per gallon. There is not an industry in England more neglected than the cider industry, and if properly managed there is no more profit to be made from any branch of farming.

—— THE AGRICULTURAL RATINGS ACT AND MARKET GARDENS — In the Queen's Bench Division in the High Court of Justice, on August 2nd, the appeal case of Smith *v.* Richmond and Piper was heard. The Attorney General, in support of the appeal, said the case raised the important point whether greenhouses or hothouses were buildings within the meaning of the Agricultural Ratings Act, 1896, which provided that the occupiers of agricultural land should be relieved of half of the rates payable in respect of such land. The respondent Piper was a market gardener and nurseryman, and claimed that his ground being a "market garden" was entitled to the relief granted by the Act, notwithstanding the fact that certain greenhouses and hothouses had been erected on the land for the purpose of growing Grapes, Cucumbers, Tomatoes, &c. The Assessment Committee held that the glass houses were buildings within the meaning of the Act, and therefore not entitled to relief. The justices, however, held that the land in question was a market garden, and entitled to relief. He (the learned counsel) submitted that the Act granted relief to agricultural land only, and not to buildings, even though they were used for agricultural purposes, and that therefore the decision of the justices was wrong. Mr. Justice Collins, in giving judgment, regretted to say he differed from the views of his learned brother, but he had come to a clear conclusion on the subject. The question was whether the hereditament which was the subject matter of this discussion was or was not a market garden. In his opinion the glass houses on the property were necessarily part of the market garden, and the land was not the less used as a market garden because the glass houses were erected upon it. He was of opinion that the buildings in question were part of the market garden, and as such the hereditament was entitled to the exemption given by the Act to market gardens. Mr. Justice Ridley said it was with great hesitation that he differed from his learned brother, but he had not been able to construe the Act in the same way. It appeared to him that the whole scope of the Act was to relieve what was called and defined as agricultural land. The intention of the Legislature was that arable, meadow, or pasture ground, cottage gardens of certain dimensions, market gardens, nurseries, grounds, and so forth were to be included as agricultural land, and that the occupiers should pay half the rates. The object was to contrast land entitled to relief with the buildings which were not so entitled, and there was no suggestion in the Act that buildings were entitled to relief. The dividing line seemed to him to be between land and the buildings, and if they once found a building in existence on the land it must be treated as such. But he withdrew his judgment, and the appeal was dismissed. Leave to appeal again was granted.

THE INFLUENCE OF TEMPERATURE ON PLANTS.

THE variety and magnificence of flowers are such that observations on the phenomena they present is indeed a delightful labour, divested of all wearisomeness. It is most important to notice the difference in colour and odour of flowers in various latitudes. An inhabitant of the north visiting the south is invariably much struck by the increase in these respects. Warm climates favour the development of essential oils. In the north, for example, the Oleander has but a slightly perceptive scent, but in Italy it exhales a powerful perfume.

The seasons, too, exercise a marked influence upon the colours of both leaves and flowers, more especially the latter. At the close of winter white predominates among the tints of the corollæ, to be succeeded by deep and vivid dyes that fade again in autumn. The temperature of the earth, especially that of the layers penetrated by the roots of trees, wants especial attention. It would be most interesting to follow the daily fluctuation of several thermometers, whose bulbs should be equidistant, in a vertical line, the uppermost one immediately under the surface, the others from a foot to a yard below it. This has been practised for many years with most interesting results, not only for botany, but also for meteorology. It is remarkable that whilst many flowers are susceptible to solar influence, others, on the contrary, are insensible to it.

Although the amount of influence due to each element of growth cannot be definitely determined, it is evident that temperature is a most important factor. Its influence on the organisation of a plant is like that of vital force, and to be estimated in squares of degrees. Two spring days, for instance, when the glass registers 50°, are not equal to one of 70°, for the effect of the latter would be greater than that of the two former. A country where the winter is mild, notwithstanding its latitude being high, will produce flowers earlier than other countries in a lower latitude.

Compare the west coast of England, for example, with France or Lombardy; Snowdrops and Crocuses flourish in full vigour before they are ready to open in Parma. But as the temperature increases with marked differences of intensity an equilibrium is soon established, and the southern regions in their turn take and maintain the lead. The period between foliation and flowering would also be less in Italy and Spain than in this country. It is said that plants in Belgium wake from their winter sleep towards the end of January. The farther from the sea towards the interior the lower is the temperature. Islands have a milder climate than continents.

The Hazel tree buds in the neighbourhood of London the first week in January, but in Brussels, singular to say, not before the end of February—a wide interval. The Crocus vernus also appears here at the beginning of February, nearly three weeks earlier than in Brussels. The greater mildness of our winter gives London the precedence at the commencement of the season, but it soon diminishes. In March it is only twenty days, in the first half of April only four, but from the middle of that month to the end of June Brussels is a week in front of London.

Extending the comparison to a more northern locality (Stettin in Germany) the advantage at starting in favour of London is double that over Brussels, but in July and August Stettin and Brussels are a week in front of London. According to observations made at Kelso in Scotland the period of foliation there is two days in advance of Brussels; Christiania in Sweden is fifty-two days later. There is a Chestnut tree in the gardens of the Tuileries in Paris which flowers abnormally early. It is called the Vingt Mars. It blossoms long before the others in the same gardens. It is said that latitude corresponds approximately in flowers, but there are important exceptions. Thus, although the difference between Christiania and Hamburg is but three days, it increases between the south of Germany and Smyrna to a week; whilst between Naples and New Jersey, both in the same parallel, it is actually two months.

An elevation in this country of 1000 feet is equivalent to a delay of fourteen days in the development of vegetation. A variable is more favourable than a uniform temperature. At Berlin, where the cold is great in winter, the orangeries flourish better than with us, whilst at Astrachan, where the thermometer at times registers 40° below zero, the most delicious Grapes are reared. Thus it will be seen that forwardness is not a constant beneficial characteristic of vegetation. The revivication of plants commences with the cessation of frost with us, and the period of foliation is compressed between the first great movement of vegetation and the covering of the plant with leaves, say about the end of April, from which time to the middle of July is the flowering period, whilst that of fructification is from that date onwards till the falling of the leaf.

The latter process depends mainly on temperature, the leaves generally falling with the first frost. The ripening of grain we all know is entirely dependent upon temperature. In Siberia, for instance, where it is above zero only for four months in the year, only Rye can be grown. This is only brought about by the action of the long day, which compensates in a measure for the weakness of solar action. Flowers present many interesting problems. In what degree do they depend on solar light and on the amount of moisture in the atmosphere? Why do some open in the day, or at certain hours, and others at night, some only when receiving the sun's rays, which, by-the-by, causes others to close? Do leaves close when their flowers open, and *vice versâ*?

Is there any relation between the colour of flowers and the time when they bloom? These are questions suggested in connection with the periodic phenomena of plants. The sun, as we say, exercises a positive and a negative influence, opening some flowers and closing others. Flowering plants, it has been demonstrated, grow better on a level surface than on slopes. The best slopes are the south and the south-eastern. The number of flowers produced in sunny spots is equal to three times that in shady situations. There is a difference in the colours of flowers according to the time of year. Thus white predominates in spring, and yellow in autumn. White flowers are most numerous throughout the year, yellow next, orange, red, green, blue, violet and indigo following in proportion as enumerated.

The proportion of flowers which open and shut is greatest in the yellow, smaller in the white, diminishing in the red, and least in the blue. White flowers increase rapidly from January till the vernal equinox, less rapidly from March to the middle of May, after which date they decrease. The greatest increase of yellow flowers is from April to June. Red flowers are more numerous in February than in April; they increase thence till September, and diminish in October and November, when red is the only colour remaining visible, save of late years in the greatly developed Chrysanthemum. In these phenomena there is a manifest dependance on the rise and fall of the temperature.—WM. NORMAN BROWN.

MINLEY MANOR.

THE county of Hampshire abounds in broad valleys, high hills, winding streams, waving woods and broad plains; and where its vegetation is practically limited to coarse grass and golden Furze it is interesting and even picturesque. Confining ourselves, however, to horticulture, we find that there are many beautiful estates maintained in splendid style, and amongst these is Minley Manor, near Farnborough, the home of one of our banker princes, Lawrence Currie, Esq. Here, in a lovely home, rest can be found from London's cares, and at the same time pure air can be had for the benefit of the organs that become sullied by the smoke of towns.

Much had been heard of the beauties of Minley—of the mansion, the grounds, the woods, and the plains, but it was only recently that, through the kind interposition of Mr. Jas. H. Veitch, the long desired visit was made an established fact. Less than two weeks ago was this journey made, and despite the drought that had then prevailed for a considerable time, an estate was seen which amply repaid the long train ride. To the writer it was a day of repose, despite the fact that many miles were traversed by rail and road and greensward. It was not a time of absolute quiet, for ever and anon would be heard, with at first startling distinctness, the boom of the guns of regulars and volunteers in the canvas town of Aldershot. These, however, lent the charm of variety for which we are all athirst. "Anything for a change," we are prone to say, and then when we have secured it, we do not perhaps know how to appreciate it properly.

Having taken careful stock of the instructions given by Mr. George Profit, the steward of the Minley estate, no trouble was experienced on detraining at Farnborough in finding our host and guide, for both these offices were undertaken by Mr. Profit himself. Anon we were bowling along comfortably towards our destination, uninterrupted by the several soldiers who were zealously searching for their enemies in the sham fight that was then being waged in the surrounding country. They gave one the impression that the heat was troubling them more than those enemies who were striving for the victory in this bloodless warfare. Leaving them as well as the village of Cove far behind, we sped by good country roads towards our destination, and the farther we progressed the more impressed we were by the natural beauty of the country through which we were travelling.

Turning down a side road, abutting upon which are the grounds of Sir Phillip Currie's Hampshire home, we quickly reached one of the several entrances of Minley Manor. A handsome lodge stands at the gate, while on each side are trees with seas of Heather to soothe the eye on every hand. From our guide we learn that the lake is the place to which he is driving, and following his directions we soon catch glimpses of the water between the trees, while far beyond in the Long Valley of Aldershot the tents of the soldiers are dotted thickly about. It is a lovely view of an entirely pastoral scene, and one that everyone would be forced to admire. Every now and again as we ascend and descend with the gravel road the view of the lake has been made more extensive by the removal of a number of trees, and at last we enter upon a grass drive that leads down to the water's edge. There are miles of grass as well as gravel drives on the estate, and admirably are they all maintained.

Alighting from the trap we make the preparations for a tour by water in a punt, and while this is being got ready we have a moment's peep in the boathouse, a substantial looking structure that is admirably adapted to the purpose for which it was erected. It is built upon good foundations and is not likely to come to decay for very many years. Of the lake itself much might be said, but a little will have to suffice. Its surface is broken by many islands of different sizes, upon the largest of which stands a thatched rustic summer house, and to this the boat was directed by strong and skilful hands, the landing stage which was cleverly hidden from the boathouse soon coming into view.

Walking round this island we at last come to realise what an immense stretch of water lies all around, and learn that it covers an area of about 40 acres. Commenced by the late B. W. Currie, Esq., four years ago, all the work has been done by Mr. Profit, and considering the brief space of time since a start was made, the result is nothing short of remarkable, for saving on the banks there are no visible signs of newness. The summer house, the inside of which is painted blue and white, looks clean and fresh; while the outside, all made up to pattern from timber cut on the estate, has quite an air of age with its thick thatch of straw and Heather and its surroundings. It is built in four bays, so that shelter can always be found from wind, and many beautiful plants, shrubs, and trees have been planted around. The selection of these has been made skilfully, and their condition proclaims how well they are thriving.

Re-embarking, we pass along the shore towards the other islands, to Sir Phillip's Creek at the head of the water, and to the overflow on the opposite side, returning beyond the large island to a handsome bridge of stone and red brick, which spans the water at its narrowest part. Immediately we have passed this we enter upon the stretch of water leading directly to the main entrance for the supply to the lake. Here there is a long avenue of recently planted Water Lilies, comprising all the best varieties at present in cultivation. Unfortunately the ducks have taken a fancy to the flowers, and make short work of them by pecking them in pieces. The plants as yet are only small, but they will, when thoroughly established, present a glorious sight with their beautiful blossoms of rose, yellow, and white. As we progress over the water we get occasional glimpses of the Manor between the trees, but always at too great a distance to see precisely what it is like. Instead of utilising the punt to return we pass by grass walks back to the boathouse, and see as we go how enormous has been the work of making this grand piece of water, which is in places about 10 feet deep. It is a monument to Mr. Currie's memory, and a great credit to Mr. Profit for his share of the work. Of course, when the banks are all finished it will be much more beautiful than it now is.

We now move rapidly away from the water on a broad smooth gravel drive, which is of a peculiarly good colour, and learn that every bit of gravel that is required is dug from pits on the estate. On each side are broad stretches of pure sand, in which even the Heather does not grow as it should do. We see in the distance hills clothed with trees, and advancing to the foot find them covered with magnificent Bracken, and notice that the character of the soil has changed completely, and is now of a loamy nature. Here, where alterations have been made and Heather planted, it grows luxuriantly on the slopes, and looks entirely different from the stunted growth on the sandy waste below. The trees vary in character very considerably; but Firs and Pines largely preponderate, and specimens of both may be seen of good size and beauty. Splendid Elms are noticed here and there, while Beeches and Oaks occur at frequent intervals. A feature that cannot fail to attract the attention of the visitor is the clever manner in which, when alterations have been carried out, every point of natural beauty has been seized upon, accentuated, and as far as possible improved.

Through a forest of Pines we emerge into a main road that divides the estate, and which has been improved by the late Mr. Currie, for from it turns the main entrance to the manor. But leaving this again for a short time we make straight for a broad table-like plateau known as Hartford Bridge Flats, whence views of very great beauty may be had in all directions. Almost across the centre of this is the main road from London to Southampton, and along it towards the latter town we continue for nearly a mile until a cross road is reached leading again to the estate, into which we drive down one of the most charming lanes one could possibly conceive. Flanked by high hedges in which Roses and Honeysuckle abound, and overhung by trees beneath which one is compelled frequently to bend the head, before and behind beautiful vistas and occasional peeps through the sides, it is a spot of singular loveliness which everyone must admire.

From this lane we turn into a drive that leads circuitously towards the mansion by a broad gravel path, on each side of which are grass banks planted with many magnificent Conifers. The trees are almost perfect in form, and rarely does one see specimens of which the colour is so rich and intense. Douglas Firs abound that are of exceptional beauty and occasionally of immense size, as well as Wellingtonia gigantea, several kinds of Cupressus, and many others. Some of these were large trees when they were planted, but notwithstanding this they look as though they had not been touched for a long term of years. As Mr. Profit has only been at Minley about thirteen years, whence he went from Coombe, and as these trees have all been manipulated by him since then, it is surprising how well they have grown. Smaller Conifers, with many flowering trees and shrubs, are observed at frequent intervals, but these cannot be enumerated here.

Up hill and down hill, through copse and over ravine, beneath high banks we proceed until the garden walls are seen in the distance.

Passing these for the time being, and also the front entrance of the mansion, we make our way to Minley Warren, the home of our guide, who throughout the long and beautiful drive, told of his experiences and his work at Minley, Coombe, and other noted gardens. Charming as has been our journey we are glad to leave the glare of the sun for the pleasant coolness of the house, where we sit at a window and see the flowers in the borders, the soft lawn, the cornfields, and the hills beyond. An interval now is taken up in partaking of Mrs. Profit's generous hospitality, which is followed by a brief rest ere we again emerge to seek "fresh fields and pastures new," and these, rest assured, are very easily found, and that without walking very far.

From one house of rest we pass to another and a more sacred, for it is God's house, in the ground round which lie the remains of Mr. Currie, who found relaxation in beautifying and improving the home that is now occupied by his son Mr. L. Currie. A shaded and secluded walk leads from the church to the mansion. On every hand here are to be seen hundreds of Rhododendrons, forming a groundwork for vegetation of a much larger growth. Near what was erstwhile the principal entrance stand two immense Hollies and another handsome lodge. Advancing still we quickly find ourselves on the terrace from which the landscape effects are varied and charming. This runs almost the entire length of the manor, which is a fine structure built in the style of a French château. An end view of the house is shown in the reproduction (fig. 18), which has as a foreground the Dutch garden that takes the place of the formal flower garden. The plants utilised in this garden, and which is, of course, the same year after year, were Golden and Silver Box, Golden and Common Yews, Euonymus radicans variegata, Cupressus Allumi and Lawsoniana lutea, with Juniperus tamariscifolia. It was laid out many years ago by Messrs. Jas. Veitch and Sons, and is pleasing because of its rarity.

The gateway seen leads to the front entrance, near which are some symmetrical Bay trees in enormous tubs, and that are relegated to the orangery in the winter months. However, we went in an opposite direction, through the few enclosed Rose and Erica gardens on to the plains, which are laid out in a manner that is nothing short of remarkable. There are immense beds of various sizes, each occupied with a certain kind of plant, from which rise trees whose leafage will form a contrast. One bed is devoted to Spiræa Anthony Waterer, another to S. confusa, a third to Olearia Haasti, a fourth to Berberis stenophylla; such trees as Prunus Pissardi, Snowy Mespilus, and others, being used with splendid effect. These are only a few of the many, in fact the superb collection is too large for specific mention. Besides these are long borders of hardy plants of various kinds, and from which cartloads of flowers might easily be cut. At the extremity is an ornate water tower for the supply of the beds, borders, and the gardens, the mansion having a tower of its own.

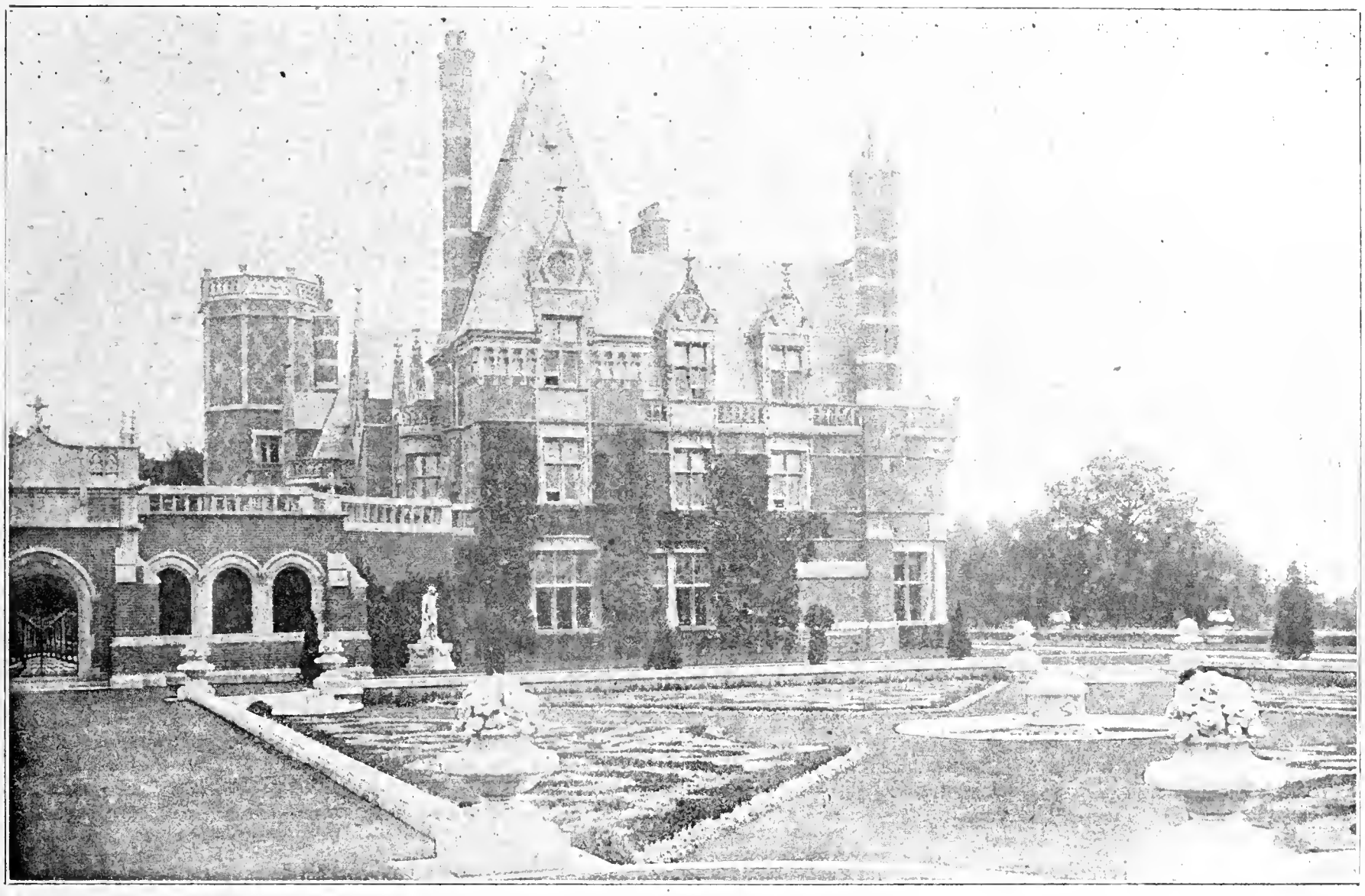

FIG. 18.—MINLEY MANOR.

The vegetable and fruit gardens are surrounded with capital walls, upon which are growing all kinds of fruits. In here, again, are many flowers, but of course the greater portion is occupied by fruit and vegetables. The former comprise many handsome pyramid Apples and Pears, and the crops are far from being bad ones. All kinds of seasonable vegetables are growing in their particular quarters, as are the several bush fruits. This department with the houses is in the charge of Mr. G. Tubbs, who was unfortunately out when this visit was made. However, his foreman kindly gave us a look through the plant and fruit houses, which contain Figs, Peaches, Nectarines, and Grapes, with the usual selection of plants. Outside rows of Chrysanthemums looked well, and should produce good blooms later in the year.

Back once more with Mr. Profit, with just time to get a cup of tea, and we are again in the trap. This time it is to the station, and by a different route, which is almost as pleasant as that traversed in the morning. Even from here the lake comes frequently into view, but we must say no more of Minley, though its beauties entitle it to extended reference. There is much left unsaid, but this must afford material for the next fortunate visitor.—H. J. WRIGHT

Chrysanthemums in New South Wales.

Mr. S. B. Levick has again prepared his annual audit of the best Chrysanthemums exhibited at the Sydney shows during the past season (April and May). The following is the result as set forth in the "Australian Agriculturist:"—Madame Carnot was shown twelve times; Good Gracious, eleven; Golden Gate, ten; Madame Calvat and The Queen, nine; Robt. Williams and Mrs. Jas. Murphy, seven; Louise, Eda Prass, and Vice-President Audiguier, six; Nyanza, T. Wickham Jones, Mdlle. Marie Recoura, L'Isère, Mrs. C. Harman Payne, Chas. Davis, Col. W. B. Smith, and Mrs. J. H. Horton, five; Buff Globe, Mrs. Hickman, Molesworth, Wallaroo, Miss M. Blenkiron, Mrs. E. D. Adams, Golden Wedding, and Viviand Morel, four; Eva Knowles, E. Forgeot, The Wonderful, Austral Queen, Oceana, Silver King, Wilfred Marshall, Mrs. Libbie Allen, Pallanza, and Philadelphia, three times each. There were eighteen varieties shown twice, and forty varieties shown once.

Certificated Australian Chrysanthemums.

Pride of Madford, Oceana, Australie, and perhaps a few more have been sufficiently long in cultivation here for us to form some idea of the value of Australian seedlings. That there will be others equally good in the course of time seems to be certain, for although during the past season new Australian seedlings were not exhibited in large numbers at the meetings of the Floral Committee of the Horticultural Society of New South Wales, several novelties were awarded first-class certificates, showing that the colonial raisers are still engaged upon the work.

Mr. G. Kerslake is credited with raising the following, besides others in previous years, which have had certificates awarded to them:—F. McQuade, Japanese, long petals, slightly incurving at the tips; colour bright terra cotta, reverse amber. Mr. J. H. Horton, Japanese reflexed; colour bronzy yellow, centre paler. Miss Mary Underhay, Japanese, broad incurved petals; colour primrose, but deeper than Kate Mursell.

Of varieties referred to in a former communication, a report in a colonial paper says—"J. R. Upton deserves special mention. This variety has everywhere been shown in splendid form, and is undoubtedly the finest yellow we have. Another magnificent variety is the white G. H. Kerslake, not yet distributed. The six blooms of this variety shown by G. Kerslake were magnificent. Wallaroo has also proved itself a very fine variety, and, as it is being distributed this season, it will probably be seen in several prize trays next year."—C. H. P.

ROYAL HORTICULTURAL SOCIETY.

Scientific Committee, July 27th.—Present: Dr. M. T. Masters (in the chair); Mr. Bennett-Poë, Prof. Church, Rev. W. Wilks, Mr. Veitch, Dr. Bonavia, Rev. G. Henslow, Hon. Sec.

Hybrid Orchid.—Mr. Veitch exhibited a new hybrid, Epilælia ×, between Epidendron radicans and Lælia purpurata. The former grows to from 7 to 8 feet in height, but the hybrid is only about 18 inches. Its leaves more resemble those of Lælia, nor does it root so freely as the Epidendron. The flowers are larger than those of the latter parent, and scarlet, but with a much broader and blotched lip, approximating that of the Lælia, though the deep mauve colour of this species is entirely wanting. Mr. Veitch observed that it is remarkable that the pollen of Epidendron radicans is potential in crossing Lælia, Cattleya, and Sophronitis, but not with itself. Dr. Masters remarked that this hybrid thus corroborated Reichenbach's statement that the two parents were allied.

Apples Diseased.—Dr. Bonavia inquired as to the nature of a disease which so commonly attacks Apples. Dr. Masters pronounced it to be most probably Fusicladium dendriticum, which attacks Apples and Pears, causing them to crack. Mr. Veitch observed that it generally occurs when the tree is in a poor condition, and recommended a renewal of soil in the autumn to strengthen the growth.

Wheat-eared Carnations.—Some examples of this well-known peculiarity were received from Mr. Colvile Browne of Hextable, Kent. Mr. Veitch observed that whenever Carnations were grown in large quantities for market, some plants generally appear among them with this malformation. Dr. Masters added that it was said that the immediate cause was the attack by mites at the apex.

Twin Apple Leaf.—Mr. Browne also sent a specimen in which two leaves were apparently united half-way up, and back to back. An examination of the distribution of the fibro-vascular cords showed that there was only one petiole, a section of which was crescent-shaped, with three or four cords on each half. These coalesced higher up into two distinct bands, from which the cords supplied to each of the twin blades arose. It was analogous to a foliaceous stamen of Jatropha, described by Dr. Masters (*Teratology*, page 255).

Lantana Attacked by Insects.—Specimens were received from Chiswick covered with a white mealy bug known as Orthezia insignis, *Douglas*, and called the "Kew bug."

Seeds Germinating within a Melon.—A specimen was received in which this peculiarity had occurred. It is not infrequent in Cucumbers, Oranges, and the Papaw. It was observed that the cotyledons were green, though in the absence of light within the fruit. Such occurs also in Pistacio Nuts, Mistletoe, pods of Cassia fistula, &c. Professor Church remarked that it probably arose from some modification of the rays of light which were capable of "greening," although their energy was altered in character. It is observable that plants turn green under all the coloured rays of the spectrum, though Ferns will be green in total darkness if the temperature be adequate.

Pelorian Calceolaria.—Mr. Henslow showed two flowers of the ordinary yellow bedding-out plant, which had assumed the sleeve-like shape instead of the usual slipper.

Cypripedium two-lipped.—Dr. Masters showed a specimen with this malformation, the flower being apparently also changed as to the number of its parts. It appeared to be really synanthic, like the Cattleya shown at the last meeting.

Rosa rubrifolia.—He also showed a spray of this red-leaved species, received from Mr. G. Paul, having the gall, "Robin's pincushion," likewise intensified in colour.

Hybrid Aristolochia.—Dr. Masters showed a blossom of the first hybrid ever raised in this genus, between A. gigas (form) and A. elegans from Bolivia. It will be more fully described elsewhere.

Cream-coloured Vallota.—He also exhibited blossoms of this variety. A white one is known to have existed, but is apparently lost to cultivation. It was suggested that crossings should be made with the present one, so that possibly the white variety may re-appear.

Chemical Analyses of Orchids. — Prof. Church, having carefully considered Mr. Smee's second paper on the chemical processes which are supposed to take place in Orchids, observed that it was somewhat difficult to follow the author's observations, as there was a want of systematic cohesion throughout the paper, some parts appearing to be rather irrelevant and others open to question. Thus chemists are not agreed upon the composition of chlorophyll, and if they were there would be in consequence no special light thrown on the cultivation of Orchids. In his observations upon the presence of nitrogen in sewage grass Mr. Smee had altogether omitted any mention of nitrates, and no conclusions can be drawn from the absolute quantities given, as they bear no relation to the actual quantities employed, but not stated in the experiments. The diagram supplied by Mr. Smee Prof. Church thought interesting, as approximately representing the gradual loss of earthy salts as one of the causes of decline and death. With reference to his observations on phosphates in connection with the flowering process, it is well known that phosphates generally increase the inflorescence, while nitrogen enhances the foliage and deepens the green colour of chlorophyll; but Mr. Smee's remarks upon the decomposition of phosphates are extremely doubtful. It has been found in all experiments that ammonias in which phosphorus has replaced nitrogen have always proved fatal to plants. Mr. Smee's experiments on scents, as being formed in the flower itself, are well founded. Lastly, the suggestion that thorough analyses should be made of all parts of Orchids was advisable, if practicable; but such would require very accurate work on definite lines. Such only would give valuable results.

A "GOLDEN GARDEN."

Outside a comparatively small district in Buckinghamshire the Wing Horticultural Society is practically unknown, yet the special favour of an exceptionally advantageous situation for its annual Show bids fair to raise it to a high level amongst local organisations of a similar kind. When Leopold de Rothschild, Esq., with a generosity that distinguishes a great family, permitted the Wing Society to hold its exhibition in the grounds at Ascott, and, further, threw open his beautiful gardens to all visitors, the success was assured provided only that fair weather could be secured. This condition was amply fulfilled last week (July 29th), when crowds of visitors from Leighton Buzzard and the neighbourhood flocked into the Show, and spent a most enjoyable afternoon amidst the numerous attractions of a superb garden. The visitors were not, however, confined to residents in the district, for excursions were provided from Bedfordshire and Northampton, which brought many to whom the charms of Ascott had been hitherto unknown, and they departed both surprised and satisfied.

As a matter of fact little can be said about the exhibition itself. There were the same arrays of well-grown vegetables most country shows provide, there were also cut flowers and plants in moderate numbers, all, however, examples of good culture and care, with an additional tent devoted to groups of plants which were either from district or distant nurserymen (Messrs. J. Veitch & Sons, and Cutbush & Sons being amongst the latter). Respecting them nothing need be said in these notes, because the chief object is to refer to what was after all the greatest attraction to visitors—the garden. Perhaps it would scarcely be possible to select any time in the whole year when Ascott could be seen to better advantage then July or August; there is such a wealth of shrubs, trees, and plants that in favourable seasons have by that time made their best growth, and are seen at once in their freshest and richest attire. At intervals, from the early years of this garden, the writer of these notes has had the opportunity of observing the progress made, the gradual development as it were of the ideas which influenced the designers and planters. Each visit has in this way yielded greater satisfaction, until on the occasion under notice it seemed that the picture was completed. It

is difficult to see in what respect the general design could be improved, and though further years' growth may furnish larger specimens the majority of the shrubs and trees have reached a stage in which all their attractions are sufficiently developed to satisfy the most exacting admirer.

Ascott is undoubtedly unique as a garden, and though tastes differ as to styles, if one is adopted absolutely and carried out freely and well the results are often such as surprise or even please the advocates of other methods. A bold course was adopted in this garden when it was determined to make golden leaved shrubs and plants the great feature of the place, but that the fullest measure of success has been attained is evident to the most critical if the results be inspected on a brilliant summer's day. The hedges and beds of Golden Yews are now in perfection, and it is doubtful if such an extensive array of this richly coloured shrub could be seen elsewhere in the kingdom. Two points particularly strike a visitor when viewing them, the first being the remarkable uniformity in colour and habit, showing the care with which the plants were selected, and the second is their healthy condition, proving that the original preparation and subsequent treatment have been exactly what the plants required. It is not uncommon to see isolated specimens of Golden Yews on lawns, and occasionally the variety elegantissima assumes a very handsome form and rich colour, but the latter quality does not always last so well. The true aurea (Taxus baccata aurea) is one of the most useful golden shrubs, as it makes good progress and bears cutting well.

The best point at Ascott to see the plants is near the sundial, from which a good view is obtained of the celebrated Madeira Walk, having a fine hedge of Golden Yews on one side and a terrace wall on the other. Several other hedges run off from this, all even as a wall and all equally richly coloured, the effect being heightened by massive "pillars" of the ordinary dark green variety at the entrances to the Fountain Garden. The wall of the Madeira Walk is surmounted by a low hedge of Golden Hollies, similarly well coloured; but the face next to the walk is draped with grand masses of rich purple Clematis (Jackmanni), the plume-like heads of Ceanothus, the bright red flowers of Escallonias, with Roses in abundance. Scarcely an inch of the wall itself is visible, and though we know that much gardening skill and labour have been expended upon the planting and training here, yet so free and natural does it all appear that one might fancy it was not the production of art.

In other parts of the garden Golden Hollies, Arbor Vitæ, and Privet are used with good effect, but the standard plants of Golden Privet are, perhaps, the most notable, the stems 4 to 6 feet high, the heads freely developed, and the foliage richly coloured. They are introduced amongst dark-leaved shrubs, and, rising slightly above them, have a very telling appearance, which is almost equally shared by silver variegated standard Privets. Some charming combinations and contrasts have been skilfully managed at various points, and two dwell in the memory especially. In both of these the variegated Maple, Acer negundo variegata, is conspicuous, a luxuriant specimen in one case being partly covered at the corner of a dark background of trees and shrubs with festoons of Clematis Jackmanni, the purple flowers of which mingle charmingly with the silvery white foliage of the Maple. The other example is by the rockery steps leading to the upper garden, where some fine Copper Beech are contrasted with the same variegated Maple, a superb effect resulting.

The dells and banks and cool retreats of the water garden furnish a considerable attraction, and especially is this department appreciated on a hot summer's day, the Bulrushes, Reeds, and Water Lilies being all in vigorous growth now; but especially fine is Gunnera manicata, which seems to be thoroughly at home, huge specimens having a grand appearance near the margins of the pools. The rock garden also is rapidly becoming another of the Ascott features. Respecting the glass department the vigorous Carnations and the innumerable other attractions nothing can now be said, except that they form a portion of the magnificent garden, of which Leopold de Rothschild, Esq., has every reason to be proud, and every portion of which reflects the skill of his gardener, Mr. Jennings.—L. CASTLE.

KEW GARDENS.

OPENING OF A NEW HOUSE.

ON Sunday, July 25th, the new wing, which has recently been added to the Winter Garden at Kew, was opened to the public for the first time. The new part forms a noble addition to an already fine structure. It is 114 feet long and 63 feet wide (inside measurement), and differs from the old house by being much lighter, having everything planted out, and higher temperature. A path runs through the centre of the building, making a continuation of the path through the middle of the big house and octagons. This path from end to end measures 456 feet.

The house contains six beds, four in the middle and two round the sides and ends, all the beds being separated by paths. Each of the centre beds is 41 feet by 15 feet 8 inches, the side ones, with the ends, being each 148 feet by 7 feet. The occupants of the house are numerous and varied, about 500 species and varieties being planted. Plants of economic value, which require an intermediate temperature, come in for a large share of attention. Among the most noteworthy are Cinchona, in variety, Cyphomandra betacea, Tree Tomato, Diospyros Kaki (in fruit), small collection of Eucalypti, Eugenia Jambos, Rose Apple, various species of Ficus, Carica, and Kigelia. The purple Guava, Psidium Cattleyanum and the Mango are both to be seen in fruit.

Of flowering plants, some of the most noteworthy are Lagerstræmia indica, two large plants 8 feet high and as far through, smothered with large panicles of rose pink flowers; Lagerstræmia elegans, with flowers of a deeper colour than the former; Erythrina Humei, with several upright racemes of scarlet flowers; Luculia gratissima, Acokanthera spectabilis, Mackaya bella, the rare Blakea trinerva, a collection of the garden varieties of Malay Rhododendrons, Barnadesia rosea, Alberta magna, and a host of others.

Foliage plants are also in evidence. An avenue is formed along the sides of the middle path with Cocos plumosa, a fine plant of the "Blue Palm;" Erythea armata, a good specimen of Howea Belmoreana; also plants of Geonoma gracilis, Pseudophœnix Sargenti, Cocos Weddeliana, and others. Erythrina tomentosa makes a good effect with its large handsome foliage. A specimen of Leucadendron argenteum makes a fine contrast to the surrounding plants. Many other foliage plants, such as Dracæna Lindeni, Lomatia Bidwilli, Musas, and Aralias. The

FIG 19.—INDIGOFERA GERARDIANA.

ends of the two middle beds near the south door are made up with rockwork, which accommodate numerous Mexican and South African plants, such as Agaves, Aloes, Cereus, Opuntias, and Euphorbias. A selection of good climbers covers the roof and pillars, finishing a large collection of interesting plants.

INDIGOFERA GERARDIANA.

In a natural order of plants where the majority of the hardy shrubby section possess considerable merit as good garden plants, it is a risky thing to say that any particular one is the best. It can, however, be said of this that it ranks among the foremost. It is a temperate Himalayan plant, and is one of the hardiest of the genus. The pinnate leaves are made up of from seventeen to twenty-three oval leaflets, which are pale green above and silvery beneath. The flowers are rosy red, and produced forty to fifty together on slightly drooping racemes along almost the entire length of the current year's growth (fig. 19).

It is a good-natured plant, and lends itself for a variety of purposes. If planted against a wall, and spurred back each spring, longer branches are made than when grown in the open, with a correspondingly larger inflorescence. For a bed where a low-growing shrub is wanted this does beautifully. When treated in this way it will be found necessary to cut back the growths to the top of the soil each spring, as the growths being soft they are usually damaged by frost. In April they start strongly, and by the end of June are showing their earliest blossoms; it is not, however, until the end of July and all through August that the greatest wealth of bloom is obtained. When planted against a wall the flowers are at their best a fortnight earlier. Cuttings inserted in sandy soil during July and August, and kept close and on the dry side, root readily.—W. D.

HORTICULTURAL SHOWS.

CHESTER.—JULY 28TH AND 29TH.

THE second annual exhibition of the Chester Horticultural Society opened on the above dates under a threatening sky; but, fortunately, rain held off until night. In the evening the famous Roodee was visited by thousands of sightseers. Thursday opened with real flower show weather, and it is hoped the Committee of this enterprising society will secure a good gate. There was a marked falling off in the number of exhibitors from the show of last year, the tabling in many instances being bare. This is regretable, as the Society offers good prizes, and the tent accommodation at this exhibition was a great improvement on that of last year, being lofty and wide.

The chief features of this show were the splendid group set up by Mr. Cypher, the Carnations from the Duke of Westminster, and the specially fine exhibit of Messrs. Dicksons, Limited, Chester. Sweet Peas were also well to the front, being staged in large quantities. Vegetables were largely represented in the amateurs' and cottagers' classes, the quality of the same being of a high standard of excellence.

GROUPS AND PLANTS.

There were five competitors in the class for a group of plants arranged for effect, to occupy a space of not more than 300 square feet. Mr. J. Cypher, Cheltenham, was awarded the first prize, with a lovely arrangement of Orchids, graceful Crotons, Carnations, Aralias, Humea elegans, Liliums, Asparagus, and Bamboos. Mr. J. McIntyre, Woodside, Darlington, was a good second, whose group contained many beautifully grown plants of Crotons and Palms, but lacked the grace and elegance of the first group. Charles Wigg, Esq., Hoole Bank, Chester, was third; and Mr. John Robson, Altrincham, a fair fourth.

For group of plants arranged for effect in a space not exceeding 100 feet, open to county of Chester and North Wales, there were only two entries. Mr. R. J. Hudson, Bache Hall, Chester, was a good first with a pleasing arrangement, and Mrs. Townsend Ince, Christleton Hall, Chester, a fair second.

For the best twelve specimen plants Mr. J. Cypher, Cheltenham, was to the front with splendidly grown Erica Austiniana, Bougainvillea glabra, Ixora Williamsi, Statice profusa, Ixora salicifolia, Phœnocoma prolifera Barnesi, Kentia australis, Kentia Fosteriana, Latania borbonica, Kentia Belmoreana, Croton mortefontainensis, and Croton angustifolius. T. S. Timmis, Esq., Cleveley, Allerton, Liverpool, was a fair second. His best plants were Clerodendron Balfourianum, Ixora coccinea superba, Ixora Pilgrimi, and Kentia Belmoreana. Mr. Wm. Vause, Leamington, was third.

Mr. J. Cypher was to the front for a single specimen Palm with Kentia Fosteriana, Mr. J. McIntyre was second. The best greenhouse plant in bloom came from Mr. J. Cypher, Phœnocoma prolifera Barnesi being represented. J. Charlton Parr, Esq., second with a fine Disa grandiflora. Mr. W. Vause took first place with single specimen stove plant, showing Ixora Fraseri. Mr. J. Cypher second.

Dracænas were represented by fresh specimens, not large but well clothed to the pots. T. S. Timmis, Esq, was a good first; W. H. Watts, Esq., Elm Hall, Liverpool, second, and Mr. J. McIntyre third. Twelve Caladiums in variety were represented by splendid plants, T. S. Timmis, Esq, was a good first; Charles Wigg, Esq., second, and B. C. Roberts, Esq., third. T. S. Timmis, Esq., took the lead for four Crotons in variety; Mr. J. McIntyre second. Ferns were very fine. T. S. Timmis, Esq., was first for six exotic Ferns, staging Nephrolepis davallioides furcans in splendid form, Davallia fijiensis also very fine, Nephrolepis rufescens tripinnatifida (grand) with Microlepia hirta cristata, and two good pieces of Adiantum cuneatum. W. H Watts, Esq., was second, his best plants being a lovely Gleichenia Mendelli and a good plant of Microlepia hirta cristata. Mr. J. McIntyre was third.

The class for twenty-four plants suitable for table decoration was well filled, the numerous exhibitors staging on the whole highly creditable plants. Mr. J. Gray, gardener to Sir G. A. Meyrick, Bart., Bodorgan, Anglesea, was first with a beautiful collection. Mr. B. Cromwell was a good second, staging the whole number in Crotons; Mr. J. McIntyre third, and Mr. J. Bracegirdle fourth.

CUT FLOWERS.

Only one competitor staged for the best display of cut flowers in any design or combination of designs, at the discretion of the exhibitor. Rising from a formal design of Violas, Coronilla varia, yellow Calceolaria, and moss were centrepieces containing Sweet Peas and Carnations, the greenery being Asparagus deflexus, Gypsophila elegans, and Ferns, arranged by the Misses Hopkins, Mere Cottage, Knutsford, Cheshire.

Forty-eight Roses, distinct, were represented by four good exhibits. Messrs. Harkness & Sons, Bedale, were to the fore with fine blooms. Messrs. A. Dickson & Sons, Newtownwards, Co. Down, were a good seeond; and Messrs. D. & W. Croll third. Messrs. Perkins & Son, Coventry, were successful in the class for twenty-four distinct, showing a creditable stand. Mr. Peter Snelson, Hope Street, Mold, was placed third. Only two competitors staged in this class. Twelve Roses, distinct, were well staged by Mr. Hugh Dickson, Royal Nurseries, Belfast. Twenty-four Tea Roses were staged by two exhibitors only. Messrs. Alexander Dickson & Sons were first, and Messrs. D. & W. Croll, Dundee, a fair second.

For the best arrangement of cut flowers in vases or stands for table decoration, Messrs. Jones & Sons, Shrewsbury, won with a pleasing arrangement of Carnations, Francoa ramosa, Gypsophila elegans, and Asparagus. Mr. Wm. Vause was a good second, and Messrs. M. Hodgkins & Co. third.

For an arrangement of Carnations and Picotees in variety in a space 10 feet by 6, seven stands were staged, the whole making a very effective display. The first prize went to M. R. Smith, Esq., Hayes, Kent, for a very fine exhibit, the flowers being wonderfully fresh, also of good substance and size. Mr. Wm. Watson, Clontarf Nurseries, Co. Dublin, was second, and Messrs. Thompson & Co., third. Messrs Perkins and Sons, Coventry, were first with bridal and ball bouquets, and Messrs. Jones & Sons for buttonholes.

NURSERYMEN'S CLASSES.

For the best display of cut Dahlias in a space 10 feet by 4 feet, the first prize was carried off by Messrs. Jones & Sons, Shrewsbury, for a nice arrangement of Cactus, Pompon, and Show varieties. Very fine in the Cactus varieties were Miss Webster, Cinderella, Countess of Radnor, Mrs. F. Fell, Matchless, Mrs. A. Peart, Mrs. Gordon Shaw, Harmony, Lady Penzance, and Cannell's Gem. Of Show varieties Mrs. Gladstone, Mrs. Slack, Emperor Muriel, Pioneer, John Walker, John Rawlings, Duke of Fife (grand), Canary Bird (very fine), and Mrs. Stancombe were fine. The Pompons also were very bright and fresh. Mr. M. Campbell, High Blantyre, second, and Mr. J. Walker, Thame, Oxon, third.

Of collections of hardy flowers in variety, occupying a space of 15 feet by 4 feet, two highly meritorious exhibits being staged. Mr. W. F. Gunn, Olton, Birmingham, showed fine Phloxes Amazone, Sheriff Ivory, Harrison Weir, and The Queen, Gaillardia grandiflora, Lychnis chalcedonica, Achillea Ptarmica The Pearl, Scabiosa caucasica, Campanula carpatica alba, Agrostemma coronaria alba, Catananche alba, Centaurea Tourneforti, Montbretia crocosmæflora, and many others, and received the premier award. Messrs. Harkness & Sons were a good second with a more crowded arrangement, but the quality of the flowers was fine, specially so being Coreopsis grandiflora, Potentilla La Vesuve, P. Wm. Rollinson, Gaillardia grandiflora Jealousy, and Catananche cœrulea.

For the best display of cut Roses arranged with natural foliage, and occupying a space of 8 feet by 4 feet, three staged. Messrs. Perkins and Sons, Coventry, were well to the front with artistic arrangements in epergnes and baskets. Messrs. Harkness & Sons and W. F. Gunn were second and third in the order named.

FRUIT.

For a decorative display of ripe fruit on tables 10 feet by 4 feet 6 inches, the fruit not to exceed eighteen dishes, and of not less than seven kinds, the first prize was awarded to Mr. J. H. Goodacre, gardener to the Earl of Harrington, Elvaston Castle, Derby. The best dishes were Bellegarde Peach, Pinapple Nectarine, Black Tartarian Cherries, Read's Scarlet Melon, Brown Turkey Figs, and Beauty of Bath Apple. Muscat Hamburgh Grape was represented by a good bunch, as also was Muscat of Alexandria, but the latter was a little under-ripe. The other dishes were a small Queen Pine, Elton Pine Strawberry, Lord Napier Nectarine, Large Early Apricot, Lady Sudeley Apple, Belle d'Orleans Cherry, Countess Melon, Noblesse Peach, and Black Hamburgh Grapes. The centre of the table was covered with a mirror, on which were arranged elegant vases of Masdevallias, Cattleyas, Odontoglossums, the greenery being Asparagus, Selaginella cœsia, and Myrsiphyllum asparagoides. The number of points gained was seventy out of possible 100. Mr. J. McIndoe, gardener to Sir J. W. Pease, Bart., M.P., was a splendid second, the points scored being sixty-seven. There were fine dishes of Muscat of Alexandria, Golden Champion, and Black Hamburgh Grapes, Stirling Castle Peach, Souvenir du Congrès Pears, Spencer Nectarine, Prince Englebert Plum, Gunton Park Strawberry, Duchess of Gloucester Apple, Negro Largo Figs, and Early Transparent Plum. Mr. Read, gardener to the Earl of Carnarvon, Bretby Park, Burton-on-Trent, was third, obtaining fifty-three points.

For a collection of ripe fruit, to include two bunches of white and two bunches of black Grapes, there were three exhibitors. Mr. Harris, gardener to Lady Henry Somerset, Eastnor, Ledbury, secured first honours with small Black Hamburgh and Muscat of Alexandria Grapes, fine Bellegarde and Stirling Castle Peaches, Pitmaston Orange and Stanwick Elruge Nectarines, excellent Brown Turkey Figs, Countess and an elongated seedling Melon, and splendid Bigarreau Napoleon Cherries. Lord Bagot, Rugeley, was second with well-coloured Black Hamburgh and fair Muscat of Alexandria Grapes, a huge Hero of Lockinge Melon, Violet Hâtive Peach, and Violet Hâtive Nectarine as the best dishes. Mr. J. Edmonds, Bestwood Gardens, took the third place.

For a collection of eight dishes of hardy fruit four exhibitors staged. Mr. Harris was placed first. Bigarreau Napoleon and fine Morello Cherries, Moor Park Apricot, Oxonian Strawberry, Superlative Raspberry, and large Red Currants were the best dishes. Viscount Combermere, Combermere Abbey, Whitchurch, was a good second. This collection contained fine Strawberries, Black and Red Currants, nice Cherries and Gooseberries. Capt. Fielden, Mollington Hall, Chester, was third. Mr. Harris again secured premier honours with a fine Smooth Cayenne Pine, Mr. Read taking second place.

For the best six bunches of Grapes, two bunches of each, in three distinct varieties, there were seven stands staged. Mr. W. Pritchard, Little Neston, was first, showing good Black Alicante, Muscat of Alexandria, and well-ripened Bowood Muscat. Mr. J. A. Goodacre was second with fine Muscat Hamburgh, Muscat of Alexandria (not nearly ripe), and fair Black Hamburgh. Sir G. A. Meyrick, Bart., Bodorgan, Anglesea, was third. For three bunches of Black Hamburgh R. T. Richardson, Esq., Capenhurst Hall, Chester, was first; Lord Bagot second, and Mr. Harris third. Only two staged in the class for three

bunches of Madresfield Court, Mr. Harris being first, and R. A. Naylor, Esq., third. Three bunches of any other kind, E. A. Young, Esq., was first, showing fine Gros Maroc; Mr. W. Pritchard second with Black Alicante; and Lord Bagot third. There were three exhibits for three bunches of Muscat of Alexandria Grapes, the prizewinners being E. Edmondson, Esq., Springfield Hall, Knowle; Lord Bagot, and E. S. Clark, Esq., in the order given.

For a single dish of Peaches Mr. Harris was first, showing Bellegarde; and Mr. J. H. Goodacre second. The last-named exhibitor was first with six Nectarines; Lord Bagot second, and Mr. J. McIndoe third. For the best Melon, any kind, the competition was very keen, Countess, exhibited by Mr. J. H. Goodacre, taking first place. Mr. Harris second with the same variety, and Mr. Read third. For Figs Mr. Potts was to the fore, followed by Mr. Harris and Mr. J. Edmonds. The class for a single dish of fifty Cherries was very fine. Mr. Harris was again successful, followed by Viscount Combermere and Lord Bagot.

Vegetables.

Considering the season these were of very fine quality. For a collection of twelve distinct kinds Mr. T. Wilkins, gardener to Lady T. Guest, Inwood House, Henstridge, was first with a splendid collection, admirably staged. There were Autumn Mammoth Cauliflowers, selected Ailsa Craig Onion, Sutton's Solid White Celery, Green Globe Artichokes, Early Gem Carrots, Duke of Albany Peas, Perfection Tomatoes, Best of All Runner Beans, Satisfaction Potatoes, Sutton's Globe Beet, Improved Telegraph Cucumber, and Prizetaker Leek. Mr. C. Foster, gardener to Morgan S. Williams, Esq., Aberpergwm, Glyn Neath, was second; and Mr. W. Pope, gardener to the Earl of Carnarvon, Highclere Castle, Newbury, third.

In the class for the best collection of eight distinct kinds, open to Cheshire and North Wales, Mr. Prior, gardener to the Hon. Mrs. E. Kenyon, Maisfaen Hall, Whitchurch, took first place with fine Autumn Mammoth Canliflower, selected Ailsa Craig Onion, Sulham Prize Celery, Magnum Bonum Pea, Perfection Tomato, Progress Cucumber, Satisfaction Potato, and Early Gem Carrot. Mr. C. Worker, gardener to Capt. Fielden, was second, having good Cauliflowers, Peas, and Leeks; and Mr. J. Oldfield, Chirk, third.

For six Onions Mr. T. Wilkins was first, staging grand bulbs of Sutton's Selected Ailsa Craig. Mr. C. Foster was second, and Mr. John Coke third. For Leeks Mr. Pope took first with fine Prizetaker; Mr. T. Wilkins second, and Mr. Rodger Varley third. Carrots were well shown, Mr. T. Wilkins winning with very fine specimens of Sutton's New Red Intermediate; Mr. C. Foster and J. Oldfield, Esq., taking second and third in the order named. There was strong competition for six Beet. Mr. C. Foster was first, Mr. T. Wilkins second, and Mr. Pope third. Mr. Logan was first with Cucumbers, Viscount Combermere second, C. Peele, Esq., third.

Twelve kidney Potatoes made a good class. Mr. B. Ashton was first, Mr. C. Foster second, and Mr. Pope third. Mr. B. Ashton was awarded first for the best twelve round Potatoes, Mr. Wilkins second, and Mr. Pope third. Mr. Ashton was first also with coloured kidneys, Mr. Cheers second, and Mr. A. Ruddock third. The same exhibitor took first for coloured rounds, followed by Mr. W. Pope and Mr. C. Foster. The last named staged the best Cauliflowers, Mrs. Watkins second, and Mr. W. Pope third. Mr. Varley won with red Celery, followed by Mr. C. Foster and Mr. J. Birch. Mr. Pope won with white Celery, Mr. Varley second, Mr. T. Wilkins third.

Peas were very well shown, T. Brocklebank, Esq., Mr. H. Brownhill, and Viscount Combermere being the winners. Mr. Wilkins, Mr. W. Pope, and Captain Fielder winning with Best of All Runner Beans. Mr. Wilkins was to the front with French Beans, staging fine selected Canadian Wonder; Viscount Combermere second; and Mr. Prior third. For the special prizes offered by Messrs. Webb & Sons, Mr. T. Wilkins was first. The class was for six kinds grown from seed supplied by Messrs. Webb. The winner staged Webb's Masterpiece Onion, Peerless Cauliflower, Sensation Tomato, Goldfinder Potatoes, Duke of Albany Pea, and Market Favourite Carrot (grand). Mr. C. Foster was second with Early Mammoth Cauliflower, Talisman Peas, Regina Tomato, Masterpiece Onion, Progress Potato, Mammoth Red Celery; and Mr. Read third.

Miscellaneous Exhibits.

Messrs. Dicksons, Ltd., Chester, filled the whole of one large tent with a splendid exhibit, well worthy of this noted firm. Down the centre were arranged graceful Tree Ferns, and tastefully placed around were groups of Tea Roses, beautiful Liliums in variety, Cannas, Hydrangea paniculata grandiflora. There was a fine group of Palms, a grand specimen of Phœnix reclinata occupying the central position. Begonias were also very fine, the flowers being of good substance and size. Other groups were composed of choice Carnations, Romneya Coulteri, Crotons, and Dracænas rising from a groundwork of Ferns; while Caladiums, Pancratiums, Chrysanthemums, Streptocarpus, seedlings and others. Around the sides were a fine cross and anchor, bouquets of Carnations, graceful baskets of Roses, beautiful vases of Sweet Peas, charming Carnations, with a splendid exhibit of hardy border flowers, amongst which were noted Gladiolus The Bride, Calendula Prince of Orange, Pentstemon Ardent, Helianthus rigidus, Centaurea montana rubra, Phlox Queen Victoria, Gladiolus delicatissima, Sidalcea candida, and many others. Vines in pots, lawn grass in a large box, and Potatoes complete the whole of this grand exhibit, for which the gold medal was awarded.

Mr. N. F. Barnes, gardener to the Duke of Westminster, arranged a magnificent group of Souvenir de la Malmaison Carnations, the greater part in 48-size pots, numbering altogether some 300. The group was edged with Adiantum cuneatum and Panicum variegatum. A gold medal was awarded this exhibit.

Messrs. Cowan, Liverpool, were awarded a silver medal for a very fine group of Tea Roses and Liliums. Silver medals were also awarded to Messrs. R. Wallace & Co. for a fine exhibit of Liliums in variety; Messrs. Eckford, Wem, Shropshire, for superb Sweet Peas; Messrs. R. Hartland & Son, Cork, for eight boxes of Begonias, all double, the blooms being grand in size and substance; Mr. Ed. Murrell, Shrewsbury, for Roses; Mr. Henry Brownhill, for fine hybrid Chrysanthemums, choice Begonias, Dahlias, Tomatoes, and Peas; and to Messrs. W. & J. Birkenhead, Sale, Manchester, for a choice assortment of Ferns. Mr. M. Campbell, High Blantyre, staged charming single hybrid Chrysanthemums of fine substance, also beautiful Pansies, for which he received a bronze medal.

HUYTON AND ROBY.—July 29th.

On Thursday last, in perfect weather and in the midst of a fashionable assembly, Alexander Mackenzie Smith, Esq., Bolton Hey, Roby, opened the annual Show of the above Society. Of the exhibits nothing but the highest praise could be bestowed.

For four stove and greenhouse plants, four Ferns, four Caladiums, two Liliums, two Palms or Cycads, three Coleus, two and one Orchid, single stove plant in flower, single Caladium, single Fern and six Cockscombs, Mr. R. Pinnington, gardener to Mrs. Banner, Blacklow House, Roby, secured first prize in each class with plants of excellent quality throughout. In many of the classes he was closely followed by Mr. Jno. George, gardener to Mrs. Ihler, Huyton Hey House, Huyton, a persevering young gardener who has made much progress during the past year. This exhibitor also won with Fuchsias, table plants, one Caladium, and one fine-foliage plant. Mr. W. Lyon, gardener to A. Mackenzie Smith, Esq., secured the prize for a group 9 feet in diameter, the arrangement reflecting the greatest possible credit. Mr. Pinnington was a good second. Mr. Lyon was also successful in several other classes, securing a special for a hanging basket, also for Petunias. Mr. E. Bridge, gardener to Mrs. Jowett, Huyton, was well to the fore with handsome Zonal Pelargoniums and for one Begonia. Mr. T. Eaton, gardener to Jno. Parrington, Esq., Roby Mount, Roby, secured a first for four well-flowered tuberous Begonias, Mr. Lyon following very close.

The table decorations—for ladies only—were most attractive, and formed a pleasing contrast to the plants. Mrs. Middlehurst secured the first prize with a light arrangement of Sweet Peas and Gypsophila elegans; followed by Miss Clara Arthur with a similar arrangement, but a trifle too heavy; and Mrs. Parrington with a handsome arrangement of pink Carnations and fragile Grasses. Miss Arthur also won with a charming bouquet, and Mrs. Parrington with a lovely centrepiece. Miss Appleton took the prize for basket of Roses; Mrs. Middlehurst for ladies' spray; and Mrs. F. A. Green and Mr. R. Pinnington equal first for gentleman's buttonhole.

Other winners in cut flower classes were Messrs. W. Oldham (gardener to Joseph Beecham, Esq., Ewanville, Huyton), T. Eaton, J. Humphreys, and J. A. O'Connor. There were four competitors for eighteen cut Roses not less than twelve varieties, and Mr. R. Pinnington somewhat easily secured the special prize offered with blooms of good form and substance. Mr. J. Burrows, gardener to W. H. Crook, Esq., Huyton, was an easy first for twelve distinct, and Mr. T. D. Syers for six distinct. Other cut flowers in amateurs' and cottagers' classes were very fine.

Fruit was not of the highest quality, Mr. Eaton, however, winning the four dishes with good Black Hamburgh Grapes, Hero of Lockinge Melon, excellent Violette Hâtive Nectarine, and fine Peaches; Mr. Pinnington second. Mr. Eaton was well to the fore for Peaches and Nectarines, and a fine dish of Latest of All Strawberries. In all Grape classes Mr. W. Oldham was triumphant, Messrs. Eaton and Pinnington following.

Vegetables were fair, Mr. Lyon taking the collection for French Beans and three dishes of Tomatoes; Mr. Pinnington four dishes of Potatoes and Cauliflowers; and Mr. Humphreys Cucumbers.

The Countess of Derby's special—a handsome striking clock—for the best kept cottagers' garden was taken by Mr. John Lyon, who also won the cottagers' collection. To Mr. Airey (Treasurer), Mr. H. Middlehurst (Secretary), the stagers and Committee, the highest commendation is to be given for their admirable arrangements. The attendance was very good.

LIVERPOOL.—July 31st and August 2nd.

On Saturday and Monday last the seventeenth annual Show of the above Association was held on the review ground, Sefton Park. The Committee had every reason to be proud of the exhibition of plants, fruits, and vegetables, which completely filled the handsome and commodious tent and its annexe, and made a striking impression upon all present. The plants were the chief feature, and we never remember them being better shown.

In the class for ten stove and greenhouse plants, five of each, Mr. B. Cromwell, gardener to T. Sutton Timmis, Esq., Cleveley, Allerton, had an easy win, his plants being marked by the stamp of the highest cultivation. Mr. J. Bracegirdle, gardener to W. H. Watts, Esq., Elm Hall, Wavertree, was placed second; and Mr. R. Pinnington, gardener to Mrs. Banner, Blacklow House, Roby, third. For six stove and greenhouse plants Mr. G. Leadbetter, gardener to W. J. Davey, Esq.,

Holmleigh, Aigburth, won. For six stove and greenhouse Ferns Mr. J. Pattison, gardener to S. J. Waring, Esq., Palmyra, Aigburth, took leading honours; Mr. T. Gowen, gardener to G. A. Bartlett, Esq., Mossley Hill, a good second. Mr. Pattison also won with one fine Palm and two Liliums.

For four fine-foliage plants Mr. Pinnington won, Mr. Bracegirdle came a good second. Mr. Pinnington also secured classes for three greenhouse plants in flower, three Palms or Cycads, six Cockscombs, and second to Mr. Cromwell for six Caladiums. Mr. Gowen won with a nice piece of Dicksonia squarrosa in single Tree Fern, and Mr. Cromwell for other single with a champion plant of Davallia fijiensis plumosa. The latter exhibitor also won classes for six Crotons in 8-inch pots, six Dracænas beautifully grown, one stove plant in bloom, a fine Ixora Pilgrimi, six table plants, also for one foliage plant, with a grand Croton mortfontainensis.

Zonal Pelargoniums were better than for many years, Messrs. E Bridge, gardener to Mrs. Jowett, Greenhill, Huyton, T. Hitchman, gardener to Arthur Earle, Esq., Childwall Lodge, T. Gowan, and G. Bracegirdle being the successful ones. Mr. Hitchman won with four Coleus. For three Ferns and four pans of Lycopods, Mr. F. Field, gardener to G. H. Wilson, Esq., was adjudged the winner, whilst for Gloxinias and tuberous Begonias a well-known grower, Mr. T. Ankers, gardener to W. B. Bowring, Esq., was well ahead. Mr. Bracegirdle had handsome Fuchsias, winning in each class, also for a single groenhouse plant.

Orchids were a distinct advance on former years, Mr. E. Taylor, gardener to E. Pryor, Esq., winning with superb plants of Cattleyas Gaskelliana, guttata Leopoldi, Aërides crispum, and Oncidium sarcodes; Messrs. Bracegirdle and Pinnington following with good exhibits. In the class for two cool house Orchids, Mr. T. Wilson, gardener to O. H. Williams, Esq., Fulwood Park, Aigburth, had a fine type of Oncidium crispum and a creamy-white Lycaste Skinneri without a trace of colouring. It was rightly named "Cowan's variety," both plants having been imported by the firm of Jno. Cowan & Co., Ltd., Garston and Gateacre, from whom so many good things have come.

The groups were effectively arranged and greatly admired, that for space not exceeding 250 square feet being taken by Mr. Bracegirdle with a most pleasing arrangement, showing more than ordinary skill in every detail. Mr. T. Coulton, Aigburth, was second. For those not occupying more than 75 square feet Mr. H. McFall, gardener to E. C. Leventon, Esq., Oakfield, Roby, was an easy first, light and elegant to a degree. A nice second group, taking the form of a miniature dell, and which would have been greatly enhanced by the substitution of fresh green moss in place of sphagnum, was taken by Mr. Whittle, gardener to R. G. Allan, Esq.

Mr. T. Carling, gardener to Mrs. Cope, Dove Park, Woolton, was deservedly awarded the prize for four Tomatoes grown in pots not exceeding 12 inches, one plant in each pot, for grand specimens literally roped with fruit of the largest size, and free from every trace of disease.

Roses were in excellent condition, Messrs. Alex. Dickson & Sons, Newtownards, co. Down, easily securing the prize for forty-eight distinct, with lovely flowers, and here again this firm surprised and delighted many rosarians by the charming new varieties they included. Messrs. D. & W. Croll, Dundee, took second position with an effectively arranged stand containing some fine flowers; Mr. Hugh Dickson, Belfast, was third. For eighteen Teas and Noisettes, Messrs. D. & W. Croll secured the leading position with an excellent stand; Messrs. Alex. Dickson & Sons were a very close second, and Mr. Hugh Dickson a creditable third. Messrs. Alex. Dickson & Sons won for six dark and light varieties with Ulrich Brunner and Marchioness of Dufferin.

Three exhibited for best and most tastefully arranged box of Roses, and Mr. P. Greene, gardener to Thos. Gee, Esq., Allerton, carried off the prize with a delightful stand arranged with fern, Crimson Rambler showing to great advantage. In the amateurs' classes, Mr. T. Carling won with twenty-four, and Mr. Carron, gardener to T. R. Bulley, Esq., Liscard, with twelve.

Mr. Thos. Coulton, nurseryman, Aigburth Vale, secured the prizes for twenty-four and eighteen varieties of hardy herbaceous and half-hardy border flowers with fresh and diversified samples, and Mr. Carling had one of the finest stands of stove and greenhouse cut flowers ever seen at any Liverpool show.

The fruit classes were only sparsely filled, Muscats being a little under-ripe, but fine in bunch and berry. The first went to Mr. J. Gray, gardener to Sir G. A. Meyrick, Bodorgan; and the second to Mr. W. Oldham. Mr. Skilt, gardener to Mrs. Heywood Bright, Knotty Ash, won with two massive Black Hamburghs, a close second being Mr. Oldham. For four bunches Mr. Elsworth, gardener to Messrs. W. L. and R. F. Gladstone, won with small but well finished Madresfield Court, Buckland Sweetwater, Black Hamburgh, and Muscat of Alexandria. Mr. Oldham had more massive bunches, but scarcely so well finished.

Mr. B. Ashton won the collection with fair Black Hamburgh and Muscat of Alexandria Grapes, Royal George Peaches, Lord Napier Nectarines, a capital Melon, and Brown Ischia Figs. Mr. Elsworthy was an excellent second. For four dishes Mr. T. Eaton, gardener to Jno. Parrington, Esq., Roby Mount, Roby, was the only exhibitor, but the stand was a creditable one. Mr. J. Stephenson won with Peaches, and Mr. G. Leadbeater with Nectarines, Mr. Eaton following in each class.

Vegetables were very good, Mr. J. Rainford, Prescot, winning the twelve class, Mr. Ashton second. Mr. John Pownall, Prescot, won with eight, and Mr. Ashton with six. The latter won with four dishes of Peas, and Mr. J. Salisbury for two. Potatoes went to Mr. W. Lyon (gardener to A. M. Smith, Esq.) and Mr. Ashton; and Tomatoes to Messrs. Stephenson and Carling. Amateurs' collections were good.

The trade was well represented, the John Cowan Company, Limited, Garston, having a lovely bank of Roses, Liliums, and fine tuberous Begonias. Their collection of Orchids was rich in variety and splendidly flowered—one of the best tables they have ever staged, and much admired. Messrs. W. Clibran & Son, Altrincham, were represented by a large, excellent, and varied exhibit, consisting of herbaceous cut flowers, Sweet Peas, and other annuals, Carnations, and a pleasing assortment of Violas, all well put up and most attractive.

Dickson, Limited, Chester, again came forward with one of their fine exhibits, consisting of a splendid assortment of Liliums and Gladioli, Helianthus in variety, thirty varieties of Sweet Peas, and some choice seedling Carnations. Messrs. R. P. Ker & Sons, Aigburth, staged grand Crotons. Their group of Campanulas was a striking feature of the show. Mr. Chas. Young showed Carnations of the finest types and Lily of the Valley. Mr. Septimus Pye, Garstang, had an unusually fine display of Violas in every shade and colour. Messrs. Edwards & Son, Sherwood, Notts, had a charming exhibit of the now famous Edwardian ware. The officials are deserving of every credit in their share of the work.

Certificates of merit were granted to all the trade, also to Mr. Doe, gardener to the Right Hon. the Earl of Derby, K.G., for handsome seedling green-flesh Melons, beautifully netted, the flesh being extremely thick, and to Mr. Hitchman for a seedling yellow Tomato of perfect form, no eye, and very weighty.

SOUTHAMPTON.—July 31st and August 2nd.

Circumstances, over which the Royal Horticultural Society of Southampton have no control, have very much altered the conditions under which the Council labours. To some of our readers it will be within their knowledge that the Council obtained a lease of the lovely grounds of Westwood Park, adjacent to the town, and where fourteen admirable summer exhibitions were held. Failing to obtain a renewal of that lease the Council this year was compelled to seek the aid of the Corporation of the Borough to allow them to enclose a few acres of the Common wherein to hold the Show for the present year. Here, then, the meeting was held on what was apparently a suitable site. Owing to bad weather the finances are not at present in a satisfactory condition. The schedule had to be cut down in the number of its classes, and in the amount of its prizes. In spite of all these drawbacks the exhibition held was an exceedingly good one, ranking amongst the best yet held by the Society in point of quality of the exhibits. Such a fact is creditable to all concerned. Nowhere are exhibitions conducted with more efficiency. The arrangements in the capable hands of the indefatigable Secretary, Mr. Fuidge, are always of the best.

One immense marquee was devoted to plants, and a really grand effect was produced. The principal class was for eight stove and greenhouse specimens, four to be in bloom the remainder foliage. Although only two competed they were a creditable display. So close in point of merit were the specimens that equal first prizes were awarded. Mr. E. Wills, nurseryman, Winchester Road, Shirley, Southampton, had superior flowering plants, while Mr. Peel, gardener to Miss Todd, Sibthorpe Lodge, Shirley, was stronger in foliage. For six miscellaneous plants, not less than three to be in bloom, there was a spirited competition, Mr. Osman, gardener to Mrs. Haselfoot, Bitterne, was the chief prizetaker with good examples of cultural skill, amongst which was a freely flowered Allamanda grandiflora. Mr. J. Amys, gardener to the Hon. Mrs. Elliott Yorke, Hamble Cliff, was a good second. Mr. Wills was a creditable third.

Ferns were a feature of the show. Mr. G. Hall, gardener to Lady Louisa Ashburton, Melchet Court, Romsey, was an easy winner for six with healthy specimens. Messrs. Osman and Amys were second and third respectively in the order here given. Pelargoniums, double and single, Fuchsias, and Celosias were creditable to all. Mr. Osman; Mr. Hosey, gardener to J. C. E. D'Esterre, Esq., Elmfield Hill, Sonthampton; and Mr. R. C. West, gardener to H. G. Wigram, Esq., Northlands, Salisbury, were the principal prizetakers. Single specimen plants were excellent. In flowering plants Mr. Amys presented one of Allamanda Hendersoni, which he knows so well how to cultivate; Mr. Wills with Cycas revoluta winning premier award in the foliage class with a really handsome piece.

Groups of miscellaneous plants arranged for effect were very fine. Three competed in the class of 150 square feet. Mr. Peel just managed to beat his worthy opponent Mr. Wills with an arrangement that left little to be desired. The group was bright and varied without being in any way crowded, while the plants were just what was required for the purpose. Mr. Wills, if anything, erred on the side of dullness. Mr. E Carr, gardener to W. A. Gillett, Esq., Fairoak Lodge, Bishopstoke, was a creditable third. In the smaller group Mr. H. Andrews, gardener to Mrs. R. F. Wilson, Ferniehurst, Rowsham, was the most successful with a creditable exhibit.

Cut flowers were extensively shown, and with a pleasing effect. Table decoration was a strong feature of this section. For the most elegantly dressed table, 8 feet by 4 feet, with flowers and foliage, a very strong competition was forthcoming. Mr. B. Ladhams, Shirley, was ahead of all others with a light yet bright arrangement of suitable flowers. Miss Kate Golding, Portswood, was a good second, and Mr. B. Small, Fair Oak, Eastleigh, third. The best epergne was that from Miss Lonise Wills, Shirley; while the best ball and bridal bouquets were sent by Mr. F. Bailey, florist, Southampton.

For twelve bunches of herbaceous flowers, distinct, there was a spirited

competition. Mr. B. Ladhams was an easy winner of the premier place with a handsome collection—Rudbeckia purpurea, Tritoma glaucescens, Gaillardia and Phygelius capensis. Mr. Wilcox, gardener to Col. Sinkins, Aldermoor, Shirley, second. Cactus and other Dahlias were well shown. For twelve Cactus varieties, Messrs. Keynes, Williams & Co., Salisbury, first, as also were they for twelve bunches Pompon varieties.

Fruit made a fine display. For six dishes, Pines excluded, there were five competitors. Mr. G. A. Inglefield, gardener to Sir J. Kelk, Bart., Tedworth, Marlborough, won first prize with dishes of good quality. Muscat of Alexandria and Black Hamburgh Grapes, Hero of Lockinge Melon, and excellent Pineapple Nectarines were the principal dishes; Mr. A. Henbest, gardener to A. Kennard, Esq., Crawley Court, Winchester, second; Mr. W. Mitchell, gardener to J. W. Fleming, Esq., Chilworth Manor, third. Grapes were extensively staged. For three bunches of Black Hamburgh five competed. Mr. Mitchell, with bunches weighing 4 lbs. each, was easily first; Mr. G. Newman, gardener to Captain Gaussen, Twyford Lodge, Winchester, second; Mr. Inglefield third, all staging extremely well. For the same number any other black variety Mr. Mitchell was again successful with Madresfield Court in splendid condition; Mr. Chester, gardener to Sir W. Pink, Shrover Hall, Cosham, second with the same variety; Mr. G. Hall was third.

Muscat of Alexandria was fairly well represented. For three bunches Mr. Inglefield was first. Mr. G. Hall had the best any other white variety with Buckland Sweetwater, Mr. Chester second. Mr. Wilcox won for two bunches black, with creditable examples of Black Hamburgh. Mr. Hygate, gardener to S. P. Munford, Esq., The Briary, Cowes, took a similar position for any white variety. Mr. Mitchell, with Sutton's Imperial Green Melon, was the most successful in a strong class. Mr. Mitchell also had the best dish of Peaches—Dymond. Mr. J. Budd, gardener to R. F. Dalgety, Esq., Lockerby Hall, Romsey, staged fine Elruge Nectarines, for which he was awarded premier position. Hardy fruit in six dishes was a strong class; Mr. Budd, with July Gage Plum, Cherries, Gooseberries and Apricots was first, Mr. West second. Vegetables were staged in large numbers and of good quality. In the special classes provided by Messrs. Toogood, Webb, and Sutton, Mr. T. Wilkins, gardener to Lady Theodore Guest, Inwood House, Henstridge, secured all the premier awards with excellent examples of well known varieties.

Mr. W. H. Rogers, Red Lodge Nurseries, Southampton, had an excellent assortment of shrubs in pots; Mr. Ladhams a charming collection of cut herbaceous flowers, making a bright, varied, and pleasing display. Both of these exhibits were "not for competition." Mr. Foster, Brockhampton, staged a large collection of Sweet Peas in bunches tastefully arranged, and which were a conspicuous feature of the show.

THE YOUNG GARDENERS' DOMAIN.

Our Wild Flowers.

On the chalk hills of North Herts we are especially favoured with a great variety of wild flowers. This is observable by the admirers of these flowers who have the privilege to dwell here and observe them. At the south end of our village the chalk forms the subsoil, and the top layer is of a stiff loamy nature. Here the flowers appear to be absent that abound at the north end, where the chalk rises to the surface and forms the upper layer, so that the fields have quite a white appearance. Not only are flowers found by the wayside, but we have woodlands where acres of Primroses and Bluebells appear in their season, as well as Orchis and other flowers.

In walking distance we have the bleak hills of Royston Heath, where I have gathered the Pasqueflower, Anemone pulsatilla, in early spring. The main road which runs through our village is an old Roman road, through which in times gone by the stage coach used to travel on its way from London to Cambridge, now much frequented by cyclists. The keeping of this splendid road is under the care of the C.C., who also keep the waysides neat and trim. It is here we miss the nodding heads of our favourites, and mourn their absence. How different is it when we turn into a byway over which the C.C. have no control. Here we find the waysides bedecked with various kinds of flowers, in diverse forms and colours. We linger amongst them, gathering a few here and there to take home for further thought and admiration. We are between banks from 6 to 7 feet high, the whole a mass of flowers, and as associated with various kinds of grasses present a most pleasing appearance.

Many practical lessons might with advantage be learnt from some of these flowers by introducing them into our herbaceous borders. I often feel ashamed of my ignorance concerning the names of these flowers, but I mention those of a few I remember as growing there. Knapweeds, Agrimony, Yarrow or Milfoil, Sainfoin, Kidney Vetch, yellow and white Bedstraws, Ragwort, Wild Thyme, Restharrow, Wild Carrot and Parsnip, Harebells, with other Campanulas. All the above with many others adorn the banks in question.

We had this past week twelve children in the village from the great metropolis for a breath of fresh air. Their liberty was not long obtained before their hands became filled with wild flowers, grasping them with such delight that is never seen amongst our native children; their small white hands forming a striking contrast to the glowing colours of the Poppies. The old people with whom these children lodge are often put to difficulty where to place the flowers now being constantly brought home. I notice by the schedules of our local flower shows that prizes are offered for the best correctly named collection of wild flowers; this is a good sign, at least so thinks—Nil Desperandum.

Luculia gratissima.

Luculia gratissima deservedly holds a foremost place amongst wall and pillar plants in greenhouses suitable for its cultivation, the fragrant blooms of delicate colour coming into full beauty in autumn. Although this plant will succeed to some extent under pot culture, it very much prefers a border, rather shallow, well drained, and composed of turfy loam, peat, and sand. By allowing three or four leads to run up the required height, and working upon the spur system, abundance of flowers are obtained, which, however, do not lend themselves readily for house decoration, as they do not long remain fresh after being cut.

Propagation is difficult to effect, as the seeds are seldom, if ever, produced in this country, and cuttings are often very shy in rooting. Only the young tips of the shoots, not more than an inch in length, seem to have any chance at all. These must be inserted in sandy compost under a bell-glass, with gentle bottom heat, taking care not to allow much moisture to accumulate upon the leaves, as they are very liable to damp off. Three or four weeks should see the successful ones rooting, and these may be potted very carefully, and kept in a close shady atmosphere until thoroughly established.

There is another variety, L. Pinceana, which blooms in the summer, flowers white and even more fragrant than L. gratissima, but it does not appear to be so popular, probably because there are plenty of attractive objects at the same time.—R. A. Anderson, *Alnwick*.

[We are much obliged to our correspondent for allowing three-fourths of an inch of space between the lines. It is very convenient to editors and compositors who spend their days and half their nights in poring over MSS.]

Manures for Vines.

The query of "W. H. T." on Madresfield Court Grape not colouring in your issue of July 22nd has suggested to me the writing of this note. In the vineries, in which I am specially interested, black Grapes were always wanting in colour (Cooper's Black excepted), though the bunches and berries were above the average in size. The borders are outside and cemented at the bottom and sides, so the roots cannot ramble.

The staple article used in their formation is the top spit of a deer park cut into lumps 3 or 4 inches square, adding a good sprinkling of bonemeal and half-inch bones as the border is made. Leaf mould is sparingly used. We add a section from 4 to 6 feet each year till the border is completed if the Vines have grown freely, otherwise only a fresh piece is added every second year. The loam is supposed to be over limestone, which is plentiful. White Grapes do well in such a border. Muscats finishing admirably, and are extra large in bunch and berry. Buckland Sweetwater, Foster's Seedling, and Golden Queen also succeed well, the last named being nearly free from that muddy appearance it so often shows after hanging for some time.

Wanting the bunches for exhibition made me anxious to colour the black Grapes, and so I experimented with some artificial manures, also farmyard manure. A couple of years ago I tried dressings of nitrate of soda, superphosphate of lime, and kainit mixed, fortnightly, watering in with clear water, but with no good results as regards colour. Last year I added muriate of potash in place of kainit, and gave a light dressing every week, and the season being dry watered well in with liquid cow and sheep manure, with a little soot added occasionally.

It was interesting to watch the results of such high feeding on several varieties. Mrs. Pearson was small in berry, and of a dirty green colour; Appley Towers small and not well coloured; Buckland Sweetwater swelled very large berries, some of which cracked, but of a beautiful amber colour; Madresfield Court had fine bunches and berries, but there was no improvement in the colour, few of the berries finishing to the footstalks; Mrs. Pince and Black Hamburgh were worse in colour, a like remark applying to Alicante, Gros Colman, and Black Morocco.

Knowing that Vines must have a good supply of nitrogen and potash in the soil to colour the fruit, I next tried manures rich in such. Last autumn I top-dressed with sulphate of lime (gypsum) at the rate of three-quarters of a pound per yard, forking it in lightly, the roots being close to the surface. Though lime may be in the loam, it may still not be in available condition as plant food till rendered so by some alkaloid. Afterwards a dressing of dissolved bones and sulphate of potash was given. When the buds started I top-dressed with a mixture composed of superphosphate five parts, nitrate of potash three parts, sulphate of iron and sulphate of magnesia one part each, repeating after setting, and again after stoning, and the season being showery little watering was required, and clear water only used.

All the black varieties now ripe are decidedly better in colour and finish. Mrs. Pearson is also much improved in size of berry and colour. Appley Towers and Black Hamburgh are very large, and as black as Damsons. Mrs. Pince, Gros Colman, Gros Guillaume, and Alicante are colouring fast, and looked like finishing well. No fault can be found with Madresfield Court, except an odd berry cracking, which must be expected when the house is used for plants, and the fruit is now nearly coloured to the footstalks.

I will write again when all are finished, and also give the results of different stocks I have tried for varieties which are difficult to finish, or are shy setters. The White Muscats all seem to have been improved, colouring earlier than other years. No leaves are turning brown around the edges, as sometimes happens, but are deep green and large, though no shade is ever applied, and the Vines are cropped heavily.—W. T., *Ireland*.

[Not young gardeners only will be obliged to our correspondent for the records of his experiments.]

FRUIT FORCING.

Cherry House.—The trees that were started early in the year are ripe in wood and plump in bud. The leaves, too, will not be capable of much further effort in elaborating the sap, and storing it in the buds and adjacent wood; therefore any undue excitement will cause the trees to start into growth, which must be guarded against by exposure to atmospheric influences as far as the house will admit, which is the best means of averting premature growth, to which the Cherry is liable when forced year after year successively. The border must not be allowed to become parchingly dry, but have a copious supply of water when necessary for keeping it a moist condition; and if the trees are weak afford liquid manure. To subdue red spider give an occasional washing with the garden engine or syringe, and if needful apply an insecticide, but by all means remove the roof lights, the cleansing influence of rain and invigorating tendency of dew, with the thorough moistening of the border, having a very beneficial effect.

Black aphis can hardly be kept from Cherry trees for any length of time, but the leaves and wood at this season, from their hard texture, are not inviting to them, yet if they appear on the laterals promptly use tobacco water, or dust the affected parts with snuff or tobacco powder. The narcotic is fatal to these somewhat hardly-killed insects, and it deters egg deposition on the young shoots. Cherry trees in pots are the most interesting of all fruits grown that way. They offer such a variety and afford fruit over so long a period that it is remarkable they are not more commonly seen. With very slight forcing they ripen the crop in May, and afford a succession up to August. In a house without heat, but light and well ventilated, ripe Cherries can be had early in June, and a succession may be maintained, with proper care, up to September, inclusive. Early Rivers, Empress Eugénie, May Duke, Archduke, Governor Wood, Black Eagle, Emperor Francis, Florence, and many other varieties are excellent. For planting out Early Rivers, Elton, Governor Wood, and Black Tartarian afford good crops of large fruit. Trees in pots must be regularly watered and syringed to maintain the foliage in health as long as possible.

Figs.—*Earliest Forced Trees in Pots.*—Directly the second crop of fruit is gathered examine the trees for red spider and scale, as keeping the soil somewhat drier at the roots, and the atmosphere being drier in consequence of a free circulation of air, these pests increase alarmingly. They are almost certain infestors of Fig trees in heated structures, and however alert the cultivator may be these enemies get ahead during the ripening of the fruit; therefore, when that is cleared off the trees recourse must be had to cleansing, and as the foliage and wood is far advanced in ripening destructive agents may be employed at a strength that would not be safe at an earlier stage.

If, therefore, these pests have made undesirable progress it will be advisable to syringe the trees with an approved insecticide or a mixture of petroleum, softsoap, soda, and water. One wineglassful of petroleum to 4 gallons of water, in which 8 ozs. of softsoap has been dissolved, with 1 oz. of washing soda whilst boiling, should be stirred briskly with a broom-handle whilst another person applies it to the trees with a syringe so as to wet every part of the tree, the under as well as the upper side of the leaves and all the wood. To prevent the mixture soaking into the soil a little dry moss may be tied round the stem, and then a sort of pyramid of the same placed about the plants. If the wood is badly infested employ a somewhat stiff brush for freeing it of the scale whilst wet. In bad cases repeat this in the course of a day or two, afterwards syringing thoroughly with tepid water. The trees will only need water to prevent the foliage becoming limp, ventilating to the fullest extent day and night; but protect the trees from heavy rains, which have a tendency to growth instead of securing that rest essential for those subjected to early forcing.

Early Forced Planted-out Trees.—As the second crop is ripening a circulation of air will be needed constantly, more of course by day than at night. If dull, wet weather prevail, a gentle heat in the pipes make all the difference between well ripened and insipid fruit. It also often makes impunity or otherwise from "spot," certain or uncertain. Watering at the roots must be diminished, and syringing discontinued, but a moderate air moisture may be maintained for the benefit of the foliage. If red spider is present, and there is heat in the hot-water pipes, coat these thinly with sulphur, or a good syringing may be given after the fruits have been picked close, choosing a time when there is a prospect of the moisture not remaining long upon the trees. As soon as the fruits are all gathered the trees may have a good washing with the syringe or engine to free the foliage of dust and red spider, otherwise a free circulation of dry warm air should be maintained in the house until the foliage commenced falling naturally, and which must not be accelerated by allowing the soil to become dust dry at the roots.

Unheated Houses.—When Fig trees are grown against walls the crops are not always satisfactory, especially in a wet season, but covering such trees with glass usually results in the produce of Figs of the highest excellence. Structures with a south aspect are the most suitable, and to have the trees thoroughly under command the roots must be restricted to narrow borders, one-third the width of the trellis being ample, and not more than 2 feet deep over plenty of drainage of a calcareous nature. The border may consist of good substantial loam with about one-fifth of old mortar rubbish incorporated. The calcareous matter is essential to the formation of nitrate of lime in the soil, and sand is an important constituent in building up the structure of the trees. With unobstructed light and provision for free ventilation the finest Figs may be obtained if the usual attention is given to feeding with liquid manure as required. It is also necessary that the growths be thin, acting on the extension system, but securing by judicious stopping a fair amount of spurs, and in no case allow more growths to be made than can have full exposure to light. The fruit is now advanced in swelling, and every pains must be taken to keep the foliage free from red spider. This may be effected by forcible syringing early in the afternoon, but do not syringe it if there is no prospect of the foliage becoming dry before night. Under such circumstances damp the border, especially in the afternoon, and occasionally with liquid manure.

Admit a little air early, increasing it with the sun heat, maintaining through the day a temperature of 80° to 85°, with free ventilation, closing early, so as to run up to 90° or 95°, even 100°, and when the sun is declining a little air may be admitted at the top so as to allow the pent-up air moisture to escape, the temperature gradually cooling down. Water or liquid manure, according to circumstances, will be required about once a week or oftener, in order to keep the soil in a properly moist condition. When the fruit begins to ripen lessen the supply of water and discontinue syringing, securing a circulation of air constantly, and freely ventilate when favourable. Husband sun heat, which will not do any harm if the atmosphere is not confined, a little ventilation being given so as to allow of the moisture escaping instead of condensing on the fruit and causing it to crack and mould.

Pines.—*Cleaning Houses and Beds.*—Cleanliness is essential to health and high-class produce. Bottom heat promotes certain and speedy work in Pine culture, hence the first thing to be seen to is the bed. If the bottom heat be afforded by hot-water pipes the material forming the bed, whether of tan or leaves, should be removed at least once a year, or insects, particularly woodlice, rapidly increase, the material also harbours other predatory vermin. All brickwork may be scalded and brushed with hot limewash, the wood and ironwork thoroughly cleansed with soap and water, using a brush, keeping the soapy water as much as possible from the glass, which should be cleansed inside and outside with water only. If necessary the wood and ironwork may be painted, and the roof made as watertight as possible. Beds that are chambered, having hot-water pipes covered with slate or other material, are much in advance of those surrounded or passing through beds of rubble. Those composed of the latter should be turned over, and any dirt or small parts removed to allow the heat given off by the hot-water pipes to penetrate evenly through the whole to the bed. Provide fresh tan in other cases, and if wet turn it occasionally on fine sunny days. With hot-water pipes beneath about 3 feet depth of tan is ample, more will be needed where such aid is not obtained.

Potting.—Suckers started in June will soon have filled their pots with roots, and must be shifted into a larger size before the roots become closely matted together. Queens should have 9 to 10-inch pots, and those of stronger growth 11-inch pots. Water the plants immediately after potting, and plunge them in a bed having a temperature of 90° to 95°. There is no greater mistake in growing Pines than crowding young plants, as they become drawn and weakly instead of having a sturdy base. Attend to the bottom heat of beds that have been recently disturbed or upset by the removal or replacing of plants, not allowing the heat to exceed 90° at the base of the pots without immediately raising them, as too much heat will disastrously affect Pines in fruit or those having the pots filled with roots.

Examine the plants for watering about twice a week, and maintain a moist, genial, well-ventilated atmosphere. The climatic conditions are now so favourable that Pine plants grow vigorously; therefore discontinue shading, admitting air plentifully when the temperature ranges from 85° to 95°, affording fruiting plants a night temperature of 70° to 75°, and to succession 65° to 70° at night. Reserve, if possible, more suckers for starting at the commencement of September.

THE KITCHEN GARDEN.

Globe Artichokes.—Plants that are pushing up late flowering growths will be assisted by thorough soakings of liquid manure, and the heads will then form a very acceptable dish in many establishments at a time of year when variety is most desirable. Old flower stems ought to be cut down according as they are cleared of heads, their longer retention having a weakening effect upon the plants. Seedlings are now sufficiently advanced to be selected from. Only the very best forms or those with stout flower heads and succulent scales should be saved, those much branching, with small heads and thin, prickly scales, not being worth garden room.

Lettuce.—A late autumn supply of Lettuce may be found acceptable for mixing with Endive in the salad bowl. A warm border should be chosen for this late crop, sowing the seed thinly in shallow drills 9 inches to 12 inches apart. With Cos varieties also sow All the Year Round, Commodore Nutt, Golden Queen, and Early Paris Market Cabbage varieties, and if all do not heart in, the early varieties will most probably do so. A good breadth of border should be sown; no transplanting will then be necessary, and if arranged where the Lettuce can be conveniently protected by frames so much the better.

Mushrooms.—Open-air beds formed now with well-prepared manure and duly spawned should be producing Mushrooms early in

October, and a good succession may result if other beds are made and spawned a month later. Neither peat moss manure, short manure, nor nearly all horse droppings are suitable. All the short stained straw, to the extent of fully one-third of the bulk, should be saved with the droppings from corn and hay-fed horses, and all be thrown into a heap to ferment. At this time of year manure heats quickly and fiercely, and unless the heaps are turned inside out every three or four days the centre becomes dry and mouldy—the result of overheating—and worthless accordingly. The manure ought to be kept just moist by gentle waterings when turned, and in the course of a fortnight it should be sufficiently sweetened and freed of rank heat to admit of a ridge-shaped bed being safely formed of it. If these open-air beds become violently hot after they are made, as they are liable to do if the manure has not been well prepared, they are unfit to produce Mushrooms, and not much need be expected of them if the other extreme is reached and no heat be generated.

Forming the Beds.—Ridge-shaped beds should be formed on a dry hard base where they will not be unduly exposed to cold winds, and where, also, rats and mice can be excluded or kept under. They may be of any length, and should, when completed, be about 2½ feet to 3 feet wide, and 3 feet high in the centre, which ought to be narrowed to a width of 9 inches. Thin layers of well-separated manure should be put together and made solid by beating and trampling, finishing off by combing down the sides and ends so as to give the bed the appearance of having been thatched. The manure at the time ought to be moist enough for it to bind together, but must not be so wet that the moisture can be squeezed out of it.

Spawning and Soiling.—When the heat in the beds has declined sufficiently for the inserted ends of trial stakes kept plunged in the manure to be borne comfortably in the palm of the hand on testing, the time has arrived for spawning. Give the preference to new spawn, break each brick into eight pieces, and insert these flatly slightly below the level of the surface of the bed, and about 8 inches apart each way. Avoid forming deep holes for the lumps of spawn, and take good care to pack it tightly in the manure. The mycelium should commence spreading from the spawn in three or four days, when the beds may be soiled over, but previous to that they should be protected from rains and cold winds. Case over with the best fresh loam procurable to a thickness of fully 1½ inch after it has been well beaten and smoothed over with the back of a spade. There must be no watering and plastering over of the soil, as this is invariably followed by shrinking, cracking, and injury to the bed.

Casing over the bed is sometimes followed by a sudden and dangerous rise in the temperature, the same thing happening with a change from comparatively cool to moist warm weather. It is necessary, therefore, to examine the trial sticks frequently, and in order to obviate the dangers attending a great increase in heat pierce holes through the centre of the ridge with a pointed iron rod, this letting out the confined vapour. As soon as it is seen there is a tendency to an undue lowering of temperature rather than an injurious rise, cover the bed heavily with the longer straw litter saved when the droppings were separated from it.

Winter Tomatoes.—Where a supply of Tomatoes must be kept up nearly or quite all the year round a number of plants should be introduced into a low forcing house, in succession to either Cucumbers or Melons, as soon as possible. The fruit fails to set satisfactorily during the short dull days of the late autumn and winter months, and must, therefore, be secured earlier, ripening taking place slowly all through the winter. It is not yet too late to sow seed. Comet, The Cropper, Ham Green Favourite, as well as others, are suitable for the purpose, and if the plants are raised very thinly in pans on greenhouse shelves they will be sturdy, and move into 3-inch pots without experiencing any perceptible check. These winter crops are best grown near the glass. Plant not less than 12 inches apart in a narrow ridge of good loamy soil, and train to a single stem. The alternative plan of fruiting Tomatoes in 10-inch pots answers well. If prepared in the open, house the plants before wet cold weather sets in, or they may become diseased. If possible arrange the plants on a bed of ashes, and allow them to root out into these, then if the ashes are kept moist the plants derive considerable benefit from the association.

Old plants under glass may be made to produce a good late autumn and winter crop. Lay in young shoots thinly up the stems and over the trellis, and top these beyond the first bunch of flower. Fruit will set freely on these shoots, and if the plants are well attended to at the roots a remunerative crop is the result.

PLANT HOUSES.

Stephanotis floribunda.—Plants that have flowered and made good growth must be fully exposed to the sun. Admit air liberally to ripen and harden the wood. This is the secret of a good supply of flowers another year. Syringe twice daily to keep the plants clean, and do not allow the ends of growing shoots to twist together. If they once get into this confused condition and mealy bug exists upon them it is impossible to keep them clean. In the end they also entail double the labour to remove them from the trellis than would be required to train the shoots properly as they grow. Plants that are root-bound and still growing freely should be supplied with weak stimulants every time water is needed. Where an increase in the number of plants is required it is a good time to insert cuttings. Growing shoots moderately soft, with the soft point removed, root freely in heat under hand-lights. If these are kept in a temperature of 60° they will, if potted, make good plants by the end of next season.

Ixoras.—It is a mistake to shade these plants, they ripen their wood and flower with greater freedom when fully exposed to the sun than when grown in mixed stoves and are shaded. Plenty of cuttings should be rooted, soft-growing ends being selected for this purpose. They should be inserted singly in small pots, as they root quickly in brisk heat. Once they are rooted and will bear full exposure place them on a shelf close to the glass, and transfer when ready into 4-inch pots. These plants, where plenty of heat is at command, are easily grown, and for general purposes they are more effective with one or two trusses of flower in 4-inch pots than plants of a larger size. Plenty of heat and careful watering are needed, but they are not particular about soil, although they do best in peat and sand. We have, however, succeeded in growing them well in equal proportions of loam and leaf mould that has not been heated and coarse sand. During the winter the atmosphere should not be kept too moist or the syringe used over the foliage. The old Ixora coccinea requires the most careful watering perhaps of any.

Begonia semperflorens carminea.—This is one of the best Begonias that can be grown, and it would flower all the year round if allowed to do so. It will, however, flower profusely eight months out of the twelve. Those that commenced in January last have continued to flower up to the present time. These plants should be cut back, keeping them on the dry side until they break into growth, when they may be turned out of their pots and the roots partially reduced and replaced in the same size. They will soon commence growth in a vinery or any structure where a little heat is maintained. Water carefully until they are rooting freely. Cuttings may be inserted singly in 2-inch pots, but it is necessary to select shoots that have an eye at the base. Any of the tops will root, but they only extend and flower, being useless after they are pruned back, unless by accident they force a growth bud at the base. If this is provided when the cuttings are inserted all will go well. This applies to many evergreen and semi-tuberous kinds.

Allamandas.—We saw a fine plant recently, and was told it had ceased flowering. It was growing luxuriantly, but had not a single flower. The reason for this was the plant was crowded with growths, and the house shaded. The growths of Allamandas should be evenly but thinly disposed over the roof of the house, and be fully exposed to the sun. At one time we shaded them during the hottest hours of the day, but have found this practice unnecessary, and they make short-jointed wood and flower more profusely without shade. From three plants not eighteen months old we have gathered fully 500 blooms. Every shoot about 1 foot from where they branch should be full of flower buds. It is necessary after branching two or three times from the base to thin the shoots, and leave only those that are required to furnish the roof. Allamandas should under proper treatment begin flowering when the growths are 18 inches long, and continue as long as water and liquid manure is supplied if they are grown in pots.

THE BEE-KEEPER.

AFTER THE HONEY FLOW.

Except in the Heather districts there will be little honey stored after this date, although to the casual observer this statement may appear incorrect, as there are still numerous flowers to be seen in the fields and hedgerows. The second crop of White Clover is still in bloom. It is, however, not much frequented by the bees, which are well aware there is not much honey to be obtained from that source so late in the season.

The majority of the flowers in the meadows are now over, but many in the garden yield either pollen or honey, on which the bees work freely. Mignonette is one of the best honey-producing flowers at this time, but there are not many districts where there is sufficient space devoted to its culture for the bees to derive much benefit from it. Asparagus is another plant which blooms freely at this season. Although the blooms are small and insignificant the bees are very partial to them. From this source there is doubtless a bountiful supply of pollen obtained, but not much honey. Pollen, however, is an important factor in the hive, as the well-being of a colony largely depends on a good store of pollen. Bees should be encouraged to breed throughout the autumn; and if the weather be inclement, so that they are unable to leave their hive, or if fine, a scarcity of flowers, the young stock of bees will be daily supplied from the stored up pollen, and will be much in advance of those stocks which are not so favourably situated.

Some of the hedgerows are now a mass of Blackberry flowers. If the weather is fine the bees obtain honey from them, but as it is dark in colour it is useless except for the bees to store for present requirements or for wintering. A small quantity of honey obtained from this source will soon spoil a good sample of White Clover honey that may have been previously stored in the hive. Many bee-keepers have found this out to their cost when too late, so it is advisable to extract a good sample of honey as soon as it is properly ripened in the hive.

Another source from which an inferior honey is obtained at this season is the Spanish Chestnut, the honey being thin and watery, with a very unpleasant aroma. There is no mistaking honey obtained from this source, as directly the covering is removed from the top of supers, the sickly smell arising from it is perceptible. I once had a fine sample of honey spoiled in this way owing to the supers being left on the hive a day or two too long, so it is advisable to remove the supers as soon as the honey flow is over.

Honey Fermenting.

What is the cause of fermentation in honey? is a question that is often asked. It is caused by the careless bee-keeper who quite unintentionally, it may be, removes the honey from the hive before it has become properly ripened. Honey after it is gathered from the flowers has to go through several processes in the hive before it is ready to be sealed over by the bees. Bees never make a mistake in this matter. If they have not sufficient storage room in the supers they will store their honey in the brood nest, or in any empty cells within their reach, until the high temperature of the hive has ripened the honey, which in the meantime has evaporated considerably, so that the bees can fill the cells from what has been previously stored in other parts of the hive. It is then sealed over, and is ready for extracting, or for storing in the comb. When honey is coming in freely the bees store it in the first cells that come to hand. The busy worker will remove it during the night to the super, or where it is required.

It will at once be seen the care that is required in extracting honey. If unripe it will ferment, and after being kept for a few weeks or months will be useless, and if disposed of before fermentation is suspected it will have the effect of doing an injury to the bee-keeper's interest. It is advisable to always extract honey, or remove the supers in readiness for extracting purposes, before the bees commence work in the morning. I always practise this plan in my apiary, and am never troubled with fermented honey.

There is less danger of obtaining fermented honey from sections if due care is taken in seeing that all the cells are properly sealed over before their removal from the hive. It is better to allow them to remain on the hive two or three days too long than to remove a day too soon. If the honey is not properly ripened they will soon commence to drip, and no amount of after treatment will prevent it.

Storing Honey.

Bee-keepers, whether in a large or small way of business, will doubtless at this season be in the happy position of having a surplus of honey to store away for future requirements. If in sections the wood should be properly cleaned of any propolis that may adhere to them; a blunt knife is a capital instrument for that purpose. If the wood is at all stained a coarse piece of sandpaper will remove it readily. A mark should then be made on the top of each section, so that they may always be stood in the same position they occupied in the hive, as the cells being built with an upward slope there will then be no danger to be feared from dripping, which would be the case if they were stood the opposite way and some honey remained in an unsealed cell. The sections may then be glazed as advised in previous notes, or be wrapped separately in a piece of paper to keep them from the dust, as however carefully packed dust will often find its way through a small crevice that may be unseen, and is then difficult to remove from the comb. Store in a dry place, a cupboard in a room in which there is a fire often will make a capital place for that purpose if the temperature is kept at about 60°. The honey will not granulate as readily in the comb as it would if placed in a lower temperature.

Extracted honey may be placed in a similar position if granulation is not desired; but if this makes no difference it may be stored in any cool, dry place, and will keep in good condition for several years. Granulated honey is pure; the public are now beginning to realise this fact, and there is now much less difficulty in disposing of good samples of granulated honey than formerly.—An English Bee-keeper.

A HEAVY SWARM.

I had, on the 7th of this month (July) a swarm of bees, the largest I ever saw; weight with skep, 11 lbs.; weight of skep, 3¾ lbs., leaving 7¼ lbs. for the bees. I placed them in a 16-bar frame hive together with a small swarm that I had had a day or two before; placing the interceptory board in the middle; this day, July 26th, I have had to place a crate with twenty-one sections on, as the body of the hive is quite full.

I had a swarm about six years since that weighed just over 6 lbs., and I think that I wrote and informed you of the fact, and at the same time sent the number of bees, as I took the trouble to count ½ lb. of bees that I was obliged to destroy as they had got under the roof, and when the sun was hot the wax and honey ran into the room below.—N. H. J.

TO CORRESPONDENTS

*** All correspondence relating to editorial matters should, until further notice, be directed to "The Editor," *8, Rose Hill Road, Wandsworth, London, S.W.* It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects, through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor.

Training for Examinations (*Colvile Browne*). — We have received the "List of Successes" which you have forwarded of candidates who, by your aid, have passed the R.H.S. examinations. You have good reason to be satisfied with the results of your endeavours, and not less so by the appreciation of students of your methods of teaching. Such intellectual exercise as you afford to young gardeners is excellent training for them whether they pass in examinations or not, and we consider your terms very reasonable indeed.

Aerial Roots on Vines (*R. S. U.*).—These are usually attributed either to the maintenance of a very moist atmosphere in the early stages of the growth of the Vines, or to the roots in the soil not being able, by their paucity or defect in the border, to obtain the essentials needed by the Vines. In many instances both those causes operate in inciting the emission of the stem roots in question. At the same time we have seen them freely produced by Vines that afforded good crops of excellent Grapes, though the reverse is more frequently the case. Where such roots exist it is a safe plan to let them alone.

Tomatoes in Vineries (*W. S.*).—Tons of Tomatoes are grown in vineries every year, and where the plants have light enough they bear and ripen good crops. When the Vines cover the roof densely (and it is not at all uncommon to find the growth and foliage much too crowded) Tomatoes that may be attempted to be grown under them become drawn, and are of little or no value. We know at this moment of splendid Grapes and excellent Tomatoes ripening in the same house—a three-quarter span. The Vines are not closely planted, and the laterals are as thinly disposed as shown in the illustration on page 101 last week. The Tomatoes cover the back wall of the house.

Gardeners' Pensions (*C., Portsmouth*).—We do not know of a society which grants old age pensions to gardeners other than the Royal Benevolent Institution. An old age pension fund, and an excellent one it is, is established by the London County Council for the gardeners employed in the metropolitan parks which are under that body. An accumulation fund of the monies of members not used in sickness is one of the advantages of the Gardeners' United Provident and Benevolent Institution; but we do not know of gardeners' annual old age pension funds other than those above named. If there are any others we shall be glad to receive particulars of them.

Grapes Colouring Indifferently (*W. H. T.*).—In addition to the farmyard manure you may use during the growing period the following mixture: — Bone superphosphate, three parts; nitrate of potash, two parts; and sulphate of lime, one part, mixing thoroughly and applying at the rate of 2 to 4 ozs. per square yard (1) when the Vines commence growing, (2) as soon as the berries are set or thinned, (3) when the Grapes a quarter to half grown, and (4) as soon as the stoning is completed, always when the soil is moist, washing in moderately. In autumn, or when the Vines are pruned, supply a mixture of native guano, fish meal, basic slag phosphate, and sulphate of potash in equal parts, mixing thoroughly and applying at the rate of 7 lbs. per rod, or 4 ozs. per square yard, pointing in lightly. This we have found very effective.

Chrysanthemum Shoot with Bud Eaten Out (*W. D.*).—The bud in the shoot has been eaten out by some minute grub or caterpillar, but beyond the dirt left by the destructive creature there was no trace of it. There may probably be some further remains of the pest to be found on a close scrutiny of the infested plants, if as we suspect the mischief has been caused by a small caterpillar. If you find a fine silken web anywhere on the leaves there will most likely be a little substance beneath it; finding such please forward intact, and we may possibly tell something more at a later period, or when the moth emerges. The early brood of the grey streak moth (Glutella porrectella) sometimes eat the "hearts" out of the shoots, drawing the leaves together by means of silken threads, and conceal themselves (caterpillars) in the middle of them, one in each shoot, eating out the point. In other instances the common angle shades moth (Phlogophora meticulosa) and the small angle shades (P. lucipa) eat out the centre of the growths. This, of course, is done by the caterpillars, which usually lurk in the ground by day and come out to feed at night, but in the young state they may remain in the points of the shoots during the day. We have not noticed any particular presence of these pests this season, but the weather is suitable for them.

Cucumber Stem Diseased (*H. W. P.*)—We were unable to find any insects in the stem, or anything in the shape of an organism, visible or microscopic, likely to cause the stem to decay. This appears due to what is known as "canker," the tissues being quite brown and destroyed. The roots, as you say, appear all right—at least, there was no micro-organism in them that we could discover. There may have been minute insects on the affected part when it was sent off, but if so they had been so smashed in transit as to be altogether undistinguishable. Oftentimes a minute insect affects the collar of the plant, and so rasps the bark as to cause decay, the remedy for which, and canker, is a drier condition about the stem and rubbing quicklime into the affected parts. The lime will also destroy the small insects if dusted upon them.

"Fysal Hemp" (*S. J. A.*).—You wrote "Henry" so plainly last week that we were misled. We are now inclined to think the word is Hemp, though there is scarcely the ghost of a "p" in it. Please do not regard this as a reproach, as we much fear we write hundreds of words without a good, plain, sensible alphabetical in them, though the compositors seem in some mysterious way to know what we mean. We do not know the particular kind of Hemp, if Hemp it is, that you mention; nor do we know of any other kind of Hemp that we could advise to be grown as profitable for its fibre in the average summers of this country. If any of our readers can speak from experience on the point and help you we shall be pleased to hear from them. As to procuring seed, and the quantity to sow, we know of no firm more likely to supply it, with the requisite information, than Messrs. Vilmorin Andrieux & Co., Quai de la Megisserie, Paris; but we doubt very much the realisation of a fortune from an acre of "Fysal Hemp," or whatever the supposed lucrative plant may be. We have heard of a Sisal Hemp, information about which might be procured from Kew.

Cucumbers Failing (*G. R.*).—The turning yellow of the embryo fruits when an inch long may be the result of (1) Dryness of the soil, not on or near the surface, but where it is contact with the heating chamber (if the bed is over hot-water pipes). (2) An attack of minute nematoid worms (which is more serious). (3) Something unfavourable in temperature or atmospheric conditions. We have known incipient fruits to collapse under all these causes. If you will send specimens as soon as you read this reply, not to Fleet Street, but to the address at the head of this column, they shall be carefully examined. It may be advantageous to give fuller particulars of the case and treatment than can be conveyed on a postcard. Microscopical examinations cannot be made in a day or two, and that is why we like to receive specimens with as little delay as possible with the object, if practicable, of publishing a reply next week. Delay is inevitable when editorial communications are not sent to the address that is prominently given at the head of the first article in each issue of the *Journal of Horticulture*, and of the "Correspondent's" column.

A New Pea (*S. H. Wright*).—We have received the Peas you have sent, as the result of a cross between Sharpe's Triumph (pollen bearer), and Carter's Stratagem (seed bearer). We also note that the reverse crosses proved worthless. We have no doubt your description of the variety as to habit is correct—namely, height 3 to 3½ feet, sturdy, short-jointed, foliage bluish green. The tops sent are certainly stout, short-jointed, and generally the very fine full pods are produced in pairs. The peas, of which most pods contained nine, and several ten, are large and as good in colour as could be desired, and hence the name you have given, "Wright's Emerald." We believe there is an "Emerald Gem" Pea in cultivation, and hence the similarity of names is close. You state the Peas sent had been in a "shop window for two days in the broiling sun," and you ask us, therefore, to "make allowances." Moreover, through having been misdirected (see instructions at the head of this column) another day was lost. As to "allowances," they are never made by judges or examiners. Products are appraised by their condition at the time of inspection. Making "allowances" would lead to nothing but confusion. The Pea, judging by the sample, is a very fine one. We have seen no finer this year. As to quality, when cooked, we can only say it had been prejudiced by the drying and delay. We may say of the Pea that if it would grow as well in gardens generally as it has done in the place of its nativity, it is a promising acquisition, and should be grown in the gardens of the Royal Horticultural Society with other old and new varieties, and if it pass the ordeal with honours you will not regret having sent it there.

Border Carnations (*F. A. S., Somerset*).—The southern slope of sandy soil may be too dry for the well-being of the plants, especially during prolonged hot weather, though the effects of drought may be mitigated by deep culture and mulching with short manure in May. Some of the choice florists' Carnations are too delicate in constitution for border cultivation, but there are plenty of varieties sufficiently robust to succeed in the open ground without any protection in winter. It is important to have sound healthy plants to begin with, and plant soon enough in late summer or early autumn for them to take good root-hold and become well established before winter. The sooner the planting is done the better when the ground is in favourable condition, or, in other words, moist, not on the surface alone, but down to and in the subsoil, and the days are not hot and bright; if such should occur after planting it may be prudent to shade for a few hours with inverted flower pots, removing them long before nightfall. The slightly northern slope would probably be better for the plants, and if you could incorporate with it some dried and pounded clay, spreading an inch or two in thickness on the surface, and mixing it through the mass by careful digging with a fork, it would greatly improve its texture. The subsoil should also be well broken up and enriched with manure, and in all probability ½ lb. of basic slag powder and 2 or 3 ozs. of kainit per square yard blended with the soil before planting would have a beneficial effect; and on the approach of dry weather in spring we have found a dressing or two of salt, 1 to 2 ozs. per square yard, and hoed in of service to the plants, subsequently mulching as above advised. We have not found any advantage in covering the plants as protection against frost—in fact, well constitutioned varieties, well established before winter, need no protection. When the blooms are opening canvas or other appropriate shading preserves their purity and prolongs their season of beauty. As to slugs, no doubt occasional dustings of soot are repugnant to them and beneficial to the plants, taking care not to use it in excess; but we have not found anything so effectual as clear lime water applied through a rosed can an hour after nightfall, as if giving the plants a good watering. The pests are then caught feasting. Day-time applications of anything are of comparatively small use, as the slugs are resting beyond their reach. Many Carnation plants fail through being planted on the eve of winter and very late in the spring.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*M. Davison*).—Though your letter was wrongly addressed it has reached us, but no specimens have come to hand. Read the instructions given above, after which send fresh flowers, and we will endeavour to assist you. (*F. V. C.*).—1, Epilobium angustissimum; 2, Veronica rupestris; 3, Cassinea fulvida; 4, Lilium croceum; 5, Anchusa sempervirens; 6, dead. (*L. A. W.*).—1, Clematis coccinea; 2, Agrostemma coronaria; 3, Veronica decussata; 4, Leycesteria formosa. (*S. M. M.*).—Cactus Dahlias are recognised as florists' flowers, which can only be named by comparison in a large collection.

COVENT GARDEN MARKET.—August 4th.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	1 9	to 3 0	Lemons, case	11 0	to 14 0
Currants, Black, half ...	7 6	0 0	Raspberries, tub, £34 to £35		
,, Red, half	3 6	4 0	St. Michael's Pines, each	3 0	8 0
Filberts and Cobs, 100 lbs.	0 0	0 0	Strawberries, per lb.... ...	0 0	0 0
Grapes, lb....	0 8	2 0			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, ½ sieve	0 0	0 0	Onions, bushel	3 6	4 0
Beet, Red, doz	1 0	0 0	Parsley, doz. bnchs	2 0	3 0
Carrots, bunch	0 3	0 4	Parsnips, doz	1 0	0 0
Cauliflowers, doz.	2 0	3 0	Potatoes, cwt.	2 0	4 0
Celery, bundle	1 0	0 0	Salsafy, bundle	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Seakale, basket...	1 6	1 9
Cucumbers...	0 4	0 8	Scorzonera, bundle	1 6	0 0
Endive, doz.	1 3	1 6	Shallots, lb.	0 3	0 0
Herbs, bunch	0 3	0 0	Spinach, pad	0 0	0 4
Leeks, bunch	0 2	0 0	Sprouts, ½ sieve	1 6	1 9
Lettuce, doz.	1 3	0 0	Tomatoes, lb.	0 4	0 0
Mushrooms, lb.	0 6	0 8	Turnips, bunch	0 3	0 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d
Arbor Vitæ, var. doz. ...	6 0	to 36 0	Fuchsias, doz.	4 0	to 6 0
Aspidistra, doz....	18 0	36 0	Heliotropes, per doz. ...	3 0	5 0
Aspidistra, specimen ...	5 0	10 6	Hydrangeas, doz.	8 0	10 0
Calceolarias, doz.	3 0	6 0	Lilium Harrisi, doz.... ...	12 0	18 0
Campanula, per doz... ...	4 0	9 0	Lobelias, doz.	2 6	4 0
Cockscombs, per doz... ...	3 0	5 0	Lycopodiums, doz.	3 0	4 0
Coleus, doz.	2 6	4 0	Marguerite Daisy, doz. ...	4 0	9 0
Dracæna, var., doz.	12 0	30 0	Mignonette, doz.	4 0	6 0
Dracæna, viridis, doz. ...	9 0	18 0	Myrtles, doz.	6 0	9 0
Euonymus, var., dozen ...	6 0	18 0	Palms, in var., each... ...	1 0	15 0
Evergreens, var., doz. ...	4 0	18 0	,, specimens	21 0	63 0
Ferns, var., doz.	4 0	18 0	Pelargoniums, doz.	8 0	12 0
Ferns, small, 100	4 0	6 0	,, Scarlet, doz.	2 0	4 0
Ficus elastica, each	1 0	7 0	Rhodanthe, doz.	4 0	6 0
Foliage plants, var., each	1 0	5 0			

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchid Blooms in variety.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms ...	2 0	to 4 0	Marguerites, 12 bnchs. ...	2 0	to 3 0
Asparagus Fern, bunch ...	2 0	3 6	Maidenhair Fern, doz. bnchs.	4 0	8 0
Asters (French) per buch.	0 6	1 0	Mignonette, doz. bnchs. ...	2 0	4 0
Bouvardias, bunch	0 4	0 6	Orchids, var. doz. blooms.	1 6	12 0
Carnations, 12 blooms ...	1 0	3 0	Pelargoniums, 12 bnchs. ...	4 0	6 0
,, doz. bnchs. ...	3 0	6 0	Pyrethrum, doz. bnchs	1 6	3 0
Cornflower, doz. bnchs. ...	1 0	2 0	Roses (indoor), doz.... ...	0 6	1 0
Eucharis, doz.	2 0	3 0	,, Tea, white, doz. ...	1 0	2 0
Gardenias, doz.	2 0	4 0	,, Yellow, doz. (Niels)	1 6	4 0
Geranium, scarlet, doz. bnchs.	3 0	4 0	,, Red, doz. blooms ...	1 0	2 0
Gladioli, doz. bnchs. ...	4 0	8 0	,, Safrano (English) doz.	1 0	2 0
Lavender, doz. buchs. ...	6 0	8 0	,, Pink, doz....	1 0	2 6
Lilium longiflorum, 12 blooms	2 0	4 0	,, outdoor, doz. bnchs.	2 0	6 0
Lily of the Valley, 12 sprays	1 0	2 0	Smilax, bunch	2 0	3 6
			Tuberoses, 12 blooms ...	0 3	0 4

THE CROPS OF 1897.

HAVING arrived at the beginning of August we are now in a position to see how we stand with regard to the farm crops of this year. Of course devastating storms, like that which has ruined our Essex brethren, may come upon us, or we may have a harvest as long and dreary as was the last, still we can now judge pretty fairly of our roots, and estimate the weight per acre of corn. The correspondents of the "*Agricultural Gazette*" have furnished statistics from their various counties, and as they are all men who know what they are talking and writing about we may feel certain that we may accept their views as correct in the main.

Northumberland comes first in the list. There are from this county eighteen correspondents; three of these speak of the Wheat crop as being good, four as an average, three speak of it as below. We hardly call Northumberland a Wheat-growing district. Of the Oat crop eleven write of it as under an average. Ten speak well of Barley, and as harvest is late in this county there is still time for it to do fairly. Turnips are, as a whole, looking well, but there, as well as in other places, rain is needed. Hay seems to have been fair, and well got. Similar remarks apply to Cumberland. Seeds and meadow hay are reported as magnificent in Westmoreland, but finger and toe has attacked some Turnips. Possibly that land is Turnip sick. Wheat is said to be good in Lancashire, and from Durham a gentleman writes that where phosphate powder was applied to grass the hay crop has been very heavy. The majority of Yorkshire correspondents pronounce Wheat to be good. As this is such a large county the Barley accounts vary, but the general idea is that the crop is an average one. Turnips will generally be good if rain come in time. Where Potatoes are grown they look well—*i. e.*, as a field crop.

The Wheat crop is reported as light and short in the straw in Nottinghamshire, while Turnips appear to be good; but there is a cry for rain. Barley is good on good land; the less said about the other the better. There appears to have been too much rain in the winter for the Wheat plant in Leicestershire, and there is too little now to finish off all crops, Potatoes and Turnips suffering most. Cheshire gives promise of a big Mangold crop, also of a good average yield of Potatoes. Barley is regarded as better than usual in Shropshire, and Mangolds good; but finger and toe and wireworm are at the Turnips, these and pastures being "burnt up." Mr. A. P. Turner says Barley is a full average in Hertfordshire, hay splendid in quality, and Turnips a full plant. Basic slag accounts for some very good Oats in Worcestershire, while Potatoes and Turnips would be good had they a little more moisture. Early sown Barley is the best in Warwickshire and Northamptonshire; this happens nine times out of ten generally, but many people will not believe it.

Wheat is reported as thin in Lincolnshire, but Barley promises to be an average crop, while in Cambridgeshire and Huntingdonshire Wheat, Barley and Oats are said to be good average crops; Turnips and Potatoes want rain, but Mangolds like the heat. Wheat is given as below the average in Norfolk, Barley failing for want of rain which is also much needed by Turnips and Potatoes. "No wheat straw," is the report from Suffolk, though the yield of grain may be fair. No disease among Potatoes so far and Barley good.

In Hampshire early sown Wheat on good land is quite an average crop, elsewhere below. Barley is ripening prematurely, and Oats would have preferred more moisture. Tares are very good; so far sheep in this county have paid well this year. Potatoes, a short crop and disease manifest. In Wiltshire the late sown Barley was caught by May frosts which the earlier escaped, and rain is wanted for roots. The good Turnip crops need rain in Bedfordshire, and Barley is coming on too fast. Wheat is said not to be filling well in Hertfordshire, and in Bucks it is thin and storm-broken in many places. In Oxfordshire Wheat and Barley are mostly under average, but better tidings come from Gloucestershire; and Somerset, which has much grass land, sends a grand record of hay.

Wheat varies from very good to very bad in Berks, but Peas have podded exceptionally well. Barley will disappoint the growers, and possibly the maltsters too. A sad record of crops comes from Essex, through destruction by hail, but early Potatoes have been good. In Surrey Wheat is said to be 10 and Barley 15 per cent. under average, but Cabbage has done well, notwithstanding the dryness. Hops are regarded as being 50 to 75 per cent. of an average in Kent; late frosts injured early Peas, and Turnips are suffering by drought. The majority of observers report Wheat as a poor crop in Sussex, Barley average, Oats short. Most Wheat is given as an average crop in Dorsetshire, and Potatoes look well. Reports are not very bright from Devon and Cornwall, except as to root crops, but in Monmouth all crops are said to be up to the average, except one or two lots of Oats, so Monmouth is to be congratulated.

WORK ON THE HOME FARM.

We are glad to hear of refreshing rains having visited many parts of the country; but, alas! all districts have not been favoured with them, and we know of several which are suffering from drought. The heat has not been so intense, but drying winds have prevailed, so that at the present time there is little or no moisture within 4 inches of the surface. The effect on Turnips and Potatoes is serious. Showers now would be of little avail; heavy and continuous rain is required both for roots and pastures. Grain crops, except Oats and late Barley, hold their own fairly well, and in the case of Wheat we can see an improvement, and an excellent prospect. Contrary to what one might have expected harvest is not approaching very quickly, except in the sunny south. We had rather it had come up to time generally, for the work amongst Turnips is so nearly complete that we should have been ready for it sooner. However, we must wait and begin as early as ordinary common sense will allow us.

Many pastures are looking like deserts; we have seen, in a good country, fields with nothing in them to hide a mouse, and the question of provision for our stock will soon be a serious one. We have a good store of excellent fodder put by for the winter; what will soon exercise our minds more will be how to keep the animals until that time comes without trenching on the winter store. What a contrast this all is to last season, when everything was growing fast and keep was almost too abundant. Streams are now running very low in the eastern and midland counties, and many ditches are dry or nearly so; an opportunity therefore offers itself for such being cleansed at a reasonable cost, and should not be neglected. Hedges, too, are now so well grown, and the wood so ripened that they might be trimmed pretty closely or even scotched without damage.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

DATE.	9 A.M.					IN THE DAY.				
1897. July.	Barometer at 32°, and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature.		Radiation Temperature		Rain.
		Dry.	Wet.			Max.	Min.	In Sun.	On Grass.	
	Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Inchs.
Sunday .. 25	29·885	71·1	61·4	W.	68·1	77·9	61·4	126·8	56·7	0·076
Monday .. 26	29·919	67·0	58·9	W.	66 9	70·1	57·9	116·8	53·6	0·095
Tuesday .. 27	29·866	63·4	58·5	N.	65·2	72·5	53·6	120·9	49·9	0·024
Wednesday 28	30 038	65·2	58·6	W.	64·7	72·1	55·8	97·8	50·9	—
Thursday .. 29	30·2e4	68·3	63·2	N.W.	64·9	73·6	58·2	97·1	50·9	—
Friday .. 30	30·230	68·9	62·6	N.	64·9	83·2	58·7	134·2	50·9	—
Saturday .. 31	30·191	67·0	60·9	N.	66·6	78·8	57·6	122·9	51·0	—
	30·070	67·3	60·6		65·9	75·5	57·6	115·2	52 0	0·195

REMARKS.

25th.—Bright sunshine and fresh breeze; heavy showers at 2.45 and 4 P.M.
26th.—Bright and fresh morning; clouding over and a smart shower at noon; frequent thunder and occasional spots of rain from 3 P.M. and a heavy shower at 6.40 P.M.
27th.—Rain at 6.45 A.M. and at 11 A.M., and generally cloudy till noon; sunny afternoon.
28th.—Fair, but almost sunless, throughout.
29th.—Overcast day; a little faint sunshine after 3.30 P.M.
30th.—Overcast early; bright, warm, and fresh after 10 A.M.
31st.—Bright, with pleasant breeze.

Another brilliant week, with scarcely any rain.—G. J. SYMONS.

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COLOURING GRAPES.

FEW things are more disappointing in Vine culture than badly coloured Grapes. Red Hamburghs are said to be as sweet, or even sweeter, than black, which is doubtful, and no one appears to care about setting the question at rest by means of analysis or even a saccharometer; but green Muscats are never so richly flavoured as those of a clear golden amber. There is something in colour, indeed, so much so, that scarcely any eater of Grapes cares about reds and grizzlies. Present-day Grapes are decidedly of two colours—the black and golden. Shades of these there may be, but the nearer the one to jet and the other to amber, the more the grower and consumer alike are satisfied.

Quality in Grapes, measured by whatever standard it may, must be accompanied by colour. Pale greenish, tinged and streaked with red or purple, berries of Black Hamburgh, fine as they may be individually and in the bunch, satisfy no one. Gros Colman, with a blue nose and a greenish shank end, annoy the grower and disappoint the eater. As for "green" white Grapes (so-called), they are dingy anomalies. Lack of colour is undoubtedly a great defect in Grapes, even beyond appearance, as such Grapes will not keep, and instead of getting sweeter they turn sourer.

It is worse than useless ignoring the fact that nothing gives so bad a character to Grapes as defective colour, and there are more ill-coloured Grapes now than there have been any time during the last fifty years. Why? There are often faults on both sides. More private gentlemen grow Grapes for market now than was ever the case before, and not unnaturally want a maximum of production—it may double the crop that was taken prior to the selling, and the cultivator is therefore impelled to make the most of his means, and, it is to be feared, is sometimes compelled to attempt impossibilities. Market growers crop the Vines from first to last within an inch of their lives, and they use tons of manure where the private grower and seller of fruit uses

hundredweights. The latter ought to know about these things, and not leave the grower to bear all the brunt of a collapse. The good grower of Grapes, who is properly equipped for the work, studies the Vines—brings his knowledge and experience to bear upon them, and the result is the measure of his matured judgment. Thus Grape growing is a question of ways and means—of skill and materials.

I find "muck" and "brains" are the chief factors with the grower of Grapes for market. The first saves watering, and the Vines receive no more water than is sufficient to make the nutrition soluble. Little of this runs away into the drains, the consequence of excessive drenchings of the border. Yet they have sufficient water, and not only is enough as good as a feast, but better. The Vines groan not under their burdens, because as the crop is so is the stamina supplied. The grower knows his Vines—studies them, understands them, and feeds them according to their work. The question of colour is one of nutrition from beginning to end—not of nutrition washed out of the border, but kept in it. Water and nitrogen may put on flesh, but not colour.

Vines require steady supplies of substantial nourishment. Potash, phosphorus, magnesia, and lime are the prime food essentials so far as colour is concerned, utilised by water and nitrogen. Build up the Vines from the start with phosphates, sulphates, chlorides, and nitrates in due proportions, and give no more water than is necessary for health, then colour will come, never by overmuch water. It is assimilated food that puts colour on Grapes. Let the Vines work from "morn to eve" pouring out water, manufacturing chlorophyll all the day long, and building up cells with strongly fortified mineralised walls. Air and sunshine, every leaf its share, will do the rest, and then having fed the Vines wisely, and cropped them judiciously, the best of colour will appear in the fruit.

The most foliage does not imply the best colour. It often means the reverse, as large flabby leaves, long-jointed, large-pithed wood are the precursors of loose bunches and ill finished Grapes. It is solidity in proportion to the weight of Grapes that insures both colour and quality, and firmness is due solely to the nature of the food and conditions of elaboration.

Overcropping results in indifferent finish. Some growers go so far as to make a point of colouring their Grapes by certain methods in ventilation at the time of ripening—good methods, no doubt, but the success that follows is mainly due to something else. Overburdened Vines may be helped in colouring, not by air alone, nor by drowning the roots, but by giving a top-dressing of Thomson's or other advertised fertiliser of proved efficiency, and, of course, it must be washed in for imbibition by the Vines, but to do this does not require an equivalent of 4 inches of rainfall where 1 inch is ample. The dressing often acts very well, the roots move, the laterals respond, and then more colour comes, though it may not be perfect, because, I am sorry to say, that Grapes wrong in colour cannot be so quickly put right. The elements of colour must be provided long before the berries change for ripening. An Apple to colour in the fruit room must be grown in the sun, not in the centre of the tree. Still, the dressing betters a wrong if it does not make it exactly right, besides the food given now is stored and helps the Vines at starting another year. Lightening heavily burdened Vines may do something towards those bunches left finishing better. It is very little, however, if the removals are delayed till the Grapes are advanced to the colouring stage. I have tried it on Gros Guillaume time after time. The effect was a delusion—just a case of the worst coloured bunches being cut off and the others looking better in consequence.

Then there is the matter of temperature. Some persons go so far as to credit dew with putting colour and bloom on fruit. It is the best thing I know to take it off. In an old book I find the moon credited with making grain golden. These oracles are beyond me; but I can get clearer, purer, golden tints into Muscat of Alexandria Grapes in July than under the finest harvest moon yet seen; so what acts on grain has no influence on Grapes. "Cold nights make Sloes blue" is a time-honoured belief, but not mine. Those grown in the shade will not turn blue, but those having sun all the summer will, if cut when changing colour, ripen off the tree. Still, heavily cropped Vines do colour better with a comparatively low night temperature than under a high one, turning almost black as Sloes outdoors in October.

Colour in Grapes, or in every other fruit, depends upon the means taken during growth to secure it. That is a due adjustment of the crop to the vigour of the Vine. Full exposure to light from the beginning of growth to the ripening of the fruit and foliage, due supplies of nourishment in available form right along from commencement to finish, and plenty of air with a comparatively drier atmosphere, appear to be the needful conditions at the ripening stage.

The whole question needs ventilation, for there are far too many Grapes defective in colour that cannot be regarded as overcrops, and it is just such cases that suggest the desirability of an exchange of views. There is the question of manures as affecting colour, some accelerating it and others doing the contrary. Then different varieties may need something variable in their treatment. These are interesting subjects, and could well be treated by experienced cultivators with advantage even to themselves, not to mention the rising generation, thirsting for information on the "queen of fruits," especially in the matter of colouring, for, without perfection therein the produce cannot be fully appreciated.—G. Abbey.

DEATH OF Mr. ALFRED SUTTON.

All who have had the pleasure of meeting Mr. Alfred Sutton must have been impressed by his urbanity, and will deeply regret to hear that he died at his residence, Greenlands, Reading, on Saturday morning last, at the ripe age of seventy-nine years. Mr. Sutton was for fifty years an active member of the firm of Sutton & Sons, but retired from the business, together with his brother, Mr. Martin Hope Sutton, the founder of the firm, who survives him, nine years ago, when the business was entirely made over to their sons, the present partners. He was more particularly interested in the floricultural part of the work, whilst his brother devoted himself principally to the agricultural and seed growing departments.

In his private life he took the deepest interest in all religious movements, especially those established for the benefit of young men. He was one of the founders and chief supporters of the Reading Church of England Y.M.C.A. He was a warm supporter of missionary work at home and abroad, especially the Church Missionary Society. At the present time three sons are working as medical missionaries in Quetta, Bagdad, and South Africa respectively. He built three mission rooms in populous parts of the town, also the coffee house known as the "British Workman." He was a Sunday school teacher and superintendent, and for some years a Churchwarden at St. John's Church. He took a great interest in education, and was a member of the School Board for fifteen years from its formation, when he was elected at the head of the poll. He was a staunch supporter of the Royal Berkshire Hospital, and for many years a member of the Board of Management.

Politically the deceased was a Conservative, but he took no active part in party politics. Mr. Sutton was a J.P. for Reading, and as a mark of respect to his memory, and to note the passing away of one of Reading's oldest and most honoured residents, the bell at the municipal church of St. Lawrence was tolled. A widow and ten children (seven sons and three daughters) survive him.

It can be said of Mr. Alfred Sutton that those who knew him the best esteemed him the most for his gentleness, uprightness, and kindly solicitude for the welfare of all who came within the sphere of his influence. His life has been a lesson of the most wholesome kind that cannot fail to have left its impress for good on the minds of many young men who have had the privilege of working under him during his long and honourable business career. The funeral took place yesterday (Wednesday).

Of the two brothers whose intelligence, energy and uprightness laid the foundations of the great house of Sutton & Sons of Reading, the

younger, Mr. Alfred Sutton, has just passed quietly and happily away. He was not so much before the public as his more active brother, Mr. Martin Hope Sutton ; he preferred the shade rather than the sunshine ; but his wise counsels, his gentle and loving disposition which endeared him to all with whom he came in contact, were of great value in the regulation of so great an establishment as that of the Reading firm. I had the privilege of knowing him for many years, and a man of a more gentle and equable temperament it would be indeed difficult to find. He was ever the same, and his time and counsels were ever at the disposal of those who needed them. He was a man of strong religious convictions and foremost in every philanthropic and religious work until age and infirmity compelled him to resign many of his engagements. I shall always retain a pleasant recollection of my intercourse with him in his own home, and should be sorry to lose the opportunity of testifying to the worth of a truly Christian man, and an honest and upright citizen. There are many, especially young men, to whom he has rendered great and valuable service, and who will ever cherish the most grateful recollections of the loveable man who counselled them as a father, and talked with them as a friend and brother.—D., *Deal*.

NOTES FROM IRELAND.

Our last brief notes from the Dublin district were chiefly concerned with anticipating the effects of the spring—"The spring made dreary by incessant rains," — and the consequent long-deferred work in its unavoidable hurry and rush. Although to balance up at present would be somewhat premature, it is, at least, interesting to note the rather important stage now arrived at, particularly in relation to the difficulties encountered at the start augmented by the abnormally wet winter which left the land in a highly saturated condition.

On the broader question of farming, which I venture to think is, possibly, better done on the whole in this my area of direct observation than in any part of the island, both present and prospective appearance are satisfactory. Late planting of the Potato crop undoubtedly entailed some anxiety respecting the effect that might obtain, but it is pleasant to record that those fears were groundless, and nothing could be finer in their way than the broad plantings to be met with on every side. The growth from planting time was apparently uninterrupted, and the sturdy luxuriant haulm has been for some time gay with blossom. Some acres near at hand of Sutton's Maincrop are really charming, giving the effect in the distance of an enormous Heliotrope bed at its best. Beauty of Bute, by contrast with the floral display made by the former, looks sombre, but the dark hued foliage is a picture of health.

Growers view present prices of earlier varieties now being lifted with something akin to dismay, as against the universal satisfaction felt by consumers who are now able to purchase the esculent tuber at the low rate of 2s. 8d. per cwt., city prices on the last day of July ; even previous to this a glutted market led to heavy cross-channel shipments. Improved varieties, imported seed, well worked land, and an energetic stirring and moulding as growth develops tell their own tale, and nowhere are disadvantages apparent as the result of late planting. On the contrary, where, in rare instances this season, undue haste hurried the seed into ill-prepared soddened land, weak gappy growth led to the conclusion that it was better to re-plough than chance results.

First and second crop meadows were converted into the hunter's provender with some little difficulty, owing to a spell of showery weather ; but the quality has not apparently suffered to any appreciable extent. Those who took advantage of a spell of splendid weather, with practically uninterrupted sunshine during the week ending July 17th, for the making up of hay on old pasture land were fortunate (or wise). From that date to the end of the month rain was more or less the dominant element. Some fine breadths of Wheat are here and there to be seen, and are now rapidly putting on the harvest tint. Turnips and Mangolds have from the start done well, and promise to make an equally good finish. To sum up this phase of culture, our neighbour the farmer may be congratulated on the general aspect—that is, if prices are left out of the question, which, we suppose, it is hardly possible to do ; but where so good a market is found between the city and its garrison on the one hand, and the great hunting centres of "The Wards," "Meaths," and "Kildares" on the other, demand will doubtless pay for supply—and pay well, for our hunting gentlemen know what is good, and, what is more to the point, insist upon having it. *Apropos* of this, the supply of home-grown wheat straw has for some time been exhausted, and compressed bales of foreign growth take its place. Grazing leaves the beast in that happy condition of not having to walk all day seeking what he may devour, for grass is both plentiful and good, particularly in those cases where a dressing of superphosphate was given, which appears to promote the growth of sweet herbage, particularly Clover.

Where farming merges into gardening in the way of vegetables for market (outdoor fruits, with the exception of Strawberries, are sparsely represented), the retentive soil of the Kildare side of County Dublin is admirably adapted for the production of good supplies of greenstuff, such as Brussels Sprouts, Broccoli, and Cabbage ; good samples of the latter, at various seasons, being shipped to Glasgow. Jerusalem Artichokes, also, are looked upon with favour, whilst Scarlet Runners and French Beans are well supplied to meet the demand of our own metropolis ; picking of the latter had commenced ere July was out. Field Peas have been, and are at present, both plentiful and good.

In Lord Annaly's demesne the extensive ranges of glass, chiefly employed in the production of Peaches and Tomatoes, excellent examples of each are to be seen. Of the former it would hardly be possible to find trees more luxuriantly healthy or carrying heavier crops of high-coloured fruit, and the Luttrellstown Peaches have created a name for themselves in the Dublin market, having their corresponding pecuniary value. With that popular production, the Tomato, Mr. Buggins, his Lordship's manager, is equally successful. In a general survey of hardy fruits the most optimistic pen-painter could show here but little *couleur de rose ;* bush fruits, to say the least, having been but thin in quantity and indifferent in quality. The same remarks will probably record the doings of the Apple and Pear tribe this year. A vagary recently noticed was a large wall tree of Louise Bonne showing quite a crop of bloom amongst the thinly dispersed half-swelled fruits.

It is gratifying to notice that among the arrangements for the forthcoming visit of the Duke and Duchess of York to our shores a visit to the Royal Horticultural Society's autumn show on the 19th proximo is contemplated. This will take place in Merrion Square, which from its general adaptability to the purpose is one of several moves in the right direction the Council have made to restore the prestige the premier society (so far as the prefix of "Royal" is concerned) formerly held.—K., *Dublin*.

WATERING WALL TREES.

An insufficient supply of moisture at the roots during critical times is the cause of many failures in fruit growing, especially in the case of trees trained to walls. As soon as the trees begin to suffer in this respect they become subject to the attacks of insects and diseases innumerable, which not only prevent the season's crop from finishing satisfactorily, but also weaken the trees to such an extent as jeopordise their prospect of producing good crops the following year. The present is a critical time, when the cultivator may, by a little extra attention, almost double the value of fruit grown upon walls. Inferior produce is often a drug in the market, but the finest samples will command remunerative prices.

Let us take, for example, Peaches and Nectarines which are beginning their last swelling. If given abundance of moisture at the roots, and a surface mulching of short manure, the fruit will attain a large size, and have good juicy flesh as well as high colour. Without extra moisture, small, dry, and often comparatively flavourless fruit will be the rule ; such can only be sold at rubbish prices, which scarcely pay for picking and sending to market. The same remarks apply to Pears ; fair examples pay, inferior ones do not. The Jersey growers, so long noted for their magnificent Pears, use enormous quantities of water throughout the summer ; to that fact, as well as to their fine climate, must be attributed their success.

To my mind, one of the first requisites for the profitable conduct of commercial gardening is an ample supply of water, with means of distributing it in an economical way. When it has to be carried or carted, the labour involved makes it too expensive for use on a large scale, and there are many instances in which a moderate outlay judiciously made will secure good water in abundance. Many gardens are so situated that streams on high ground might be easily diverted to properly made ponds or tanks, from which the whole garden could be supplied through pipes, no other power than the natural force of gravitation being needed to secure distribution. In others, hydraulic rams would force the water from lower ground into ponds or tanks, and thus supply abundance of tepid water. Rubber hose, with one of the many forms of distributors attached, could then be kept constantly going where needed, the only labour required would be that of occasionally shifting the distributor when a particular part had been thoroughly watered. Driblets are of little use in hot weather.

When abundance of water is given of course liberal feeding must be resorted to. This can be given in several ways—viz., by mulchings of manure, by applications of artificial fertilisers, and liquid manure given after clear water has been applied. When the

conveniences above described are not at command horse or hand watercarts must be brought into use, if fine fruit is expected, entailing many hours of laborious work. Many gardeners know well that this is one of the most difficult problems they have to deal with, yet they are obliged to struggle on attempting to produce good results under adverse circumstances, when a comparatively small outlay would soon repay the first cost.

In commerce this water question is one which receives just attention ; in private gardens it is too often neglected altogether to the great disadvantage of all concerned, especially in these days of rigid economy when gardens are expected to pay their way, which they never will do unless conducted on more intelligent lines. If their owners would grasp and grapple with this matter we should in the future see less waste of force and more satisfactory returns in gardens where the labour allowed is totally inadequate. Let us all, however, bear in mind, and act upon the stern fact, that at the present time wall trees carrying good crops must have water in abundance to produce good results.—H. D.

HARDY FLOWER NOTES.

Full of changes is the garden of hardy flowers. These come not as quickly as those of the kaleidoscope, but are, as it were, dissolving views melting imperceptibly one into another. From the time when the first Snowdrop pierces the winter-bound soil until the last Aster shrivels under the bitter frost-laden winds of the dying year the pageant of beauty moves along before our charmed eyes. Ere the Snowdrop's maidenly band has vanished from sight the brave Crocus comes into view, and before it again has passed away the Daffodils and Tulips draw near—a gallant band. And so it is as Summer dawns, reigns, and yields her sway to Autumn's golden rule.

The procession seems to come with richer and brighter beauty, bewildering in variety, clad in all the colours from the dye-house of Nature's laboratory. These summer flowers come in less formal bands than those of the earlier season. They are more mingled with others, yet look none the less beautiful because of this. The Gypsophila has for its comrade the Orange Lily or the Phlox, and neither suffers from the companionship—nay, rather each one gains, the lightness and grace of the Gypsophila showing well beside the stiffer beauty of the Lily or the rounded flowers of the Phlox, while they have their colouring softened and made more pleasing by the lace-like cloud cast over their glowing petals.

The rounded heads of some of the Alliums emerge from among their escort of Pinks ; Sidalceas, with delicate white or pinkish flowers, have their modest colouring made more pleasing by association with some deep crimson Poppies. The bright red or soft pink blooms of the Everlasting Peas climb up the trellis on the outhouse wall none the less happily because beside them are the bright orange-yellow flowers of that beautiful flower, the Eccremocarpus. And all this beauty, this pageantry, this gay colouring, soft grace, or elegance of form stand within the reach of almost all possessing a garden.

Those of us who care for rare flowers may indulge ourselves by acquiring plants, part of whose interest consists in their exceeding scarcity or in whose cultivation difficulties arise. Those who, from necessity or choice, prefer cheaper flowers or those needing the minimum of care can find among the hardy flowers many which are within their reach, and still as beautiful as those beyond their power. Among these will come the Madonna Lily, worthily so called, the flower of grace and purity, the flower with which is inseparably connected legends and traditions which make it doubly dear.

Even were it not so, and its only attraction its own intrinsic beauty, Lilium candidum would ever find its way into the affections of the lover of flowers, and occupy one of the best niches in his temple of beauty. It is not amiss to speak of it now when its pure flowers have just passed away, and it is time for those who have it not to think of procuring this Virgin Lily. August is, perhaps, the best time for planting, and no one should delay much longer in obtaining the bulbs. The question of where to plant is inseparably connected with that of the blight or disease which at times reduces to despair the hope of the gardener.

It would, perhaps, be rash to say that any precaution in this way would give immunity from an ailment so disappointing. That is too much to hope, as in some seasons there are gardens in which it appears to be impossible to ward it off. It is not, however, an impracticable thing to reduce to some extent the recurrence of the disfiguring blight which prevents the blooms from opening, and makes the beautiful Lily no longer a thing of joy. The facile pen of "D., *Deal*," has on page 71 dealt in a very useful way with the question of where to plant, and one is pleased to find it possible to be in full agreement with a writer of such long experience. This is all the more agreeable, because the frequent advice to plant in deep, heavy loam is not always satisfactory. One is not disposed to be dogmatical on the question—so varied are the peculiarities of gardens—but a sunny situation in light or sandy soil is what I should be disposed to recommend also.

There are some who advise planting in boggy ground, and others who are in favour of keeping the crown of the bulb above the level of the soil. The former I should hesitate to adopt for permanent planting, and the latter is not so satisfactory if regular and annual flowering is desired, as it is sure to be. It is better to keep the crowns at least 2 inches below the surface.

On the question of sun or shade, one may remark that comparison of plants in the same district appears to show positively that plants under the partial shade of trees are attacked in years in which those in full sun escape. Should the disease once appear there is little hope of much pleasure from the flowers that year. Anti-blight has, with some, enabled the flowers to open, even if the foliage had been attacked and destroyed. The absence of the leaves, however, detracts so much from the appearance of the plants that were it not that the application may be of advantage for another season it is hardly worth while to apply it. These remarks may be of service to some beginning the cultivation of this, the purest and among the noblest of all our hardy Lilies.

Among the hardiest of all our tall garden flowers are many of the Aconitums or Monkshoods. Their poisonous nature causes them to be shunned by many, and instances are said to be known of death having been caused by the roots being mistaken for those of esculent plants. This is a danger, perhaps, more apparent than real, and there are other flowers less valuable for garden purposes with equally dangerous properties. The beauty of the Monkshoods is sufficiently evident, and, if kept away from the vegetable garden and no pieces of root left lying about, any mishaps which might arise from their being mistaken for those of the Horseradish will be avoided.

There are many species and varieties, blue, yellow, and white being the prevailing colours. Of the many only one can be noticed at present. This is A. variegatum bicolor, a pretty plant with blue and white flowers, which always looks well when in good condition, and lasts long in bloom. The typical A. variegatum is said to be blue, and there is also a white form, but the one under notice I consider the brightest and most appreciated. The height to which it grows varies with the soil and other conditions, and may be stated generally as from 2 to 6 feet. Large, well grown plants are very effective with their neat leaves and rather loose racemes of pretty helmet-shaped flowers. Like most of the genus to which it belongs, A. v. bicolor is not fastidious as to soil or situation, and gives little trouble from year to year. Another satisfactory plant is the white variety of the black-rooted Mullein, which has the paradoxical name of Verbascum nigrum album.

Unlike many of the Mulleins, it is a true perennial plant, and is, moreover, perfectly hardy and easy to grow. Almost all who see it are pleased with its long spikes densely crowded with white flowers and contrasting purple centres. It is not a rare plant, although often absent from gardens, and even from many hardy plant nurseries. V. n. album is readily increased by division, and increases at a moderately rapid rate. In light soil it grows about 3 feet high, or a little more. The plants named are not such as will appeal to the owner of a large collection. They are cheap flowers, easily grown as a rule, and such as the beginner might well include in his garden.

We have all been beginners once, and in the days when our plants were few and our knowledge still more scant, we welcomed anything which would tell of such flowers as these. If these words bring some into the ranks of hardy plant growers, or help others on their way, they have served their purpose and fulfilled their aim. Those who wish to read of less-known flowers can have their innings again.—S. Arnott.

Fruit and Health.—Each year people grow to appreciate more fully the value of fruit, and eat it, not as a luxury, but as a staple article of food. Fruits are nourishing, refreshing, appetising, and purifying, and consequently have effect upon the health. Yet there are differences. Grapes and Apples are highly nutritious. Grapes usually agree with the most delicate persons, for they are so easily digested. Nothing is easier to digest than a baked Apple, taken either with or without cream. Oranges, Lemons, and Limes are of great value as a means of improving the complexion, and they are especially good if taken before breakfast. Ripe Peaches are easy of digestion and are sustaining. Nothing is better to enrich the blood than Strawberries, which contain a larger percentage of iron than any other fruit. Fruit with firm flesh, like Apples, Cherries, or Plums, should be thoroughly masticated, otherwise it is difficult to digest. The skin of raw fruit should never be eaten. Never swallow Grape stones. Stale fruit and unripe fruit should never be eaten, and very acid fruit should not be taken with farinaceous foods unless the person has vigorous digestion.

PROGRESS IN STREPTOCARPUS.

THE advance in many plants that have come under skilful manipulations of the hybridist is nothing short of remarkable. Notes might be written on the progress of Begonias, Carnations, Chrysanthemums, Pelargoniums, and many others, including the Streptocarpus, to which this article will be confined. The improvement that has been made with this plant is no less pronounced than in the case of either of those that have been named, and it has been effected during a comparatively recent period—indeed, it may be said to have taken place within the past ten years.

An account of the history of the Streptocarpus is given in the "Flower Growers' Guide" (published by Messrs. J. S. Virtue and Co., Ltd.), which we extract, together with some cultural directions which are there given.

"Let us trace briefly the genealogy of such flowers as those figured. About the year 1887 Mr. William Watson, the able assistant curator of the Royal Gardens, Kew, exhibited two new varieties of Streptocarpus before the Floral Committee of the Royal Horticultural Society. They were named S. kewensis (mauve purple with brownish stripes), and S. Watsoni (rosy purple), and justly awarded certificates. How were they obtained? S. Rexi (blue), introduced from South Africa in 1824, was crossed with S. Dunni (rose), Transvaal, 1884. This cross brought S. kewensis, which in turn, crossed with the Cape species S. parviflora (purple, white, and yellow), brought S. Watsoni.

"It may be presumed that even Mr. Watson could scarcely have foreseen that his two little floral children would so soon bring in their train the marvellously diversified and beautiful varieties now so easily obtainable from seed. The progress was brought about in this way:—

"About two years after S. kewensis and S. Watsoni were raised they attracted the attention of Mr. John Heal, one of the expert hybridisers in the establishment of Messrs. J. Veitch and Sons, Chelsea, who saw them planted out round the border of the large succulent house at Kew and flowering very freely. The Kew authorities gave Mr. Heal a few plants to see if he could make any improvement with them, as Kew is not a hybridising establishment on a large scale.

"No doubt the Kew people did well, as time has proved, to let others do their best. The result has exceeded the expectations of everyone who takes an interest in these beautiful flowers. The collection exhibited by the Messrs. Veitch in the Diamond Jubilee year at the show of the Royal Horticultural Society in the Temple Gardens, London, incited expressions of admiration and surprise. Among the exhibits were splendidly floriferous plants of what must in justice be called Veitch's Hybrid Strain, arranged in distinct colours to show how true each colour will be reproduced in seedling plants as the result of careful fertilisation. There were pure whites without any trace of colouring, then white with dark blotches, magentas with rich and distinct shades, violet, purple, rose, pink, and various tints practically indescribable. Three varieties are shown in the woodcut (fig. 20).

"Exhibited at the same time were three other distinct strains which demand attention. The first, known as S. gratus, is very distinct. The flower stems, from 6 to 9 inches high, are very strong and freely produced, some of them bearing from twenty to seventy flowers and buds, which means a continuation of bloom for several months. The flowers are about an inch across, and the colours bright and showy, including terra-cotta and rose shades. This strain, with its several varieties, was obtained by crossing the African species S. Dunni with Veitch's hybrids.

"The second strain which merits special notice was named Mrs. Heal, in commemoration of the late lamented wife of the raiser. Mrs. Heal is in truth a beautiful and distinct Streptocarpus, and no doubt the forerunner of a new section. The flower stalks range from 9 to 15 inches high, and terminate with six to twelve flowers of a rich violet blue shaded with purple, the throat having a yellow band with maroon spots on the lower petal, the flowers being 1½ inch in diameter. It is the result of a cross between S. Wendlandi and one of Veitch's hybrids. The plant is of good habit and floriferous with several leaves, unlike S. Wendlandi, which is remarkable for producing only one huge leaf and very tall spikes of blue flowers.

"The third strain, S. pulchellus, is perfectly distinct from the others. It is light and graceful both in growth and flower. The plant is compact, and the long tubular flowers are borne on erect stems from 12 to 15 inches high, with twelve to twenty on each stem, in the most delicate lavender tints. Where light and graceful flowers are in demand, this strain will supply them. It was obtained by inter-crossing S. Fannini and Veitch's hybrids.

"A new strain was exhibited at a meeting of the Royal Horticultural Society in May, 1897, which received an award of merit. It is a charming variety, called S. achimeneflora from the resemblance of the blooms to some of the small-flowered Achimenes. The colour is soft blue, with clear yellowish eye, and the habit graceful. It was obtained by crossing S. polyantha with Veitch's hybrids.

"Other firms are improving the Streptocarpus, and no one can foresee what the results will be, but already the plants under notice rank among the most useful for the decoration of the conservatory, greenhouse, or drawing-room during the summer months, especially when grown like those exhibited at the Royal Horticultural Society in 1896 by Mr. Beckett, of Aldenham House Gardens, Elstree, each bearing from twenty to thirty stems, with four to six flowers on a stem.

"Not only will varieties of the Streptocarpus be grown in large gardens, but they are equally suitable for the amateur with his small greenhouse, in which the plants may be had in flower from April to October, as fresh stems are produced if the old ones are removed when the flowers fade. Moreover, the plants will be quite safe in the winter in a temperature ranging between 38° and 45°; but they do not require water at that season till the soil gets dry enough to crumble freely when rubbed with the finger; then sufficient ought to be given to pass to the drainage, not a drop being poured on the foliage or in the centre of the plants, but only on the soil. Damp is the enemy of the plants in winter, and if any decaying parts appear they must be promptly removed. Streptocarpus will grow and flower well in cottage windows where they receive plenty of light, as they do not object to a dry atmosphere. They are best kept cool in summer, must never be overpotted, nor must the soil be allowed to become dry when the plants are flowering, while they enjoy shade from the sun

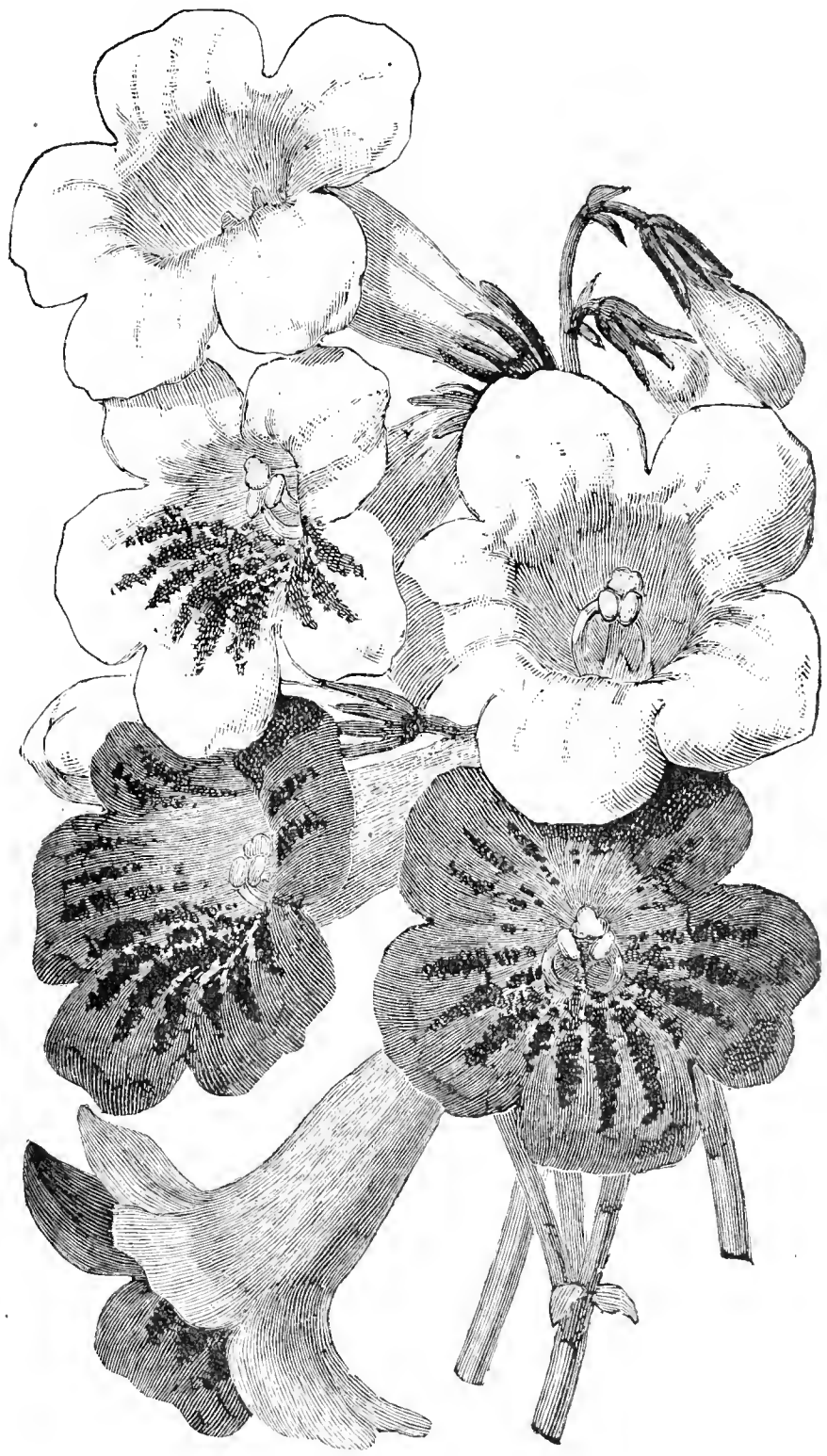

FIG. 20.—HYBRID STREPTOCARPUS.

as its rays become powerful, these having a tendency to scorch the leaves, especially if the plants are dry at the roots. With proper care they will flower well for three or four years, each year becoming stronger under good culture, throwing up flower stems continuously.

"As before stated, any desired number of plants may be raised from seed, from which new varieties will be forthcoming. Streptocarpus seed is very fine and requires special attention in sowing. Drain the pots well, and three parts fill with a mixture of turfy loam, leaf mould, and sand, which make moderately firm. Then add half as much of the mixture finely sifted and make it perfectly smooth. If in the least dry, give a good watering through a fine-rosed can, and three or four hours afterwards scatter the seeds evenly over the surface and press them gently down, not covering with soil. Lay a square of glass over the pot, tilt it up a little, and shade during the day with thick paper to keep the light and sun from the seed. Place the pot in a temperature about 65°, away from draughts, and examine it carefully every morning and evening to see that the soil does not get dry, because there the secret rests in insuring growth; if the soil and seeds are allowed to become dry once the endeavour to raise plants will prove a failure.

"The seedlings grow very slowly at first. When large enough prick them off singly and give them a little warmth. Plants raised from seeds sown in December, January, or February will give several flowers the same year, commencing from July to September. The following spring the plants become stronger and flower freely. Repot in February or March in a mixture of about two-thirds turfy loam, one-third leaf mould or peat, with silver sand added. The Streptocarpus can be increased by division, also by cutting the leaves like the Gloxinia.

"Few, if any, flowers during recent years have made the same progress in public favour in so short a time as have those under notice, and it may be expected that they have a great future before them."

HARMFUL AND HARMLESS GARDEN MOTHS—6.

MANY of the moths that appear about gardens have been bred upon the hedges that enclose them, or that are in the vicinity, and especially upon those of Hawthorn or White Thorn, which of all deciduous shrubs is still most popular for this purpose. Privet, however, is a successful rival, and it has the advantage of being less infested with caterpillars than is the Hawthorn; also, it remains green through the average British winter. We have to thank the Flemings for the re-introduction to our island of quick or living hedges, since those formed by Saxons and Normans to protect gardens or fields were made of dry boughs stuck in the earth. The Romans, it is true, knew how to plant green hedges, but this art, like others, was forgotten after they ceased to govern Britain.

Probably one reason why Hawthorn became a favourite for hedges was its readiness in producing side shoots; certainly as a guard it cannot rival the denser Yew and the spiny Holly. We have heard a remark made to the disadvantage of Hawthorn, that this shrub is the customary food of many caterpillars, therefore they might travel from it to fruit trees, Roses, or other garden plants near. But, on the other side, it may be said that Hawthorn hedges, being attractive, draw insects to them which would, if they were absent, interfere with the produce of our gardens and orchards. And this prologue brings us to a couple of moths, akin to the tiger race, that have an interesting history, unfortunately rather tangled by some confusion of both the English and Latin names, which has made it difficult at times to know which of the species was meant by describers. Then the question of correctly determining a shade of colour has to do with it, for at a hasty glance gold and a golden brown may be mistaken in a moth's tail.

Now, about July we are likely to see, resting on a tree or wall, perhaps crawling along a twig, a middle-sized moth, garbed in white with a body somewhat stout, and darker at the tail, the antennæ feathered. This might be the brown-tail, but most probably it will be the gold-tail, or Liparis auriflua, an insect not harmful except as a feeder upon Hawthorn while a caterpillar. This I have had brought me by gardeners as a curiosity; it is usually full-grown in June, and is certainly handsome. It is both hairy and tubercled, having also two cup-shaped marks upon the back, from which some supposed the creature could eject an acrid fluid; this appears to be a mistake. Observations tend to prove that the irritant to the skins of some persons is the hair of the caterpillar, thrown off at moulting, also in small portions at other times; the same effect is noticed in the kindred species. The colours are a conspicuous scarlet and white upon a ground colour of black. Hatched during autumn, the young gold-tail feeds a little then, but soon spins a small cocoon, in which it sleeps solitary until the buds open in spring. The species is distributed all over Britain, more abundant some years than others; the caterpillar is, for obvious reasons, unattractive to birds.

The brown-tail (Liparis chrysorrhæa), which has often had, by mistake, the name of the preceding given to it, is, now at least, a local species with us, though in a small range of ground it may be very plentiful. Its distinction is chiefly, as above stated, in the colour of the tail; also, this moth is inclined to be, I think, a trifle larger than its relative. Nor is the caterpillar notably different, even to the eye of an entomologist. In habit, however, they do not resemble each other, for all through their life the brown-tail caterpillars are sociable, as parties of various numbers construct each a common chamber of silk, into which they retire at night or during bad weather. When winter comes this abode is strengthened against the cold, and the entrance closed up till spring by the caterpillars. The early summer is their season for eating most voraciously. I have no doubt that the insect is still injurious to fruit trees in France, Germany, and other parts of the Continent, and was formerly so in Britain, occasionally, at least; one of its special years is recorded—viz, 1782, a pamphlet describing the mischief done then being published by Mr. Curtis. Great alarm was caused throughout the country that summer owing to the sudden profusion of brown-tail caterpillars, and the attacks they made upon many shrubs and trees, fruit trees suffering greatly, as in Middlesex and Surrey.

Some attempts at their destruction were partially successful; anyhow, the species was not particularly noticeable the next or following years. Fortunately, it is the victim of an ichneumon fly, which places its eggs upon the caterpillars in spite of their hairs. It may be added here that this moth, and the gold-tail too, cover their eggs with a layer of down, though they are laid in July, a circumstance certainly curious, about which there has been a lively discussion, on which I need not enter. At present, these caterpillars are seldom found in Britain except on hedges of Hawthorn and Sloe; but it is advisable for fruit growers to watch them where they appear.

I may be pardoned in introducing a little bit of local history which is *apropos* to my subject. On a winter's day, some fifteen years ago, walking on the old Dover Road near Gravesend, my attention was called to the unusual aspect of a hedge. Upon examination I discovered it was thickly dotted over with the nests of the brown-tail moth. Further researches showed many more on other hedges between that town and the village of Chalk. The following spring and summer, as the caterpillars were plentiful, and much fruit is grown in the district, I called the attention of farmers and gardeners to a possible danger; but no steps were taken. Probably the caterpillars were not very likely to migrate; the moths, however, might easily have flown over to the adjacent orchards and laid their batches of eggs.

A large number of caterpillars fed up the next summer, producing a host of moths and a big brood of autumn caterpillars, so that in the following winter the nests were still more plentiful. Upon one smallish shrub I reckoned thirty nests, which, at the moderate average of fifty caterpillars to a nest, would make 1500 there waiting for action next year. And later the hedges did suffer severely. The omnivorous character of the species, if need be, was shown upon a mixed hedge where every shrub was stripped, even the Elder, not a favourite with caterpillars, being defoliated. Yet still the caterpillars kept to the hedges and some scattered Elm trees; but it seemed only a question of time as to their reaching the fruit trees, unless there was some check. Happily Nature did what man left unattempted—a rainy winter, with stormy winds, killed a large proportion, assisted perhaps by parasitic foes, and another summer but few caterpillars were abroad. Afterwards the insects, so far as I know, have vanished from the locality altogether.

The satin moth (Liparis Salicis) might be mistaken for one of the preceding; it is all white too, but has a silvery gloss upon the wings. Its presence in gardens is accounted for by the occurrence of the caterpillars upon different species of Poplar; they are conspicuous by their spots of white and red, slightly hairy too, but are seldom numerous enough to disfigure trees or shrubs. Also I have seen, even in a London garden, the pretty caterpillar called the "hop-dog" by some authors, though I never heard that name applied to it in the Kentish Hop districts, and from observation can testify it does not often feed upon that valuable plant, its diet being somewhat miscellaneous. Certainly a handsome caterpillar, the green ground colour marked with slashes of deep black, and adorned by pencils or "tussocks" of yellow hairs. In habit the grey moth (Orgyia pudibunda) is somewhat retired, and flies little even at night.

Quite a contrast is its lively small relative, O. antiqua, also called the vapourer moth from its peculiar undulating flight. One that may be seen even in the busy streets of a big city; the caterpillar

making itself at home in any garden, large or small. Sometimes it causes annoyance by feeding upon standard Roses, but it is a species easy to find and remove. Mr. Wood has pointed out that the vapourer might be a very troublesome insect to us if the fat-bodied wingless female were not often eaten by birds, and he thinks they also peck off the eggs placed upon the cocoons, which do not hatch till spring. Both moths and caterpillars are about during June, July, and August.—ENTOMOLOGIST.

CHARACTER SKETCHES.

BUSY MEN.

HE at the helm, ever ready to take advantage of all side winds to bring our craft nearer to the port of perfection, gives us under the above heading two studies in life—a gardener's life, and neither of them understudies either. Prompted by his kindly appreciative remarks, not less by sundry wholesome correctives administered at divers times by "hand," I venture upon the endeavour to express some thoughts he has piped up. So diverse are these studies that at first sight it may appear as if the lessons they convey amount to what may be termed negative and positive teaching. Yet upon reflection the dual subject may resolve itself, as I think it does, into one question; a question which has previously been placed before our young thinkers and workers—viz., adaptability to circumstances. In no other way can I see the course open to approach and free of some rocks that we would wish our young craftsmen to steer clear of.

For distinctive purposes we may style the writer of the first letter Mr. A., the second Mr. B, both exceedingly busy men as per statement of details, and apparently having but one kindred feeling—viz, the desire to abandon the implements of play and of labour for the pen. As they meet on common ground in these pages by the employment of their pens in the good cause, we may take it that neither the stern realities of labour as so graphically depicted on the one hand, nor the comparative frivolities (comparative only) of life on the other, can veil the regrets they equally feel at the temporary absorption of their powers; *ergo*, they are both gardeners—gardeners in the fullest sense of the word. How can we reconcile the diverse employment of that great energy undoubtedly displayed? How extract the moral from each phase of life and blend the apparently opposing elements into a stimulative mixture for "our boys?"

It would be needless to ask any young gardener worthy of the name what his chief end and aim of life is, and there is little doubt that he has models in his mind's eye of great men who have gone or contemporaneous men of mark. Such models, of course, include neither demon bowlers nor eminent batters, for our goal does not lay in their direction. The type as represented by Mr. B., and of whom one ventures to think from data afforded by his letter he is an example as perfect as it is possible to find, needs but brief analytical comment. For such men there is, and always will be, ample room in the world as long as that mechanical force is permeated to its lowest strata by the higher intelligence clearly presented in this case.

Possibly some young readers will jump to the conclusion that the labours as defined are mere drudgery, but a little observation of similar cases they may meet with will show the reverse. Nine out of ten, it will be found, point with pride to the hundreds or thousands of plants they have potted, planted, or propagated, and anticipate with pleasure the results of sound workmanship. We take little heed of anything in the shape of a grumble, should such be forthcoming, that they have no time for recreation whether as essay writers or what not. The grumble is a privilege few care to be deprived of, and any commiseration shown by sympathetic friends will at once prove itself to be superfluous. This, at a rough estimate, is the case with nine out of ten. Of the tenth, it will be found that labour has been unsweetened by those compensating influences, hence it is regarded as pure drudgery by one who has mistaken his vocation in life.

A nobleman's gardener with whom I was well acquainted provides a character sketch similar perhaps to that suggested by Mr. A's letter, illustrating, as it may appear to do (appearances are so often deceptive) the lighter side of life. Probably our boys will think it much the nicer type—the pleasantest kind of a gardener's life. I do not think my friend thought so, but tact prompted him to cheerfully acquiesce with the young heir's wishes that he and his young men should take an active part both in a cricket and football club he had organised among the employés on the estate. And, really, these young athletes when discarding the blue apron and donning the monogram-embroidered jerseys were with their chief a credit to the team. They played heartily when they played and worked as heartily when they worked, owing, I think, to my friend's common sense and adaptability to a variety of circumstances which in some shape or form, though seldom similar to this, perhaps, enter into most men's lives.

One thing remains to be impressed—viz., that he, the head gardener, was eminently qualified to hold his highly responsible position as such, for, with the peeling off of that companionable garment, the jersey, he at once put on his firm and dignified demeanour, which entailed the unqualified respect of his subordinates. Other types crop up in memory which would needlessly prolong this paper, for though, as character sketches, they are, at least, interesting, and capable of being made profitable to boot, the youngest observer is privileged to extract the morals from them himself; and I venture to add that the best method of doing so is to note all the good points of others for personal benefit, and to endeavour to gain that great gift of seeing ourselves as others see us. I am sure our young students will have ample hard work, as depicted in Mr. B.'s letter; they may, or may not, be busy in the manner exemplified in Mr. A.'s, but they may turn all to advantage by studying all types, for "The proper study of mankind is man."—AN OLD BOY.

ANTHRACNOSE OF MELONS.

I HAVE read "The Young Gardeners' Domain" columns of the *Journal of Horticulture* with considerable interest, and especially the articles on Melons, noting, in the issue of July 29th, page 106, reference to "enemies," "disease," and "anthracnose" by "Elveden," who couples my name with the latter disease, and a request for information in respect of a remedy.

Allow me to compliment "Elveden" on his singularly accurate and carefully recorded diagnosis of the malady known as anthracnose—a word with a meaning, no doubt, on the continent of Europe and in America, but I cannot make anything of it in plain English but "rot." It does not appear to affect Melons in the United States, though the cultivators in some parts only know "bitter rot," "ripe rot," or "Apple rot" too well, as it is, according to Prof. H. Garman, "no uncommon thing for three-fourths of all the fruit on a tree to be rendered worthless by its attacks." I mention this, as "Elveden" simply alludes to the disease as anthracnose, and the fungus causing it as Gloeosporium. What species? Melons first went wrong with me in 1873, Colston Basset being the variety, and Moreton Hall, a red-fleshed, would not take on the fungus.

The fungus causing "bitter rot" in Melons will spread from them on fruit-room shelves to either Pears or Apples that may be in the same structure, but only soft-fleshed varieties of these are affected, the fruits rapidly becoming brown, and little black pustules appear on the skin. These are not often seen on Melons, for the fruits ferment and swarm with "bacteria" (Bacterium termo), thus making end of the fungus, but when any pustules come on the skins of Melons they are identical with those found on the Apples.

On Melons the disease may commence from a spot almost invariably on the under side of the fruit, and not far from the apex. It spreads somewhat after the manner of canker, and is more or less arrested by quicklime. Still, as the mycelium acts internally, the fruit sooner or later rots inside, and the fungus alone is responsible for the nauseous flavour of the fruit. In such case we may get the small black pustules, or fruiting bodies of Gloeosporium fructigenum. These are produced in a receptacle, and bear the spores on threads springing from the aggregated cells. They are not resting spores, but the early form of some other fungus.

The Melon affected may give a salmon-coloured spot; then we have fruit-spot fungus (Gloeosporium laeticolor), common enough on Grapes, Peaches, and Figs, and which pushes its minute spores from the pustules at the tips of threads, which appear like tendrils. These minute spores are oval, but soon become round in a rather dry atmosphere, and may live over the winter. That is the only tangible explanation of the disease being carried over from year to year on Vines or anything else, and washing the rods in winter with a solution of sulphate of iron is a preventive.

Melons are at times so grown as to favour the development of the fungus, for it may affect them one year, likewise Apples and Pears, and not appear again for years. As the spores survive in a Melon house it follows that thorough cleanliness is a prime factor in banishing the enemy. The next thing is not to allow water to remain on the fruit for any length of time. Then, the atmosphere being buoyant, I do not consider there will be any anthracnose. It is damp and a somewhat low temperature that gives the fungus its chance.

As a preventive of attack I have found dusting the plants with a powder formed of equal parts of best chalk lime, air slaked, and flowers of sulphur after the Melons are half swelled, the best. Before they are half to three-quarters swelled the fungus does not appear on them, and as spider comes about the same time the fumes given off by the sulphur act well against it.

As regards remedy, when the fruits are attacked there can be none, as the mycelium of the fungus strikes too deep for anything to reach it. What little flesh remains sound after an attack is the most enduring in the taste of anything I know of in fruits. Burn infested fruits, and practise thorough cleanliness, with high-class culture. If these jottings be of any use to "Elveden," the labour will not have been in vain.—G. ABBEY.

Stockport Autumn Show.

Five dozen classes find a place in the schedule of Stockport and District Chrysanthemum Society's tenth annual Show, which is to be held in the Volunteer Armoury, Stockport, on November 19th and 20th. Good prizes are offered in many of the classes, including a silver cup, in addition to the first prize for a group of Chrysanthemums, and another one for twenty-four cut blooms. Each cup has to be won twice before becoming the absolute property of an exhibitor. Besides Chrysanthemums, fruits and vegetables find a place, as well as a section that is confined to cottagers. The Hon. Secretary is Mr. R. Hollister, 29, Little Underbank, Stockport.

Wolverhampton Chrysanthemum Show.

We have received the schedule of the exhibition which is to open on November 3rd. It is a voluminous affair, and time and patience seem to be needed for finding the classes, which are inserted here and there among advertisements of bread, boots, bedsteads, blankets, cartridges, and other requisites of Chrysanthemum growers. We observe that £4 are provided in each of two classes for twenty-four incurved and twenty-four Japanese blooms, three other good prizes following in each. This provision should bring good competition. The same amounts are offered for groups of Chrysanthemums, which are to be judged by points from ten as a maximum for Japanese, eight for incurved, eight for Anemones, six for variety, six for dwarfness, and ten for general effect. This decision of the Committee is introduced by a little homily or explanatory essay. We should have thought it clear enough without, as affording guidance for exhibitors and judges of a commendably definite character.

Paris Chrysanthemum Committee.

Four numbers of the Journal of this Committee have now been issued. No. 3, although published early in the year, has, with No. 4, only recently come to hand, and a brief mention of its contents may be interesting. It contains a list of all the classes and prizewinners at the show in November last, together with certificates awarded at the various meetings of the Committee on September 23rd, October 22nd, November 12th and 17th. A report by Mr. Fatzer on new varieties exhibited at the show, a report on Chrysanthemums and other ornamental plants at the same show, a report by Mr. Nonen on Mr. Calvat's collection at Grenoble, a report by Mr. Rosette on Mr. de Reydellet's collection at Valence, and concludes with a list of members of the Committee, some seventy-three in all. Part 4 contains the rules and regulations, and also the schedule for the show to be held in the Tuileries Gardens next November; an article on the work of the Committee during the year 1896, written by M. Lemaire; an article on "Progress in the Cultivation of Chrysanthemums," by Mr. Yvon, and other matter.

I notice that a certificate has been awarded to a sport from Viviand Morel, described as of a pale yellow colour tinted old rose. The name given to this sport is J. B. Yvon, but judging only from the verbal description there would seem to be some resemblance to the well-known English sport from the same parent, Charles Davis.—C. H. P.

FRUIT SHIPMENTS FROM COLORADO.

I have more than once during the past few years furnished your paper with horticultural items from Colorado. It will interest your readers to know that the fruit crop of all kinds this year is estimated by the Secretary of the State Board of Horticulture at over one million pounds (£1,000,000) sterling, considerably more than half of which money will be realised from markets outside the State. This is not a bad showing for a State which is usually regarded by people at a distance as producing little else but gold and silver, and where so recently as 1884 fruit growing was locally regarded very much in the light of a questionable and somewhat quixotic experiment. Some years ago Colorado commenced shipping Potatoes, on account of their superior quality, to populous centres over 1000 miles distant. Her next horticultural article of export, also on account of its superior quality, was Celery, which was sent in considerable quantities—*i.e.*, in car load lots, to such distant points as Galveston, New Orleans, Kansas City, Pittsburg, Chicago, Detroit, and other destinations.

In April last four car loads, representing over 40 tons, of Ben Davis Apples, grown in a 90 acre orchard within a few miles of Denver, and kept in cool storage, were shipped to San Francisco, on account of their quality. Practical experience shows that Colorado grown Apples, owing to altitude and climate, survive cold storage better than those grown under more tropical conditions.

During the last dozen years at least 100,000 acres of orchards have been planted in Colorado, and this year sees not only the "bearing" acreage much increased, but an abnormally heavy crop, particularly of Peaches, simultaneously with partial Peach crops in the Eastern States of Delaware and Maryland, and also in Michigan. The fruit growers of different sections of Colorado are organised into effective associations, have arranged for agents in Chicago and other eastern cities, and the railroads are co-operating with favourable rates to get the fruit to distant markets.

Mesa County, on the Pacific slope of Colorado, has 40,000 acres of orchards, ranging in size from 10 acres to 160 acres, and upwards, of which 12,000 acres are bearing. It is expected that from the vicinity of Grand Junction alone there will be shipped this season 600 cars of Peaches, 50 cars of Pears, and a large quantity of Prunes, Plums, Apples, Grapes, and Apricots. When your readers remember that the American railroad car is twice the size of the English railroad car, some idea will be gained of the extent of the fruit shipments from this one locality. It is estimated that the fruit growers of Mesa County alone will this year net about £80,000, after payment of railroad freight, commissions, and other incidental charges.

Delta County, also on the Pacific slope, has 2000 acres of bearing trees, and will ship a proportionate quantity of Peaches, Pears, and other kinds. This county is sending Peaches to California on account of their superior quality. Montrose County, also on the Pacific slope, will equal the production of Delta County. The above three counties will this season produce about 3000 cars of fruit, much of which will be shipped as far east as New York, Boston, Philadelphia, Baltimore, and intermediate cities. On the Atlantic slope of Colorado, Fremont County takes the lead as a fruit producer, excluding Peaches, having 5000 acres in fruit, mostly surrounding Cañon City. This county alone will this year ship to other points 25,000 barrels of Apples, and for six weeks recently shipped 1000 crates of Strawberries per day. Boulder, Arapahoe, Larimer, Otero, and other counties on the Atlantic slope of Colorado also have large Apple orchards, and it is estimated that the Apple crop of the whole State this year will reach 300,000 barrels. There are a number of Englishmen among the horticulturists of Colorado.—Thomas Tonge.

CARNATIONS AT BOWDEN HILL.

The season, judging from reports which have appeared of late, and from personal observations, would seem to have been peculiarly favourable to border Carnations, for almost everywhere they have been abundant both from seeds, cuttings, and layers. No doubt the mildness of the winter contributed somewhat to this wealth, for casualties, which in some winters are so numerous, were extremely few in the last, and diseases are much less rife than usual.

Although I have seen Carnations doing well in many gardens this season, I have found none to equal those now almost over in Mr. Harris' garden at Bowden Hill House, Chippenham, the plants here being extremely vigorous, free flowering, and quite exempt from spot. Some 3000 plants occupy the borders in the kitchen garden, in many varieties, all grown from layers or cuttings, and the quality of the individual blooms and the collective display is creditable in the highest degree to Mr. Penton, Mr. Harris' able gardener.

There are 200 each of the old Crimson Clove and Germania, which must have made a good show in themselves, the former producing as many as fifty to sixty blooms, and the latter thirty flowers, on a plant. Maggie Laurie and Gloire de Nancy have been almost equal to those already named. Mr. Penton has found in Pasha a rival to the well known favourite Mrs. Reynolds Hole. Its colour is brighter, and the pods are exempt from the failing so common to many otherwise good Carnations—bursting. The Pasha must become a favourite, as Mrs. R. Hole has been for so long. Grandiflora is another very beautiful one, white with bright pink narrow stripes. Rose Celestial is a very bright flower; and Napoleon III. is a deep red. Duchess of Orleans, a slightly paler flower than Germania, possesses a delicate scent which does not belong to many yellow forms.

A few among other good varieties include Sir H. Calcraft, Mrs. R. Sydenham, Queen of the Bedders, G. H. Sage, The Countess, Jersey Maid, Ketton Rose, Alice Ayres, Agnes Chambers, Dr. Parker, Montague, Lord Byron, and Niphetos. In a large collection there are sure to be many that do not come up to the standard of any individual grower, and the process of weeding out such, and the introduction of newer ones take place annually. Only the best are retained at Bowden Hill even from among named varieties, than which no others are grown.

From seed, however, it is an easy matter to get a good selection, and a great wealth of variety is obtainable from seedsmen who make Carnations a speciality; and where house decoration is carried out on a large scale, the single varieties cut with long spikes are sometimes appreciated as much as double blooms, especially for tall vases. Very effective arrangements may be made from single flowers, and the seedling plants have the merit of producing material for cutting in quantity. From seed they are not much trouble, because they may be finally planted direct from the seed boxes, and when established early they are very hardy, more so, in fact, than layered plants. Mr. Penton finds a mulching of short grass from the lawn mower a good preservative of moisture about his plants, and it appears to suit Carnations splendidly.

In addition to the border plants, a goodly number (500) are grown in pots, to precede the outdoor stock, including 150 Uriah Pike. Beside these, 200 of the winter flowering section are cultivated in 48-sized pots, included among them being such as Miss Joliffe, Mdlle. Thérèse Franco, Mrs. L. de Rothschild, Mrs. Moore, Madame Carl, and Winter Cheer. From these remarks it will be observed that Carnations are a speciality at Bowden Hill, though other features, including Orchids, are by no means neglected, but very much in evidence; of these reference must be deferred until some future date.—W. S., *Wilts.*

Notes & Gleanings

EVENTS OF THE WEEK.—The great event of the forthcoming week is the Royal Commemorative Shrewsbury Floral Fête, which will open on Wednesday next. Magnificent as these exhibitions always are, it is anticipated that the one of 1897 will eclipse all others, as the executive has made extraordinary efforts to have something entirely out of the ordinary for the deputation from the Royal Horticultural Society to see. This deputation will, we believe, consist of Sir Trevor Lawrence, Bart., with Messrs. H. J. Veitch, T. Statter, S. Courtauld, P. Crowley, J. Douglas, H. Selfe Leonard, W. Crump, J. Smith, and the Rev. W. Wilks. On the same day as Shrewsbury there is to be a Jubilee fête at Boscombe, Bournemouth, which also promises to be good; but it is regretable that the dates are in conflict.

—— WEATHER IN LONDON.—The three days ending Saturday, August 7th, were intensely hot and most people found it impossible to keep cool. The temperature on two occasions reached upwards of 80° in the shade, the highest being 87° on Thursday last. Sunday was a thoroughly wet day, the rain coming down heavily almost throughout the day. As a result it was much cooler and pleasanter. Monday also was fairly cool, but Tuesday was again intensely hot, while on Wednesday it was dull and warm.

—— THE FORTHCOMING SHREWSBURY SHOW.—I notice by advt. in the Journal that the annual Show takes place on the 18th and 19th insts. Last year I had the pleasure of visiting the Show. Although I had to walk about twenty miles in the dusty roads I did not begrudge the day's outing. What struck me as a great drawback was the dusty state of the atmosphere in the principal tent where the dinner tables were laid out, and the coating of dust everything was carrying, and the fruit spoiled. If fine weather occurs again, as everyone may hope, could not the ground be well watered early without soddening to avoid such a nuisance?—J. HIAM, *Astwood Bank.*

—— THE HARBORNE GOOSEBERRY GROWERS' SOCIETY.—The eighty-third annual exhibition of Gooseberries was held on Saturday last. The entries were larger in number, but the size and quality of the berries were, owing to the dryness of the season, hardly up to the average of recent years. The premier prize was taken by Mr. T. Field with a "Leveller," weighing 20 dwt. 17 grains. Mr. E. Withers took second prize with "Ringer," 19 dwt. 15 grains; and Mr. W. Astley secured the maiden exhibitors' prize with "Leveller," 14 dwt. 6 grains. The class prizes were awarded as follows:—Twin berries: Mr. Field, "Ringer," 32 dwt.; red berries, Mr. E. Withers, "Bobby," 19 dwt. 11 grains; yellow berries, Mr. T. Field, "Leveller," 20 dwt.; green berries, Mr. H. Westwood, "Stockwell," 17 dwt. 8 grains; white berries, Mr. T. Field, "Antagonist," 19 dwt. 1 grain; six berries, Mr. T. Field, "Leveller," 112 dwt.; three berries, Mr. E. Withers, 53 dwt. 10 grains; two berries, Mr. T. Field, 35 dwt.; a consolation prize for the best beaten berry in the premier competition, Mr. T. Field, "Leveller," 19 dwt. 13 grains.

—— THE PLUM CROP.—Reports generally are not favourable with regard to the Plum crops, there being a universal expression of regret at the shortness of the supply forthcoming, both from fruiterers and growers. The spring frosts, no doubt, account to a large extent for this loss, and probably, too, the tropical nature of last summer, and the great depth to which the drought penetrated brought about debility and over-ripeness in the wood. The positions most generally assigned to garden trees is on the east and west aspect furnished by the walls, and in these gardens it is noteworthy that trees on the west side are bearing more freely generally than on the opposite aspect. This points to the influence of sunshine acting on frosted flowers in the early morning on the east, those on west walls being screened somewhat, and probably until the frost had lifted. Gages are very scarce, Kirke's, Jefferson's, Washington, and Coe's Golden Drop vary according to aspect, but not in any case are they plentiful. Victoria and Pond's Seedling on the west are the only trees bearing full crops, the same varieties on the other side of the garden are almost destitute, quite an unusual occurrence with these free-bearing varieties. Even Early Rivers gave a scanty return. The Plum crop is lighter than it has been for several seasons past in this neighbourhood. —W. S., *Wilts.*

—— EDUCATION IN GARDENING.—Mr. John Ettle, F.R.H.S., of the Agricultural Department, University College, Nottingham, and Instructor in Horticulture to the Notts C.C., has been appointed Staff Instructor in Horticulture to the Somerset County Education Committee.

—— GARDENING APPOINTMENTS.—Mr. H. Morse, late plant foreman at Trentham Gardens, has been appointed head gardener to Sir Cecil Miles, Bart., Leigh Court, near Bristol. Mr. G. H. Sage, head gardener at Ham House, Richmond, has gone in a similar capacity to Bayham Abbey, the seat of Viscount Lamberhurst.

—— MR. JAMES DOUGLAS.—After thirty-four years' service in the Whitbourn family, Mr. James Douglas retires in September in order that he may give the whole of his attention to his growing florist's business at Edenside, Bookham. Mr. Douglas has made greater progress in his ancient and honourable vocation than have most men. This is attributable to his good judgment and quiet, yet constant perseverance. When he first went to Loxford Hall as a very young man it was little better than a single-handed place with, we think, one greenhouse. He did not grumble, but worked, and his zeal was catching, Mr. Whitbourn being steadily, but surely, drawn into the vortex of gardening. He became an ardent florist and thorough horticulturist. His gardener could then have what houses, men, and materials he wished, and of these he made good use. When a removal was made to Great Gearies, a good garden had to be provided and equipped, this garden affording the utmost pleasure to its owner as long as he lived. He left Mr. Douglas secure in his position, also the requisite means for conducting his work as usual during the life of Mrs. Whitbourn. As this lady can no longer traverse the garden it has in a measure lost its charm to the manager, and it has been mutually arranged that he shall in future devote the whole of his attention to his own flowers, which, however, seem to become somebody else's as fast as they can be raised. Mr. Douglas is as active as ever he was; indeed, few men can get through more work, literary and otherwise, in a quiet way than he can, and his many friends will wish for him and his real helpmeet long and useful careers in their pleasant home at Edenside.

—— LADYBIRDS AND FRUIT PESTS.—Valuable information upon this subject is given by Mr. C. R. Marlatt in the "Year-book of the U.S. Department of Agriculture," in an article describing the various methods employed to combat the ravages of injurious insects in California, where the possibility of control of insects by introducing and fostering their natural enemies has been thoroughly tested. The very notable instance of the entire eradication of the white scale insect by the introduction from Australia of its ladybird enemy, Vedalia cardinalis, demonstrated the possibilities in this direction in the most striking way. This one experiment saved the State its Citrus industry, and gave the greatest confidence in many quarters in this means of controlling insects, as well as incited the later action looking to the introduction of beneficial insects on a much larger scale. It led the State of California, in 1891, to grant 5000 dols. "for the purpose of sending an expert to Australia, New Zealand, and adjacent counties to collect and import into this State parasitic and predaceous insects." Mr. Albert Koebele, who had previously been instrumental in introducing Vedalia cardinalis, was selected for the work. His chief object was to obtain predaceous insects which might exterminate the black scale, the red scale, and the San José scale. Mr. Koebele's mission lasted upwards of a year, and during this time he imported into California probably 60,000 specimens, representing very many species, chiefly of ladybirds. Five or six of these species took hold well from the start, and two or three of them are still represented abundantly in the orchards of California, the others having practically disappeared. The important ones remaining include a very efficient predatory enemy of the black scale in the little Rhizobius ventralis, and two much smaller species, R. debilis and R. toowoombæ, which attack the black scale, and also the red scale and San José scale to a less extent. Rhizobius ventralis was easily colonised, and during the last three years has been distributed in enormous numbers to different parts of the State, 300,000 or 400,000 having been colonised in Southern California alone. This beetle is by far the most useful of the recent importations, and has already done much good; in several instances it has effected the entire eradication of the black scale in badly infested orchards. The disappearance of the scale may in some cases be due to other natural causes, but there seems to be no doubt that the chief credit belongs to the ladybirds. Once the ladybirds have established themselves in sufficient numbers, it seems best not to spray or fumigate the trees, as these treatments are very prejudicial to the multiplication of this beneficial beetle.—("Nature.")

—— Abbey Park Show, Leicester.—An interesting ceremony took place in connection with the above last week, when Mr. Alfred Outram, F.R.H.S., presented to Mrs. J. Burn, the wife of the much respected curator, a valuable gold watch and chain, in appreciation of her great attention and kindness to horticulturists for many years. The amount was subscribed for by the judges, exhibitors, and other horticultural friends, and came as a most agreeable surprise to the recipent.

—— Hemp Cultivation in Bologna.—One of the most important agricultural products of the provinces of Bologna and Ferrara is Hemp (Cannabis sativa). Bologna Hemp is generally manufactured into yarns and canvas. The Ferrara quality is principally used for rope making. The former is a finer fibre than the latter, but not so strong; they are both, however, held in high esteem in textile centres abroad, according to the United States Consular Agent at Bologna, chiefly in Germany, France, and Spain. The cultivation of Hemp has greatly developed in Bologna and Ferrara owing to the favourable conditions of the climate and soil, which are not easily found in other countries. Hemp may be cultivated between the Equator and 60° latitude Chemically the land must be siliceous, argillaceous, calcareous, and rich in azote. Physically it must be soft, fresh, and deep. In addition the land must be abundantly manured. Sowing generally takes place in the spring, owing to the necessity of a temperature of 46·4° Fahr., and a moderate degree of humidity. It is preferable to sow by machine, this system saving seed, and the sowing being much more regular. The land must be previously deeply ploughed. After sowing the land requires to be hoed; and much other work is necessary, such as the extirpation of weeds, in order to obtain an abundant crop. The crop ripens in August or September, according to the weather. It consists of stalks about 3 mètres long. These stalks are placed in bundles and put into ponds expressly constructed, where they remain about a week. They are then dried and scutched by means of a complicated process, which produces the fibre ready for market.—("Journal of the Society of Arts.")

—— Edinburgh School of Rural Economy.—The prospectus of the Edinburgh School of Rural Economy for the session 1897-98 has now been issued. Under the care of an influential Board of Management, appointed jointly by the University of Edinburgh, the Highland and Agricultural Society, the Edinburgh Town Council, and the County Council of Mid-Lothian, these classes have met with great success, and have been highly appreciated. In each of the last two years over 200 students attended the classes. The courses of instruction arranged for the session 1897–98 are similar to those of last year. Their main features are :—1, A two years' curriculum of day classes in agriculture and allied sciences; 2, a course of day lectures on forestry in the University; 3, an extensive series of evening classes on agriculture and allied sciences, embracing horticulture and forestry; and 4, the usual summer vacation classes for schoolmasters, which have been well attended. The day classes extend over two sessions, each beginning in October and ending in March. It is expected that those entering for these classes will have previously completed a good general school training. The work of the first session, embracing mensuration, mechanics, elementary physics and chemistry, botany, book-keeping, drawing, and handicraft, practically completes the preliminary education of the student, and gives him an adequate knowledge of the elements of the sciences that have a direct bearing on agriculture. At the same time his interest in the practical aspect of his work is maintained by such class exercises as those in measuring buildings and fields, in making drawings of these to scale, in woodwork, and in the application of physics in agriculture. The subjects of study in the second session are agriculture, agricultural chemistry, botany, zoology, and entomology, veterinary science, and forestry. The complete course thus aims at fitting a young man to enter with intelligence into his work as a farmer, a gardener, or a forester. It should enable him to understand the greater part of the work that he will see in practice, and to study for himself any special subject that he may afterwards find to be of importance to him. A student who has satisfactorily completed the two years' course of study, and who has had the required experience of practical work on the farm or in the forest, should find himself sufficiently prepared for the examination for the diploma of the Highland and Agricultural Society. Numerous and varied evening classes are provided for those who are otherwise engaged during the day. A specially moderate scale of fees has been arranged. This will be indicated by the fact that the inclusive fee for the first year's entire course in agriculture is 5 guineas. Copies of the Syllabus are to be had from the Secretary, 3, George IV. Bridge, Edinburgh.

—— Huyton Show.—In our report of the Huyton and Roby Show in last week's issue Mr. Oldham was credited with having won first prize in all Grape classes, whereas the winner for Black Hamburghs was Mr. Eaton, gardener to Jno. Parrington, Esq., Roby Mount, Roby, Mr. Oldham being second.

—— Weather in South Wales.—The following is a summary of the weather here for the past month :—Rainfall, 2·29 inches; greatest fall, 1·06 inch on the 25th. Number of days on which rain fell, eleven. Maximum temperature, 98° on the 11th. Mean maximum for the month, 79·9°; mean minimum for the month, 47·9°, with a minimum of 34° on the 7th. The wind was in the W. and S.W. for twenty-three days. Very cold winds the beginning of the month, but the latter part has been very hot and dry.—W. Mabbott, *Dowlais.*

—— The Weather Last Month.—July gave us more sunshine than usual, also a heavy thunderstorm on the 26th, which measured 1·28 inch of rain in an hour and a half. This is the largest amount registered here for one day since October 2nd, 1892. The wind was in a northerly direction nineteen days. Total rainfall, 1·70 inch; this fell on eight days, and is 1·12 inch below the average for the month, the greatest daily fall being 1·28 inch on the 26th. Barometer (corrected and reduced): highest reading, 30·390 inches on the 11th at 9 A.M.; lowest, 29·614 inches on the 20th at 9 A.M. Thermometer: highest in shade, 83° on 24th; lowest, 42° on 8th and 11th. Mean of daily maxima, 71·96°; mean of daily minima, 51·16°. Mean temperature of the month, 61·56°; lowest on grass, 37° on the 8th; highest in sun, 145° on the 12th. Mean of earth at 3 feet, 59·22°. Total sunshine, 217 hours 5 minutes. There was one sunless day.—W. H. Divers, *Belvoir Castle Gardens, Grantham.*

—— A Darwin Memorial.—Shrewsbury was *en fête* on Tuesday on the occasion of the unveiling of a memorial statue to the late Charles Darwin on a site in front of the Free Library (formerly the old school where he was educated) given by the Corporation. The statue, which cost £1000, is the gift of the Shropshire Horticultural Society, whose President, Lord Kenyon, unveiled it at noon in the presence of a distinguished company. The statue is beautifully executed in bronze by Mr. Horace Montford, who, like Mr. Darwin, was born in Shrewsbury. The work, which has been excellently done, stands on a pedestal of Swedish granite, supported by steps of Dartmoor grey granite. Lord Kenyon, after a few happy words as to the occasion of the gathering, called on the Mayor to take charge of the statue, which the Horticultural Society so generously presented to the town. A public luncheon followed in the Music Hall, presided over by Lord Kenyon, and among those present were the Mayor and Mayoress of Shrewsbury, the Bishop of Shrewsbury, Sir Joseph and Lady Hooker, Professor Darwin, F.R.S., Mr. W. E. Darwin, with the Town Clerk of Shrewsbury, the architect, and the Hon. Secretaries (Messrs. Adnitt and Naunton) of the Shropshire Horticultural Society.

—— Destroying Weevils.—The recognised method of destroying weevils and other seed-infesting insects which cause serious loss to seed and grains, both for sowing and for food purposes, in the United States is to treat them with the fumes of carbon bisulphide at the rate of 1 lb. to 100 bushels. This chemical is a colourless liquid, but when exposed to the air the sulphur and carbon separate, each uniting with the oxygen, forming a carbon oxide and sulphur dioxide, the latter of which is a very poisonous gas with a disagreeable odour. To ascertain whether seeds treated with this chemical lose their germinating capacity an experiment was made by the Division of Botany in the Department of Agriculture, in which seeds were exposed to a saturated atmosphere of carbon bisulphide for forty-eight hours. They were then placed in a germinating chamber in which check lots of untreated seed were also tested. The result was that the germinating percentages of almost all the seeds treated and untreated were the same, although in Barley, Rye, Wheat, corn, Crimson Clover, Millet, and Rice this extreme treatment caused some injury. The varieties which were damaged by an exposure of forty-eight hours were then put to another test of twenty-four hours' duration, and the result seems to be that in general the seeds of Cotton, Peas, Beans, Buckwheat, Oats, the Cabbage family, and Cow Peas will endure severe treatment with the fumes of carbon bisulphide without losing their germinating quality to any appreciable extent, while on the other hand seeds of corn, Wheat, Rye, and crops belonging to the Grass family, except Kaffir Corn and Oats, should be treated with caution, since a deterioration in vitality is likely to result from excessive exposure to the gas.—("Garden and Forest.")

—— THE TOMATO.—The Tomato is rich in possibilities in the hands of a skilful cook. It can enter into and give tone to endless soups; it can be made into purees and sauces and stews; it can be eaten *au gratin*, with maccaroni or vermicelli, and *en salade*. There is no reason why it should not be seen more often on our breakfast tables. Carefully grilled, and placed on slices of grilled fat bacon, it makes a delicious dish. Then, again, we can stew it, place it at the bottom of a dish, and gently deposit thereon poached eggs; or we may vary this by placing scrambled eggs round a pyramid of stewed Tomatoes. *Farcie* they can be introduced at breakfast, lunch, or dinner; and, as a writer justly points out, "*farcie* Tomatoes may not easily be surpassed. Upon your whim or choice it will depend whether you stuff them or cut them in half for so ineffable a purpose. And upon your whim likewise depends the special forcemeat used. Chopped Mnshrooms, Parsley, and Shallot, seasoned with discretion, leave little to ask for. Prepare, instead, sausage meat, Garlick, Parsley, Tarragon, and Chives, and the Tomatoes so stuffed you may without pedantry call *a la Grimod de la Reyniere*. But whatever you call them, count upon happiness in the eating."—("Epicure.")

CARNATIONS AND PICOTEES.

IN writing about Carnations and Picotees it behoves one to wield a reverent and careful pen, for these are "florists' flowers," and thereby hangs the red light of danger. Your average florist is a worthy fellow enough, and, to give him his due, he is whole-souled in his desire to foster and improve the flower of his choice; but he must be indulged and humoured, his work must be criticised with caution, and his hobby must not be tilted at recklessly. He sets up a certain standard of excellence; he institutes given points of merit, and according as results approach or deviate from these so follows approbation or condemnation. But let us define the term florist a little more clearly. The suburban amateur will tell me that there is a man along such a road who calls himself a seedsman and florist, and who entices irresolute dyspeptics by announcing "Cucumbers fresh cut from the vine," or those on the look out for something bright and economical for the flower garden with an announcement of "bedding plants for sale cheap." Is this the kind of man referred to? No! The florist, as I wish him to be understood now, is a specialist, whether amateur or professional mat ers not. In years gone by he, or his predecessors, has taken in hand some particular flower, and has worked it up on clearly defined lines to a point at which it would hardly be recognised by the one who commenced with it. The Rose is an instance, the Carnation a second, the Pansy a third. Improved varieties have been raised, and to these names have been given, until, in some cases, they are numbered by hundreds. Naturally they are not all markedly distinct; but points of difference can be found by the trained eye when the varieties are compared. Perhaps some readers will have been a little surprised in sending a Rose, a Pansy, a Carnation, an Auricula, a Calceolaria, a Petunia, or a Cineraria (all these are florists' flowers) to be named to find themselves referred to a notice that florists' flowers cannot he named. Editors, they may have thought, know everything. In a general way they do, but after what has been said about the weakness of florists for manufacturing infinitesimal distinctions and then giving names to them, it may not be so much a matter of surprise for the human encyclopædia to decline making himself acquainted with every detail of their doings.

There cannot he the smallest doubt that immense good has been done by the specialist or florist—call him which you will—in improving many of our most useful flowers. Could every reader of these lines look upon the progenitors of some of the most beautiful and valued flowers that adorn their gardens to-day, they would not be able to withhold a tribute of admiration, and even of respect, for the patient and careful toil of generations that has led up to such results. Now that the culminating point has been reached a little artificiality creeps in. This is not surprising. The florist's watchword is progress, and we must try to forgive him if, now the apogee of excellence is reached, he establishes points of merit which are not gained by legitimate natural development, and are therefore added by artificial means. With Carnations and Picotees the perfect show bloom must be circular, with regular tiers of petals overlapping each other and rising to the centre. Of course the geometrical exactitude is not there as the flower is cut from the plant, and, as it is indispensable for prizewinning, ivory implements are brought into requisition to dispose the petals in the required form. Opinions differ as to whether this is excusable. The florists have done so much for us that it would be ingratitude to denounce them strongly; but assuredly it is not gardening to restrict a plant to one bloom, to adopt every imaginable means of securing a perfect flower, and then to resort to such means as have been indicated for improving its shape. What is it but a confession of failure? It has been criticised repeatedly and severely in the past by those who plead for more natural treatment, but it is absolute waste of time and thought, of ink and paper, to attack the practice of dressing flowers and pass unnoticed the points in the attainment of which the practice gets its rise. This does not apply to Carnations only, but to Roses, Dahlias, Chrysanthemums, and nearly every other prominent florists' flower. While certain qualities are recognised in adjudicating upon the merits of a bloom, and these qualities can be added or heightened by artificial manipulation, dressing will go on, and if not practised openly it would be practised secretly. The cause must be looked to, not what is really only an effect. Truly a little common sense is sadly wanting.

To those who cultivate Carnations and Picotees, as they cultivate other flowers, solely for the adornment of their greenhouses and gardens, the dressing bubble and other burning questions of the exhibition tent, can only awaken a smile. Who need vex his soul about a misplaced petal—misplaced, that is, according to the florist's ruling—when he can look around his garden and see a thousand beautiful blooms brightened with a hundred hues, graceful and sweet enough for the most refined home? He can be grateful for what the florist has done in the past in raising so many admirable varieties, and utilise them freely for his own purposes. The great value of the Carnation lies in its adaptability for outdoor and indoor cultivation, and from the fact of its doing well in town gardens. It should be a comforting thought to every townsman that, if he cannot grow the Rose, this great flower is not forbidden to him too. Visits to country gardens may reveal to him what he loses from the impurities of his own atmosphere, not, sometimes, unmingled with a touch of sadness awakened by the splendour of the Rose or the modest but powerful charms of the Violet; there is, however, consolation in the thought that if his sphere of work is limited, there are within the bounds some of the noblest treasures of Nature's exhaustless store from which the purest and richest pleasure may be derived. If in respect to the Carnation the most recent examples of the improver's handiwork are not coveted, there still remain innumerable free-flowering and useful varieties with which beds and borders may be enriched. Their names might not awaken interest in the florist, nay, they may own no names at all, but their beauty and perfume are there just the same, and in the sick chamber or the drawing room, not less than in the garden, they will worthily fill their allotted place.

To those dwelling in country districts, and quite unfamiliar with the general character of town gardens, it would seem superfluous to plead for still wider recognition for this valuable hardy flower. There, every cottage plot has its Pinks and Carnations, common varieties enough, but serving their purpose well. In town enclosures it would be a real pleasure to meet with the commonest of them all. The thousands who find pleasure and benefit from growing flowers in the neighbourhood of our great towns are but a tithe of the vast population there—a huge mass of humanity unleavened by a single refining influence. It would be a great thing if these could be taught what flowers could do for them. Carnations will flourish where many tough things in the way of plants fail to thrive, and are capital flowers for tempting the lazy or heedless into a start in gardening life. As is known, they will do very well in common soil, and present no difficulties of culture to quench budding ardour.

An easy way of getting up a stock of plants is by raising them from seed. So simple is this, and so satisfactory the results, that it is not easy to understand why it is not more general, at all events among amateurs. Possibly the expensive nature of choice seed acts as a deterrent; but if the catalogues are carefully scanned it will often be found that mixed seed of border varieties is offered at a fourth or fifth the rate, and from this plenty of plants can he raised well adapted for adorning modest borders. Seed sown one year—and the earlier the better—will produce excellent flowering plants the following summer. I have seen many laden with flowers about fifteen months old, but if sown in summer the plants will still bloom the following year. The seed is best sown in shallow boxes with a piece of glass placed over the top, in a shady corner of the garden, and the plants pricked out before they have time to crowd each other. If extra strong plants packed with flowers are required, sow under glass in February or March, keep the plants stubby and sturdy, and when planting out time arrives they will have a long season of growth in which to store up energy for a future display.

Easily as Carnations are grown it is not advisable to neglect them. After flowering they become crowded and woody if not attended to. Far the best plan with any approved varieties is to layer them while the growths are young and succulent, and these layered portions will make better flowering plants the following year than their parents. As a rule several flowerless shoots can be found towards the base of the plant. Place a mound of soil round each, draw down the shoots, tongue them by pressing the blade of a sharp knife about half way through the growth, and then turning its direction and making a parallel incision in the shoot about an inch long, ending just through a joint, and peg them to the mound with hairpins, pressing the cut part into the soil. Roots will form, and in about six weeks or two months the shoot can he severed near the old plant, and the young one left to cater for itself in future. If a frame is possessed the young plants may be lifted, potted, and wintered in it; if not, plant them where they are desired to grow. Those purchasing Carnation plants can do so either in autumn or spring, as they may be planted at either season.

I do not propose to enlarge upon the florists' distinctions in the present article. As Carnations and Picotees are the flowers of the season, so they are treated upon, and as border Carnations are grown in a hundred gardens where there is but one devoted to show flowers, so the flowers of the majority must be thought about first. Shows may assist in the work of education; but after all, the best lessons are learned from the cultivator's own home plot, and the greatest pleasure is derived from the results of his own work. Whoever makes a garden attractive, in however simple a way, is in some sense a teacher, and he has reason to be proud if he produces something from which an example may be copied, and encouragement derived by a beginner anxious to follow in the same pleasant path.—P.

The Orchid Hybrids.

We have received a copy of the supplement to this book, in which the author fulfils his promise to keep orchidists abreast of the times in the matter of hybrids. As before, we have little to say for or against the method of classification followed in the book, for all such systems are necessarily incomplete as long as botanists are continually altering their views with respect to specific rank or otherwise of certain plants. Possibly at some future time we shall see the futility of all this overwhelming nomenclature, and admire our Orchid hybrids as we do those of many other families without giving a separate name to every one that shows the least variation. In a manner, Mr. Hansen's work tends this way, and his compilation of all the hybrids of which he could gain any tidings is a monument of painstaking and hard work. For this he merits unqualified praise, and those interested in raising or naming seedling Orchids should procure a copy.

Sobralias.

These lovely Orchids have one fault; it is well known. Were the flowers less evanescent there is hardly a genus to compare with them for beauty. The tints of such as S. xantholeuca, the golden centre to the lip first merging into a delicate creamy yellow, then almost pure white, are more beautifully graduated than those of any Orchid I know. The chaste and rare white forms are not equalled by any of the albino Cattleyas, grand as these undoubtedly are; while other forms, such as S. Veitchi (fig. 21), with a white ground and violet edging, so faint as to appear to he only suggestive, are unrivalled for delicacy by the choicest Picotee.

As a set-off to the fleeting character of the individual blossoms there is the fact that these are produced successively over a long season. In habit they are all very similar, but in height they vary from a few inches only in such as S. sessilis or S. macrantha nana to the typical form of the latter, which reaches a height of 6 feet and upwards. In fact there are species—though these are probably not in cultivation—that have immense stems more than three times this height. Such kinds would be rather unwieldly in present-day Orchid houses, so probably collectors give these a wide berth.

Sobralias are natives of tropical America, and all the species may be accommodated in a house kept at an intermediate temperature. The roots are usually strong and rather gross feeding as Orchids go, but though these delight in abundant moisture they are very easily injured by a close inert mass of heavy material about them. In preparing the compost this should be kept in mind. Peat is a good material for them, but if used alone it is apt to decay too quickly, and though the plants do well as long as t is sound they soon go back when it loses its condition. Add to the peat a little good loam—for the lasting character of loam fibre is not sufficiently known among orchidists—chopped sphagnum moss, and a liberal allowance of charcoal and potters' ballast.

This, while forming a good rooting medium, will not hold moisture long enough to be injurious, and, combined with perfect drainage, should go far to make their culture a success. When the plants are newly imported they may with advantage be kept up a little in their pots, but established specimens do not need this attention. The former, too, will not usually require quite so liberal a reading of compost for the first season, as it is better to be satisfied with medium-sized growths such as are produced thereby than to run the risk of losing the young roots. The first tiers of these that are produced on any description of Orchid should be studiously preserved, as they serve to give the plants a good start in their altered conditions of life.

While not, of course, disturbing the older roots of established plants more than is necessary, be careful not to place any old decayed or sour material in the new pots, for if young roots reach this they are sure to be badly checked to the lasting injury of the plant. A little thought should be given to the size and habit of each species when potting those of the most vigorous kinds needing more room than the smaller growers. In repotting place the new compost firmly, but do not ram it tightly, as it is imperative that air as well as water percolate freely through the layers, and place a nice film of rough moss over the crocks.

The atmosphere should be kept moist all the year round, the driest time being while the flowers are open. When growing the syringe may be freely plied about the foliage and stems with advantage, this serving to keep their insect enemies in check. The growth should not be allowed to get too much crowded, as this prevents air and light from reaching all the leaves. Old specimens then may have a few of the stems that have flowered cut out when the new ones are about half formed; no check will be given the plant by doing it at this season. From the time the young growths start until late in autumn Sobralias all like a very free supply of water at the roots, and although this may be lessened during the winter months they must not be allowed to get quite dry at any time.

One of the most beautiful kinds is S. leucoxantha, the sepals and petals of which are pure white, the lip also white with a golden yellow centre. S. xantholeuca, noted above, is equally charming but a little deep in colour. S. macrantha is perhaps the best known of all, the large flowers of which are of varying shades of rosy purple, with a very broad lip of rose and yellow. The only tint of colour on S. kienastiana is a yellow one at the back of the lip, while S. m. nana, as its name implies, is a dwarf form of the type.

S. sessilis is a rare and pretty kind, with very little colour in the flowers, and this chiefly confined to the lip, which is yellowish flushed with rose. This does not exhaust the list by any means, and there is no reason why the smallest grower of Orchids who cannot spare room for large plants, such as S. macrantha, should not give up a corner to some one or two of the dwarfer but superb kinds.—H. R. R.

TOMATO NOTES.

I am led to think that a few plain and simple remarks on interesting points in Tomato culture adapted for the season—that is, the present time, would probably be of some service to growers who may not have had much experience, and who welcome any hints likely to render them assistance.

Essential Points.

A constant multiplication of healthy rootlets must be induced in the early stages and, as far as possible, continued during the full growth of the plants. This activity of root action when confined within reasonable limits is a great help to the free setting of the bloom. I have frequently noticed that by any acceleration of the production of fine root fibres, a good set is produced, and the young fruits swell freely. It is a good custom with many growers to aid the distribution of the pollen by gently tapping or shaking the bunches of bloom with a padded stick or the fingers. This operation insures fertilisation more surely when the root action is vigorous.

Another essential point is light. Tomatoes seldom obtain too much sunshine. Growth under favourable conditions is rapid, and all possible sunshine is necessary for its concentration in the most desirable parts. Hence it is imperative that advancing growth at least should be near the glass.

A free circulation of air assists the light and sun to complete their work. At the present time of the year Tomato houses ought never to be wholly closed. The amount of air allowed to circulate may be regulated by reducing the spaces where air is admitted should the weather prove ungenial, and there is experience of cold and damp. In the latter case fire heat will be helpful, serving as it does to dissipate damp, rendering the atmosphere buoyant and dry. Freely admit air all the time fire heat is employed, so that the temperature is not raised above the normal height and is regular. Fungoid diseases do not attack plants so treated.

Every shoot required to bear fruit must have free extension and space to develop its foliage without unduly crowding. There is a mistaken idea prevalent that as soon as Tomato plants have formed a number of principal leaves these ought to be mutilated by cutting back in order to cause the plants to fruit. The leaves do good work provided the space they require is ample. It is true that portions of leaves may sometimes be cut away with advantage, this being chiefly when overcrowded. The lower leaves of plants gradually become useless, turn yellow, and decay, especially when the fruit in their vicinity is ripe or ripening. The leaves are then serving no practical end, and may be cut out entirely, while others may be gradually reduced so that the fruits may be fully exposed to complete their ripening.

The application of moisture to the roots is another point of leading importance. Without sufficient water to moisten the lowest roots the plants do not thrive properly, setting and swelling bunches of fruit in succession as they should, at the same time gradually making new growth.

Tying and Stopping.

A rigid system of suppressing the side shoots must be adopted on each stem retained for producing fruit. The number of main

stems ought to be early decided upon, though in the majority of cases the single stem system is the best. Each main stem requires a foot to 15 inches space. The side shoots spring from the axils of the leaves during the whole time of active growth, and should be rubbed out when small. Until the plants cease to grow and form fruit, side shoots are produced. Stopping the leader and allowing a fresh one to form, is not a good practice in my experience. There is no difficulty in securing a good set with the uninterrupted extension of the original stem. When the space is filled, the growths must of course be stopped.

With planted-out Tomatoes receiving good treatment at the roots, the upper growth assumes a vigorous and healthy character, which it may seem a pity to check. Under such circumstances, the stems down over the roots immediately a number are found ramifying near the surface. Repeat a similar dressing each time roots appear on the top.

Feeding.

Top-dressing is a form of feeding, but the term usually implies the application of liquid manure. Strong liquid nourishment is not required immediately after a liberal top-dressing of compost; but when the roots are working freely in the latter, and before more is applied, a few doses of some clear liquid manure will be of immense service. The drainings of general farmyard manure diluted to a safe strength are appreciated by Tomatoes. Clear soot water is excellent, also solutions of guano or any artificial

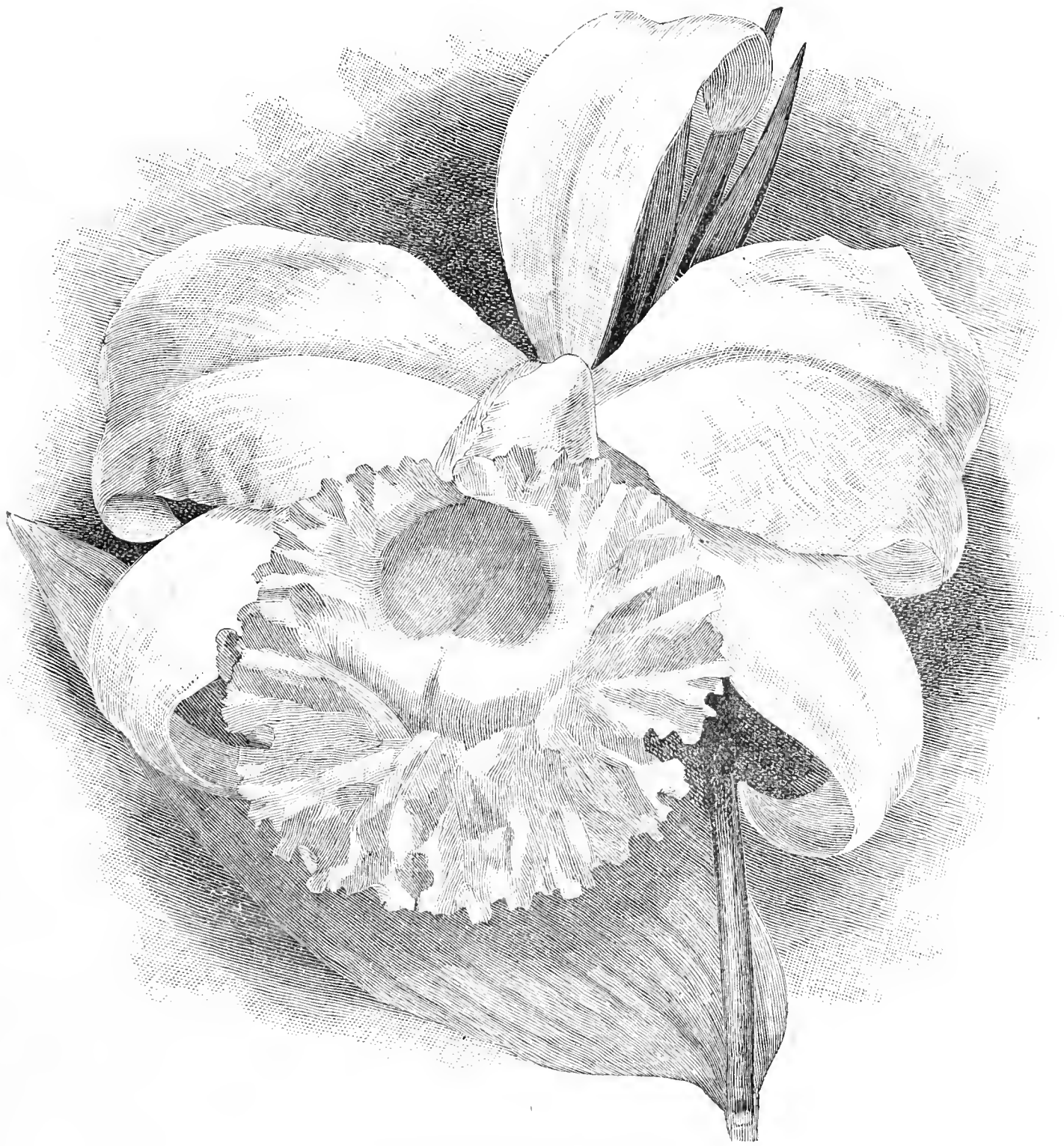

Fig. 21.—SOBRALIA VEITCHI.

being trained on wires or upright to stakes, I have bent the lower and barer parts, and thus afforded more room. Keep the plants well tied to the wire or stakes.

Top-dressing.

Tomatoes in the early stages of growth are best when not allowed too much root run if they are planted out, or large quantities of soil when grown in pots. They like sufficient to promote healthy, vigorous growth, and the formation of the first flower trusses and bunches of fruit. Top-dressing then comes in of great service, fresh rootlets being formed in it which meet the increasing demands of the plants. The additions which are thus made may consist of rich material. Equal parts of loam and manure, with the addition of a little bonemeal, crushed charcoal, and wood ashes, together with an admixture of a general fertiliser at the rate of 2 lbs. per bushel of soil. A layer of this may be pressed firmly fertiliser at the rate recommended by the vendors prove serviceable.

Liquid manure ought not to be applied indiscriminately, but always with a full knowledge of the wants of the plants. On no account give it when the soil is very dry, because it cannot have the best effect, and is wasteful. A copious supply of clear water given first will render the soil in a fit condition for retaining the fertilising elements and assisting the roots. Plants in pots and bearing good crops require constant and regular attention in top-dressing, feeding, and watering.

Fruit Ripening.

The lower bunches of fruit colour first, the higher bunches swelling in various stages at the same time. The feeding and watering required to sustain the latter frequently causes the ripe fruits to crack. This may be avoided by picking the half-coloured

fruits as they become ready, finishing the ripening on a warm, sunny shelf, where they colour as rapidly as on the plant without any deterioration in flavour.

It is at the period of ripening that the leaves near the fruit may be reduced, or any of the lowest ones which have ceased to perform the functions of green leaves may be removed. Portions of large leaves unduly shading the fruit may be cut out, and when the full crop of fruit has ceased to enlarge in size, growth being practically finished, the leaves may be gradually reduced.—E. D. S

GROWING CAMELLIAS.

In writing on the culture of Camellias, it is scarcely necessary to enter into details of propagation, as ninety-nine out of every hundred private growers purchase plants. We have both raised stocks from cuttings, and attached to them, by grafting, the best varieties; but it is, as a rule, far better to let nurserymen who have special conveniences for the work establish the plants, especially as they can do this without any great outlay, and healthy examples of good varieties are consequently the reverse of costly. Briefly it may be said, for the information of those who desire a little knowledge on the subject, that cuttings of matured growth with a heel of the previous year's wood emit roots the most freely. They are inserted as closely together as possible in well-drained pots of sandy soil in September, placed on ashes in a cool pit or frost-proof frame, shaded as needed and kept moist. There they remain until the spring, and there they may remain until rooted, though they are often placed in a little heat after growth commences Eventually they are potted singly, and when established and growing freely they are partially cut down. Scions are attacbed to them by taking a slice off the bark of both stock and scion, fitting the two together, securing them with matting, covering with moss or grafting wax, and keeping them in a close propagating case until the union is complete. The growth of the stock is then gradually reduced and shortly removed down to the scion, which now and onwards appropriates the whole of the supplies of the roots. This is propagation in a nutshell; but, as before observed, it is better to purchase established plants.

Are home-raised or imported plants the most desirable to purchase? is a question often asked. The truth must be told on this matter. Healthy free-growing plants raised in British nurseries are far more likely to succeed in the hands of the majority of amateur cultivators than imported plants are. The latter plants are often luxuriant, yet almost as often deteriorate when placed in English greenhouses. The change of treatment and locality is too sudden and great for them. After these plants have been prepared for a year in our nurseries, acclimatised, they do very well; but cheap imported Camellias are often dear in the end. In purchasing Camellias, then, the safe course is to obtain established plants from home nurseries, giving preference to those raised there, provided—and this is important—they are free and strong, a stunted home-raised plant being decidedly inferior to a free yet sturdy acclimatised foreigner.

It has been said that Camellias are easy to grow, and they certainly are when the plants are healthy to begin with; but stunted, scraggy, half-starved plants with brown-blotched leaves, dry and harsh, are not easy to manage, and cannot quickly be restored to health and vigour. Many such plants can be improved without doubt, and even some be transformed into handsome specimens; but time and skill are requisite for effecting this desideratum. But what is the reason of so many Camellias being in the unsatisfactory state indicated? The initial cause in not a few cases is commencing with immature, strong-looking, but really weak, because plethoric plants, and then treating them wrongly. They have had generous treatment, specially prepared soil, pots packed with roots, so as to endure any amount of water, liquid manure periodically, and a very moist position, either in pits or shaded places in the open air, and too often have been so drenched and saturated in the autumn as to cause incipient decay of the roots. Place such plants on an open stage in a dry and draughty greenhouse, and note the results. The very life of the plants evaporates through their great broad leaves; pale brown blotches appear, which spread, the edges of the leaves curl back, and eventually the foliage withers and falls, and as there is no stamina in the plants they cannot put forth fresh strong growths. This is the treatment accorded to the majority of such plants by amateurs, and it is wrong. If they repot the plants as soon as they arrive, as many do, this makes matters no better, but rather worse; for they disturb the roots and have no compensating advantage, for the roots will not move under those conditions. Such soft pampered plants, which have been treated almost as semi-aquatics, must not at first be placed on latticework stages in dry houses, but have a sojourn on moist ashes in a pit or frame, and be very gradually inured to the differing conditions under which they are intended to be grown. It is not suggested that all foreign Camellias arrive in a half succulent state, but vast numbers are in the condition described, and it is well to know what to do and what to avoid under the circumstances.

Now to another class of plants—those that were healthy once, but are now unsightly. What is the cause of the change? Overpotting, with overwatering immediately afterwards, have together formed the first step on the road to ruin of hundreds of plants. Camellias are water-loving plants undoubtedly—their white, fleshy, Hyacinth-like roots tell us this, but stagnancy they abhor. Even a Hyacinth will not grow in mortar, and a Camellia's roots are far more sensitive. If there is a suspicion of saturation or sourness they are poisoned, turn brown at once, lose their absorbent power, and the plant starves surrounded with plenty.

In potting a Camellia let the pot be as small as possible—only just large enough to admit the roots, with the necessary space for pressing down the soil. This is the safe course to pursue. Let the soil be moist when used, but not decidedly wet, that already surrounding the roots to be in exactly the same condition. Press the new soil as firmly as the old, and do not bury the stem too deeply. Syringe the plant and pot three or four times a day if needed, shade it, do everything to retard the first watering, yet do not permit the soil to be dry. The object should be to induce the roots to move before water is applied. This secured the rest will be easy. Apply water judiciously, yet increasingly, as the growth and season advance, and when the pot is filled with roots and the drainage ample, as it must be, the supplies can scarcely be too copious. The soil, then, must always be moist—not sometimes only, but constantly, even if water has to be given twice or thrice a day; and if something more is needed, top-dress with soot and bonemeal alternately for sustaining and enriching the colour of the foliage. This is better than constant shiftings from pot to pot. There is no fear of saturation in the growing season if the pot is crowded with roots and the drainage thoroughly efficient, but it never will be full of roots if the plant is first overpotted and the new soil is rendered stagnant at once. This is the real root of the matter, and should not be overlooked.—J. H.

ISLE OF WIGHT.

Brighstone.

During the last week in July the rural cottage garden societies in the Garden Isle have been busy holding their exhibitions.

On July 27th the Brighstone Society got together over 400 exhibits, most of them being of excellent quality. Amongst the principal exhibitors were Messrs. Creeth, Sprake, Warne, Cooper, Watson, Hawker and Went. The Rev. G. E. Jeans secured premier honours for Roses. Amongst the many exhibits not for competition were groups by Sir Chas. Seel, Lady Mary Gordon, and a collection of run and section honey by the Rev. L. B. Morris. The day was beautifully fine, and everything passed off without a hitch.

Arreton.

On July 28th the picturesque and fertile valley of Arreton was all gay by bunting and flags in and around the vicarage grounds, where the flower show was to be held. The exhibits staged were not so numerous as in the previous year, but there was an improvement in the standard of excellence all round. The competition was very keen in most classes, particularly for Potatoes, Onions, Peas, Beans, Gooseberries and Currants. A magnificent dish of the latter (Raby Castle) secured for Mr. Geo. Lipscombe, the Isle of Wight Horticultural Improvement Association's certificate for cultural merit. The principal exhibitors were Messrs. W. Clarkson, J. Boyce, Hookey, Orchard, Lipscombe, Rashley, and J. R. Blake. The honey classes were well contested.

Carisbrooke.

The local Show of this world-renowned village was held on July 29th. The number of exhibits was over four hundred, and all of them of first-class quality. There was keen competition in the table decorations both for garden and wild flowers, some of them being exceedingly well arranged. Tomatoes formed a strong class, and there were some excellent fruits exhibited. The principal exhibitors were Messrs. Geo. Williams, Mole, Webber and Wolfe. Mr. W. Matthews, of Carisbrooke Cemetery, staged a group, not for competition, which consisted of some well-grown tuberous Begonias and Fuchsias; and they well merited the Isle of Wight Horticultural Improvement Association's certificate which they were awarded.

Northwood.

This horticultural society's exhibition unfortunately clashed with Carisbrooke, but nevertheless the Show was well attended and the exhibits were fairly good. The principal exhibitors were Messrs. Young, Philips, Prince, Bull and Philpot. Many other shows are to be held in the Island during August, but the dates unfortunately again clash in several cases.—S. H.

Clematis Jackmanni at Warwick Castle.—On a recent visit to this magnificent old baronial residence of the Earl of Warwick, I was much struck with the extreme beauty of some beds of these gorgeous and effective plants—one in particular, being oblong in shape and some 12 feet in length. The Clematises were rambling at will over an iron trellis erected in convex form, but now entirely hidden from view by the profusion of purple flowers. The bed in question was edged with Dactylis elegantissima, the whole producing a charming effect. Mr. H. Dunkin informed me that they delight in a deep rich soil, the beds being watered occasionally in hot dry weather with alternate applications of clean water with liquid manure. No other attention is required (besides regulating the growths) until November, when the Clematises are pruned back, and the surface of the beds receive a liberal dressing of good manure, which is forked in about the month of February following. Many other parts of the delightful and extensive grounds contained plants of the Jackmanni type, which have been planted by Mr. Dunkin, some scrambling over ruins and others climbing up rough larch poles in conjunction with the Crimson Rambler Rose in the wild garden, the whole producing a most charming effect.—H. T. M.

Roses Maréchal Niel and Medea.

Now that the great rush of Roses is over we may, perhaps, give a few words to varieties which have once more proved the best and most stable in what has been far from an ideal Rose season. Mrs. John Laing, A. K. Williams, and others never fail us, nor do such grand Teas as Innocente Pirola, Catherine Mermet, The Bride, and Souvenir de S. A. Prince, no matter what the season may be; and it certainly seems that we shall be able to say the same of Mrs. W. J. Grant, Muriel Grahame, Mrs. R. G. Sharman Crawford, and Medea. Medea has been especially good, and the magnificent examples I have seen in stands from various parts of the country are ample proof of its general usefulness. Although not a climber, or with quite so sweet a scent as Maréchal Niel, I venture to say it is more perpetual in blooming. I would be the last to say a word against an old favourite, but at the same time we must not forget a new friend, and in Medea we have the best of dwarf, free growing, and blooming yellows, of a deep lemon shade. I note that the N.R.S. Catalogue Committee remarks upon it as requiring a warm and dry season; but do not all, even Maréchal Niel, from the Teas and Noisettes need the same? Like "W. R. Raillem," I have found Maréchal Niel a good late summer and autumnal bloomer upon old standards, but Medea has the same invaluable habit as Marie Van Houtte and a few more—viz., flowering from first to last, and producing successional crops with great rapidity. "W. R. Raillem," many of us know, can and does grow Teas second to none, and although I do not for a moment imagine him to be disparaging Medea, I fear some readers would be inclined to take his recent notes as implying such.

Medea has been grandly shown at the Temple for several years; it was the best pure lemon yellow Tea at Portsmouth and the Crystal Palace, and very few winning stands of Teas or Noisettes during this season have been minus an example of Medea. Comparatively speaking it is a new Rose, and is certainly the best and one of the most lasting yellows we have, if we except the deeper shades of Maréchal Niel and Perle des Jardins.—A. Piper.

I cannot agree with your correspondent "W. R. Raillem" that the Maréchal Niel Rose is "thoroughly perpetual in the open ground." No good gardener would ever think of planting it as a perpetual flowering Rose. Over the last twenty years I have taken part in the cultivation of thousands of this beautiful variety, and however "intelligently" pruned should never expect to get more than a single crop of flowers from it.

Although of smaller size and paler in colour Medea is thoroughly perpetual, and rarely does it produce a shoot in summer or autumn—from June to November—that is not crowned with flowers. If Maréchal Niel is so perpetual as "W. R. Railem" proclaims it to be, how is it that so few specimens are found at the summer exhibitions? for surely such a grand Rose would add lustre to any box. Some few of our largest market establishments for cut Roses have discarded this variety, mainly owing to its non-perpetual character.

Not only is Medea thoroughly perpetual, but it is one of the most exquisitely formed Roses I know of, reminding one in a marked degree of the superb, but shy-blooming, Cloth of Gold.—Walter Easlea. *Waltham Cross.*

I am quite at a loss to understand how anyone can institute a comparison between these two Roses. The one is the acme of perfection as far as colour is concerned, and the other a light lemon coloured Rose. In habit, too, they are entirely distinct. The Maréchal is a strong growing Noisette, sending out shoots from 10 to 12 feet long, or even more; Medea is a vigorous Tea, but of upright growth, and requires a warm, dry season to develop it. I should as soon think of comparing it with Maréchal Niel as I should Madame Hoste or Francisca Kruger, or any other of the lighter coloured yellow Roses of the Tea class.

Another question which seems to have been evoked by this discussion is whether Maréchal Niel can be called really a garden Rose. As regards hardiness, I think it might be well entitled to this character. I have seen it flourishing all through the southern counties, standing with some slight protection such as is generally given to Teas our most severe winters; but there is one defect about it which must ever be a bar to its being considered desirable for this purpose—namely, the flowers all hang down their heads, and the consequence is, that when it is trained against the wall you see nothing but the outside petals of the flower, which is generally discoloured. We have had two or three plants of it on some of our cottages here, but they were a failure. The plants grew well and flowered freely, but when looked at from a slight distance the plant looked as if it were covered with dead flowers; and, of course, the same holds when it is grown as a standard or half-standard.

I recollect, too, an enthusiastic Rose grower with whom it was so great a favourite that he had a large bed on his lawn planted with it. The Roses grew most vigorously, and were pegged down, but he was so disgusted with the complete failure of the appearance of the bed that he grubbed up the plants before the next season. The place for the Maréchal is unquestionably the roof of the greenhouse, where its rich golden goblets hang down and display their full beauty. No one who has seen a good plant of it in this position will ever wish to place it in any other.

It is certainly somewhat curious that although this Rose appeared in 1864 that nothing comparable to it has appeared in the thirty-three years that have elapsed since then. If one could obtain a Rose of the same colour with the upright growth of the Cloth of Gold it would be indeed a grand acquisition. Climbing Perle des Jardins has in the same way been compared by others to Maréchal Niel; but like the flower from which it sported now nearly twenty-five years ago in America, it is very uncertain in form and apt to come cleft; this, of course, detracts from its appearance and value, so Pradel's Rose still stands *facile princeps* in its class—and he would be a fortunate man who obtained a flower which would put it into the background. We know that the Maréchal is not long lived, although I have had a plant of it in my small house for fifteen years or more; but it is showing signs of giving way, and instead of the hundreds of blooms I used to have on it, I have only had a few dozen this year, having had to cut away a good part of the tree last autumn, and I am afraid the remainder will follow this year.—D., *Deal.*

Seasonable Work.

Just because the bulk of our Roses are past, we must not allow the slightest neglect in the Rose garden. Budding must be finished, stale flowers cut off, summer pruning practised among climbers and pegged-down Roses of the Hybrid Perpetual class; mulchings should be applied after a good watering where rains have not visited, and general attention given in all branches. It will be particularly helpful to give a thorough soaking of weak liquid manure to plants against walls. These absorb so much moisture in themselves that no shower does much good unless driving direct upon the wall, and our plants are more often than not carrying an extra amount of growth and confined to a narrow border. —A. P.

ROYAL HORTICULTURAL SOCIETY.

Drill Hall—August 10th.

The exhibits at the Drill Hall on this date were not very numerous but the quality was high. Herbaceous flowers were the most conspicuous, but Apples and Orchids were splendidly staged though only in small numbers.

Fruit Committee.—Present: P. Crowley, Esq. (in the chair); with Rev. W. Wilks, T. F. Rivers, J. H. Veitch, A. F. Barron, G. Reynolds, J. Smith, F. Q. Lane, H. Balderson, G. Wythes, T. Farr, A. Dean, and J. Wright.

Messrs. W. Fell & Co., Hexham, sent fruits of the Logan Berry, the result of a cross between the Raspberry and Black Currant, effected in America. The habit of growth, and to a less extent the character of the fruit, resembles the Raspberry. An award of merit has been previously granted for the Logan Berry, exhibited by Mr. Bunyard.

Gooseberry *Golden Gem*, a seedling, the result of a cross between Antagonist and Whitesmith, sent by Messrs. James Veitch & Sons, was at once adjudged an award of merit. The fruits are of good size, clear amber, smooth, and of excellent flavour. The variety is said to be a free upright grower.

Mr. J. Moody, gardener to F. F. Blayden, Esq., Sultan House, Sutton-on-Hull, sent a new Tomato, of medium size, with a distinct nipple. To be tried at Chiswick. Mr. Wadds, Cliveden, Maidenhead, sent a bunch of Wilson Junior Blackberry, fine fruits; also bearing stems of the Kittatiny, smaller fruits, but far better in quality—indeed, very good indeed. It is stated they were grown in strong moist soil. An award of merit was granted for the Kittatiny.

Mr. W. W. Smythe, The Gardens, Basing Park, sent bearing plants of Kidney Beans, the result of crossing the Dwarf Bean and Scarlet Runner. The stronger of these plants, named Goliath, was bearing fifty handsome pods, and the variety was recommended to be tried at Chiswick. Mr. George Kelf, gardener to Mrs. Abbot, South Villa, sent a box of Royal George Peach, grown within two miles of Charing Cross. They would be entitled to be described as grand if they had been grown under the most favourable conditions in the country, and would have won a first prize at almost any show. A cultural commendation was unanimously awarded.

Messrs. G. Bunyard & Co. sent thirty-six dishes of chiefly Apples, though including Apricots, Peaches, and Pears. The Apples were remarkably fine, though indications were not wanting of some of them at least having had the assistance of glass; but be that as it may, the exhibit was highly meritorious, and a silver Knightian medal was unanimously awarded. Mr. Miller, gardener to Lord Foley, Ruxley Lodge, Esher, was granted a silver Banksian medal for a collection of fruit.

Floral Committee.—Present: W. Marshall, Esq. (in the chair); with Messrs. J. Fraser, C. T. Druery, H. B. May, R. Dean, F. T. Fitt, O. Thomas, H. Turner, H. J. Jones, C. E. Pearson, J. D. Pawle, J. Walker, W. Bain, R. M. Hogg, J. Fraser, and J. Jennings.

Messrs. J. Veitch & Sons, Ltd., Chelsea, staged a large collection of hardy annuals. The number of kinds was considerable, and the colours had been placed so as to produce the best possible effect. There were Lavateras, Sweet Sultans, Calliopsis, Godetias, Sunflowers, Marigolds, Clarkias, Phloxes, Verbenas, Larkspurs, Asters, Stocks, Bartonia, Calendulas, Cornflowers, and many others. This was somewhat of a change from the perennials that have so constantly been shown. The

same firm sent also hardy sbrubs, including Colutea arborescens purpurea, Hydrangea quercifolia, Ptelia trifoliata, and others.

Mr. Bain, gardener to Sir Trevor Lawrence, Bart, Burford Lodge, Dorking, exhibited a beautiful collection of Cannas and Gladioli, while Messrs. Dobbie & Co., Rothesay, staged handsome orange and lemon African Marigolds. Mr. M. Prichard, Christchurch, Hants, exhibited a collection of herbaceous flowers, comprising Tritomas, Rudbeckias, Montbretias, Phloxes, Heliopsis, Eryngiums, and Liliums. Messrs. R. Wallace & Co., Colcbester, sent superb Liliums, amongst which varieties of lancifolium and auratum were conspicuous. Gladioli also came from this source.

Delphiniums and Pbloxes were splendidly staged by Messrs. Barr and Son, King Street. Covent Garden, as were Gladioli and other hardy flowers. Messrs. A. W. Young & Co., Stevenage, sent Gladioli, Gloxinias, Carnations, and Pelargoniums. Messrs. Kelway & Son, Langport, sent spikes of Gladioli, formally laid on green baize-covered boards, which much detracted from tbeir beauty. Gaillardias also came from Langport.

Tbe Cactus Dablias sent by Mr. S. Mortimer, Rowledge, Farnham, were superb. The flowers were of good size and form and splendidly coloured. Mr. Mortimer's Sbow and Fancy Dahlias were also magnificent. In each section many of the newest varieties were staged. Mr. J. Walker, Thame, staged fine collections of Sbow, Fancy and Cactus Dahlias comprising many well-known varieties. Messrs. J. Cheal and Sons, Crawley, exhibited Cactus, Pompon and single Dahlias.

Orchid Committee.—Present: H. J. Veitch, Esq. (in the chair); with Messrs. J. O'Brien, H. M. Pollett, F Sander, J. G. Fowler, T. Statter, W. H. Protheroe, H. J. Chapman, W. H. Wbite, J. Jacques, E. Hill. C. Winn, W. Cobb, S. Courtauld, and A. H. Smee.

Messrs. F. Sander & Co., St. Albans, sent a few Orchids, comprising Sobralias and Odontoglossums. Mr. W. H. Wbite, Orchid grower to Sir Trevor Lawrence, Bart., staged Platyclinus filiformis, Eulophia guineënsis, Masdevallia refracta purpurata and Nanodes Mathewsi, while Messrs. J. Veitch & Sons, Ltd., also exbibited a few Orchids. Of these, Odontoglossum Pescatorei Harrisianum was the most conspicuous. Mr. W. A. Young, Orchid grower to Sir F. Wigan, East Sheen, sent a few Orchid flowers.

Certificates and Awards of Merit.

Calceolaria alba (J.T. Bennett Poë).—The fine foliage and pure white flowers have a very pleasing appearance. Tbe plant is about 18 inches high (first-class certificate).

Crinum Powelli album (W. Bain).—A beautiful pure white form of the type (first-class certificate).

Dahlia Daffodil (J. Stredwick).—A delicate primrose Cactus variety of much beauty (award of merit).

Dahlia Miss Agnes Box (J. Stredwick) —A handsome Cactus Dahlia. The colour is glowing crimson (award of merit).

Gladiolus Countess Amy (Kelway & Son).—A lovely variety. The colour is soft rosy purple with a wbite throat (award of merit).

Gladiolus Mike Lambourne (Kelway & Son).—Rich, deep, velvety crimson is tbe colour of this variety. The flowers are of fine shape (award of merit).

Gladiolus Countess of Leieester (Kelway & Son).—A large flower. The ground colour is wbite with rose and purple markings (award of merit).

Hollyhock Leander (Webb & Brand) —A double variety of splendid form. The colour is very pale apricot (award of merit).

Lælio-Cattleya elegans Schröderiana (E. Asbworth).—A deeply coloured variety, with flowers of beautiful shape (award of merit).

Nymphea Marliacea flammosa (J. T. Bennett Poë).—A superb variety; the colour is deep blood red (first-class certificate).

Odontoglossum Peseatorei Harrisianum (J. Veitch & Sons, Ltd.).—A chaste variety. Tbe white petals are spotted with purple, as are the delicately flusbed sepals (award of merit).

Phlox Eugène Danzanvilliers (Kelway & Son).—A pale lilac variety of great beauty (award of merit).

Rudbeckia laeinata fl.-pl. Golden Glow (M. Prichard) —A handsome double yellow flowered variety that should become popular (award of merit).

Verbena Tresserve (J. T. Bennett-Poë).—A beautiful Verbena. The colour is rich rose (award of merit).

CHISWICK.—August 5th.

There was an unusually large attendance of members of the Committee at tbis meeting, including Mr. P. Crowley (Chairman), the Rev. W. Wilks (Secretary), and Messrs. Balderson, J. Smitb, W. Pope, G. Wythes, A. H. Pearson, J. Willard, A. F. Barron, A. Dean, G. W. Cummins, G. Bunyard, W. Farr, J. Cheal, G. Reynolds, W. Bates, and T. F. Rivers.

Early and second early Potatoes were first examined, roots of forty varieties, old and new, being lifted. None displayed any remarkable features, indeed as Potatoes now go were generally commonplace. Samples of seven that seemed to be the most satisfactory were selected for cooking, and of these only one, Sutton's Harbinger, an early flattish white round, was acceptable, getting an award of merit. Generally the tubers were unripe: Asbleafs, of which several were grown, were small and unsatisfactory. Very little disease was in evidence, but no doubt should heavy rains come, it will be found in the Chiswick trials, as the soil is so very porous. Some of those lifted will have to be seen again.

A couple of Vegetable Marrows from Constantinople were also seen, one a small white round, not nearly so good as Pen-y-byd, and the other a half long white of no value as compared with our own varieties. In these, as in Potatoes, it is very evident something really remarkable is needed to justify awards of high nature, average quality now being so good. The attention of the Committee was also drawn to numerous neat plants, some 12 inches in height, of a variety of Aubergine, the seed of wbich was sent by Dr. Bonavia as a Marrow Aubergine. The fruits closely resembled tbose of the old purple Egg Plant, rather long in form. The plant had been well grown. No award was made.

INULA GLANDULOSA.

This is a general favourite amongst the stronger growing herbaceous plants suitable for our trying seasons, and yet it is remarkable how seldom we see it as it ought to be. We have been told it was difficult to cultivate, but this we believe to be more a question of position than any fastidiousness on the part of the plant itself. Where the soil is light, sandy, and consequently very hot and dry during summer, Inula glandulosa will require a perfectly shady spot; indeed, the plant is always more robust and free-flowering if planted on a north exposure, where the sun's influence is hardly ever felt. In localities, however, where the soil is stiff and clayey it may be best to plant in full exposure, the main essential being a cool medium for the roots.

It increases very rapidly by offsets, by which means it may be propagated to almost any extent, lifting and dividing the plants in autumn, firming the soil well about the roots when replanting. The accompanying woodcut (fig. 22) gives a good idea of the size of the flowers, the numerous ray florets being cut up into narrow strips, deep orange-coloured, and surrounded by a peculiar brown hairy involucre. As a border plant it is amongst the finest for summer display, the blooms lasting a considerable time in perfection. It is a native of the Caucasus.—M.

HORTICULTURAL SHOWS.

ACOCK'S GREEN.—July 3rd and 4th.

The seventh annual Show and Fête of the Acock's Green and District Society was held on the above dates in a large and suitable field at Acock's Green. This comparatively young Society and its annual Show continue to increase both in popular estimation and extent of tbe exhibition, and in proof of the latter it may be stated tbat the number of entries on the recent occasion was the largest yet experienced, namely 1257, as compared with 1111 last year.

The most attractive feature was undoubtedly the collection of groups of miscellaneous plants, arranged for effect, amongst which the first-prize exhibit, arranged by Mr. Macdonald, gardener to G. H. Kenrick, Esq., Wbetstone, Edgbaston, excited universal admiration. In form it was a departure. The space was not to exceed 18 feet by 9 feet. The effective and gracefully arranged background was composed of a tall plant of Cocos formosum, and this was supported on either hand by Arecas, with three Humeas and slender richly coloured Crotons. The centrepiece was constructed of corktree bark. At each of the two front corners was a bark-constructed mound, containing an elegant Palm, draped with creeping plants and graceful Crotons. The front centrepiece was composed of Orchids, while the centre portion of the group formed a dell, tastefully clothed with Ferns, ornamental foliaged plants, and dwarf Ixoras. Altogether the effect was charming. Mr. E. J. Mustin, gardener to A. F. Bird, Esq., Acock's Green, was second; and Mr. A. Cryer, gardener to J. A. Kenrick, Esq., Edgbaston, third. Mr. L. Fewkes, gardener to T. Clayton, Esq., was awarded an extra prize for a meritorious group.

Specimen stove and greenhouse plants were fairly represented. In the class for six plants Mr. L. Fewkes was accorded the first prize, his best specimens being Croton Queen Victoria, Clerodendron Balfouri, and Ixora Dixiana. The second position fell to Mr. Macdonald, and the third to Mr. A. Cryer. Exotic Ferns formed a considerable and refreshing feature amidst the large display of floral colouration, and the first prize was accorded to Mr. L. Fewkes for a collection of six fine and healthy plants; the second and third positions being placed to the credit of Mr. E. J. Mustin and Mr. Macdonald respectively. Large Palms helped to lend grace, Mr. L. Fewkes again coming to the fore, followed by Mr. Macdonald and Mr. Thos. Kemp, gardener to G. E. Wright, Esq. Begonias were never better represented at Acock's Green than in the present show. Mr. W. S. Eborall, gardener to Samuel Issett, Esq., took the first prize for six plants, closely followed by Mr. Macdonald. Mr. Eborall also contribnted a meritorious group of single and double varieties, raised by himself from seed. The collection was worthily awarded an extra prize.

A notable feature was a fine array of Gloxinias, and for eight plants, Mr. R. Keeling, gardener to H. Pinnell, Esq., was easily first. Mr. H. Turner, gardener to W. G. Holder, Esq., took the second prize. Zonal Pelargoniums are also always well shown here, and Mr. J. Freeman, gardener to Zaccheus Walker, Esq., was awarded first honours for a fine group of six plants; the second and third prizes being secured by Mr. R. Llewellin and Mr. W. S. Eborall, respectively. The cut flower classes were fine, and most effectively arranged. For a collection of hardy herbaceous or perennial flowers Mr. Walter B. Child was first, and Mr.

John Freeman, second. The tropical temperature which prevailed during the two days of the exhibition quickly placed such as Roses, Dahlias (single), and other cut flowers, including bouquets, *hors de combat*. Carnations and Picotees withstood the ordeal very well, as also did the Sweet Peas. Roses were sparsely shown, and Messrs Perkins & Sons, Coventry, were awarded the first prizes for twenty-four and twelve blooms respectively for medium specimens. Carnations and Picotees were also a small class. For twelve blooms Mr. H. G. Owen was placed first, and Mr. Macdonald, second. For twelve Cactus Dahlias the first prize was taken by Mr. Thos. Perry, gardener to A. H. Foster, Esq., and the second fell to Mr. F. C. Brooks, gardener to F. Ryland, Esq.

The prizes for hardy annuals were accorded to Mr. E. Stukely and Mr. W. B. Child respectively. Stocks were abundantly shown. For twelve in pots the first prize was accorded to Mr. Thos. Needham, gardener to Mrs. Layton, Oakfield, and the second to Mr. Walter Holloway, gardener to A. Waterhouse, Esq. Perennial Phloxes were well shown by Councillor W. Waters and Mr. A. H. Foster. Very fine Gaillardias came from Mr. W. Dodd, gardener to H. H. Hartshorne, Esq., Councillor W. Waters, and others. Sweet Peas were extensively shown, the chief exhibitors of which were Mr. E. Stukely and Mr. John Stanley.

Mr. W. Sydenham, Tamworth, contributed an excellent display of Violas (not for competition) staged for effect. The collection contained many of the best and newest varieties extant. Messrs. Kelway & Son, Langport, were awarded a first-class certificate of merit for a fine display of Gladioli. Messrs. Thomson & Sons, Birmingham, exhibited pot plants and collections of Carnations and Picotees, for which a silver medal was awarded. Messrs. Pope & Son sent Cactus Dahlias.

Fruit was very well shown, Mr. J. May, gardener to G. Edmondson, Esq., secured the first prize for a fine collection of Grapes, Peaches, Cherries, Plums, and Apricots; the second prize going to Mr. Thomas Kemp, gardener to G. E. Wright, Esq. For two bunches of black Grapes Mr. H. Dix, gardener to A. Lovekin, Esq., was awarded first; and Mr. T. O. Bagg, gardener to W. E. Perks, Esq, second. For two bunches of white Grapes Mr. J. May was awarded the first prize for excellent Muscat of Alexandria; the second prize going to Mr. H. Dix.

Vegetables were, as usual, numerously and well shown in all the classes, and the liberal prizes offered by Messrs. Sydenham, Thomson and Sons, Webb & Sons, and others were keenly contested for. Praise must be accorded to Mr. Walter B. Child (the energetic Secretary) and his colleagues for the very efficient arrangements.

THE MIDLAND CARNATION AND PICOTEE.

AUGUST 5TH AND 6TH.

THE seventh annual Show of the Midland Carnation and Picotee Society was held at the Botanical Gardens, Edgbaston, as usual. In point of extent the exhibition was undoubtedly the largest yet held, the number of entries being seventy-three. The heat was almost tropical on the first day. The quality of the blooms was a distinct advance over previous occasions. Sweet Peas were a feature, while collections of herbaceous flowers, Begonias, miscellaneous plants, and Ferns lent much effect to the scene. A notable feature was the competition for the "Charles Turner Memorial," value 10 guineas, to be competed for by amateurs, to be won two years in succession, or three times in all. It was taken by Mr. A. W. Jones (57 points), and the handsome trophy now becomes his own property. The Society's "challenge cup," value 10 guineas, was won by Mr. Robert Sydenham (74 points), and it now becomes his own property. This gentleman announced that as he had won the cup outright he would next year present another one to the Society, and not to compete for it himself. The following are among the chief awards:—

For twelve flakes or bizarres Mr. J. Edwards, Manchester, was awarded the first prize for grand blooms of J. S. Hedderly, James Douglas, and Robert Houlgrave, Sportsman, Mrs. Rowan, Sarah Payne, Master Fred, Ellis Crossley, Lord Salisbury, Mrs. Gunn, Joseph Lakin, and Ed. Rowan; and Mr. Tom Lord was second. For six ditto, Mr. C. F. Thurstan, Wolverhampton, secured first honours with a good stand, the second prize falling to Mr. A. R. Brown, Handsworth.

For twelve white-ground Picotees Mr. Robert Sydenham was accorded the premier position for a superior board, containing Ganymede (very fine), Mrs. Payne, Clio, Jessie, Pride of Leyton, Muriel, Esther, Favourite, Thos Williams, Little Phil, Somerhill, and Scarlet Queen; the second prize going to Mr. T. Lord, and the third and fourth to Messrs. Thomson & Son, Birmingham, and Mr. A. R. Brown respectively. For six ditto, Mr. A. W. Jones, Handsworth, claimed the first prize; the second prize went to Mr. F. W. Goodfellow, Walsall.

For twelve yellow ground or Fancy Carnations or Picotees, dissimilar, Mr. A. W. Jones was awarded first honours for a grand exhibit, consisting of Voltaire (very fine), The Gift, Ladas, Golden Eagle, Xerxes, Mrs. Robert Sydenham, Harlequin, Mrs. Nigel, The Dey, Cardinal Wolsey, and two others; whilst Mr. R. Sydenham was a close second with fine blooms. The third prize was taken by Mr. A. R. Brown. For six ditto prizes fell to Messrs. C. F. Thurstan, C. Cartwright, Sellyoak, and R. Sydenham in the order named. For six yellow ground Picotees the first prize was secured by Mr. A. W. Jones, Messrs. Thomson & Co. being second, and Mr. A. R. Brown third.

For twelve selfs, dissimilar, Mr. A. R. Brown was victorious with Little John (fine), Britannia, Mrs. E. Hambro, Her Grace, Hayes Scarlet, Germania, Royal Purple, Nabob, Topsy, Lady Mary Currie, Bendigo, and Braw Lass; Mr. R. Sydenham coming an excellent second, and Messrs. Thomson & Co. third. For six selfs Mr. A. W. Jones was first, Mr. C. F. Thurstan second position, and Mr. J. Walker, Thame, third.

In the class for twelve selfs, Fancy or yellow grounds, to be staged in a space not exceeding 20 inches square, to be dressed as little as possible, Carnation foliage and buds allowed, the first prize was awarded to Messrs. Thomson & Co., the second to Mr. A. W. Jones, and the third to Mr. Blick, gardener to Martin R. Smith, Esq. For six ditto, the first prize was placed to the credit of Mr. Geo. Chaundy, Oxford, and the second to Mr. R. C. Cartwright. For six flakes or bizarres and six Picotees, Mr. R. Sydenham and Mr. J. Edwards were first and second respectively. For three ditto, the first position was accorded to Mr. D. Walker, and the second to Mr. W. Bellamy, Harborne. For six Carnations or Picotees (amateurs), Mr. G. F. Spittle, Edgbaston, was placed first, Mr. H. Hunter, Walsall, second, and Mr. F. Steele third.

FIG. 22.—INULA GLANDULOSA.

In the class for single bloom scarlet bizarres, Mr. R. Sydenham was first with a splendid bloom of Robert Lord, and Messrs. Thomson & Co. second with a fine example of Robert Houlgrave. Crimson Bizarre.—Mr. J. Edwards was first and second with fine blooms of J. S. Hedderly. Pink and Purple Bizarres.—Mr. A. R. Brown occupied the premier position with Sarah Payne, and Mr. R. Sydenham the second. Scarlet Flakes.—The first prize was secured by Mr. D. Walker for a very good edged red, the second by Mr. J. Edwards with Sportsman, and the third by Mr. R. Sydenham for the same variety. Rose Flakes.—Mr. J. Whitham secured the first prize with a new seedling and Mr. T. Lord the second, whilst Mr. Whitham was placed third. Purple Flakes.—Here Mr. R. Sydenham secured the first and second positions for fine blooms of Gordon Lewis, and Mr. A. Bellamy the third prize for a good bloom of the same variety.

Heavy Red-edged Picotees.—Mr. R. Sydenham claimed first honours for a fine bloom of Ganymede, the second by Mr. A. R. Brown, with a good Ne Plus Ultra, and Mr. C. Head was placed third with John Smith. Light Red-edged.—The first prize went to Mr. A. W. Jones for Thos. Williams, the second prize to Mr. R. Sydenham for ditto, and

the third to Mr. A. W. Jones for Mr. Gorton. Heavy Purple-edged.—The first prize was won by Mr. A R Brown for Mrs. Oppenshaw, and the second and third to Mr. R. Sydenham with Muriel. Light Purple-edged.—Mr. A. R. Brown was first and second for Pride of Leyton, and Mr. C. F. Thurston third. Heavy Rose-edged.—The first prize fell to Mr. A. W. Jones for Madeline, the second to Mr. T. Lord for Lady Louisa, and Messrs. Thomson & Co. were third for Little Phil. Heavy Scarlet-edged.—Mr. C. Head was placed first with Mrs. Sharp, Mr. R. Sydenham second with Scarlet Queen, and Mr. A. W. Jones third for Mrs. Sharp. Light Rose or Scarlet-edged.—The first prize was taken by Mr. T. Lord with Favourite, the second by Messrs. Thomson & Co., and the third by Mr. R. Sydenham with the same variety.

White or Flesh Selfs.—The first and second prizes were secured by Mr. C. F. Thurstan for good blooms of Mrs. Eric Hambro, and the third by Mr. J. Edmunds with a very good Mrs. Lee. Yellow, Buff, or Terra-cotta Selfs.—Here Mr. A. R. Brown had the first and second prizes for splendid blooms of Germania, whilst the third and fourth prizes went to Mr. C. F. Thurstan and Mr. R. Sydenham respectively with the same variety. Pink, Rose, or Scarlet Selfs.—In this class Mr. T. Low took the first three prizes with fine blooms of Mr. T. Helliwell, a seedling, and another example of the first named. Dark Selfs.—The first prize fell to Mr. A. R. Brown for an excellent Topsy, the second to Mr. J. Brocklebank with Negress, and the third to Messrs. Thomson & Co. for Pilgrim.

Yellow-ground Picotees.—Here Mr. R. Sydenham claimed first honours for a grand bloom of Mrs. R. Sydenham, the second position falling to Mr. F. W. Goodfellow, and the third to Mr. Sydenham with the same variety. Fancy Carnations or Picotees.—Mr. A. W. Jones secured the first and second prizes with fine blooms of Voltaire, and Mr. R. Sydenham the third for a good example of Monarch. Mr. A. W. Jones took the first and second prizes for Fancy Carnations, and border Carnations and Picotees were well exhibited by Messrs G. Lindop, Langport; J. Walker, Thame; H. W. Weguelin, Torquay; W. Barsby, Leicester; C. Blick, and Thomson & Co.

For six Carnations in pots Messrs. Thomson & Co. and Mr. R. Sydenham were placed first and second respectively, being the only exhibitors. For shower bouquets the respective winners were Mr. C. Blick, Mr. W. F. Gunn, Olton, and Miss B. Mayell, Acock's Green. Sprays were also very good, the first prize falling to Mr. C. Blick, the second to Messrs. R. W. Proctor & Son, Chesterfield, and the third to Messrs. Thomson & Co. Three buttonholes.—Mr. R Sydenham took the first, and Mrs. Lovatt, Newport, Salop, the second prizes, with Mr. R. C. Cartwright in the third place. For table decorations the first prize was worthily accorded to Miss B. Mayell, second to Miss Swinden, Birmingham, and the third to Miss Kemp, Edgbaston, and an extra prize to Mrs. Lovatt.

The following awards were made for non-competitive exhibits:—Silver-gilt medal to Mr. J. H. White, Worcester, for collection of herbaceous plants; silver medals to Messrs. Hewitt & Co., herbaceous and other plants; Mr. B. R. Davis, Yeovil, for double Begonias; Mr. H. Eckford, for Sweet Peas; and Messrs. W. & J. Birkenhead, Sale, for Ferns; bronze medal to Mr. W. F. Gunn, for hardy border flowers. First-class certificates were awarded to Mr. J. Whitham for Picotee Mary Ann; to Mr. W. Kenyon for Picotee Harry Kenyon; to Mr. T. Lord for Picotee Grace Ward; and to Mr. Tom Lord for a rose-flake Carnation, Mr. Tom Lord.

HARBORNE.

Held in the picturesquely situated vicarage field, than which it would be difficult to find a more appropriate site, the Show was one of the best ever held by the Society since its inception thirty-six years ago. The centre of attraction were the groups of plants arranged for effect, of which there were five. The first prize was awarded to Mr. S. Gibbs, gardener to J. B. Manley, Esq., Harborne, the plants consisting principally of Palms, richly coloured Crotons, Dracænas, Liliums, Streptocarpus, Gloxinias, Ixoras, with, in the centre, a well-flowered plant of Romneya Coulteri (Californian Poppy). Second honours fell to Mr. Oliver Brasier, gardener to Lady Martineau, Edgbaston, the group having a more imposing effect at a distance by virtue of the artistic disposal of taller elegant plants and the greater profusion of those with white flowers, such as Lilies and Francoas. The third prize fell to Mr. A. Cryer, gardener to J. A. Kendrick, Esq., Edgbaston, for a very good group; and the fourth prize to Mr. Batchelor, gardener to Mrs. Armfield, Edgbaston.

The gigantic specimen plants which have upon previous occasions characterised the Harborne shows had an imposing effect. Mr. Maldrem, gardener to Geo. Cadbury, Esq., Northfield, as on the last occasion, took first honours with grand specimens of Crotons, Palms, Statice profusa, Stephanotis floribunda, Dipladenia amabilis, and Allamanda Hendersoni. Mr. Brasier was a close second with also very fine and healthy specimens, similar in variety to the former. Fuchsias (six varieties)—which have for so many years been a feature here—were exhibited in full size and form by Mr. S. Gibbs, to whom the first prize was worthily accorded. For three varieties the successful contestants were Mr. Maldrem and Mr. Brasier. For six foliage plants for table decoration Mr. Brasier and Mr. Cryer were awarded the first and second prizes. Exotic Ferns were exceedingly well shown by Mr. Maldrem, Mr. Batchelor, and Mr. Brasier. For six varieties of stove or greenhouse cut flowers Messrs. Maldrem and Brasier were respectively to the fore. Roses, owing to the lateness and climatic conditions of the season, were not a strong class. The first prize fell to Mr. W. Charlton, the second to Mr. Halse, and the third to Mr. Geo. Newell, gardener to C. B. Cave, Esq., Harborne.

Fruit and vegetables were very well represented, the black Grapes staged by Mr. S. Gibbs, Mr. A. H. Griffiths, Edgbaston, and Mrs. Armfield were creditable examples; whilst white Grapes, shown by Mr. Griffiths and Mr. Brasier, were meritorious. Peaches were unusually good. For a dish of nine fruits Mr. Griffiths was placed first, and Mr. Cooper (gardener, Mr. C. H. Field), Edgbaston, with a dish of highly coloured Hale's Early, was a very close second. Mr. A. H. Griffiths was worthily awarded the first prize for a collection of six dishes of fruit. There was keen competition in the classes for collections of vegetables offered by several well-known firms, including Messrs. Sutton & Sons, Reading, Messrs. Webb & Sons, Wordsley, Messrs. Thomson, and Mr. Robert Sydenham. The produce was excellent.

A meed of praise must also be accorded to Mr. C. R. Bick, gardener to Walter Chamberlain, Esq., Harborne Hall, for a miscellaneous collection of exhibits including a beautiful dish of Tomatoes, a collection of large Gooseberries, Carnations and single Dahlias, for which special certificates were worthily bestowed by the judges. Certificates of merit were also awarded to Mr. W. Charlton for a splendid collection of hardy perennial flowers, and to Mr. Geo. Newell for Carnations and Picotees.

THE BEDDINGTON, CARSHALTON, AND WALLINGTON HORTICULTURAL SOCIETY.

This Surrey Society, which A. H. Smee, Esq., C.C., has done so much to make prosperous, and of which his gardener, Mr. G. W. Cummins, is the efficient Honorary Secretary, has made remarkable progress during recent years. The annual show held in Beddington Park, near Croydon, on Bank Holiday, is said to have been attended by 10,000 people. The chief interest usually centres in the class for a collection of nine kinds of vegetables, in which the £5 provided is divided among the six best exhibitors proportionately with the points of merit awarded to their several products. In the present instance the result was as follows:—

Collection of Vegetables.

1st,	Mr. H. Stevens	59	points ...	value	19s. 8d.
2nd,	Mr. H. Shoebridge ...	56	,, ...	,,	18s. 8d.
3rd,	Mr. Harvey Hopkins ...	51½	,, ...	,,	17s. 2d.
4th,	Mr. J. Cupps	48½	,, ...	,,	16s. 2d.
5th,	Mr. O. McRae	46½	,, ...	,,	15s. 5d.
6th,	Mr. W. Henn	39	,, ...	,,	12s. 11d.
					£5 0 0

This system originated at Carshalton some years ago, and is considered so equitable that there is no desire to alter it. The competition is open to amateurs, gardeners, and allotment holders. If the sum had been divided into three prizes of £3, £2, and £1 the three first named exhibitors would have secured the whole of it with an aggregate of 166½ points, while the three others would have received nothing for 134 points, a difference of only 32½ points. But valuing in this competition a point at 4d., each of the six exhibitors had his share. The two first exhibitors are gardeners, the other four allotment holders, Mr. Harvey Hopkins being again the champion of the county with 170 marks of merit for the cultural excellence displayed in his plot.

The system of judging above indicated could not, for obvious reasons, be carried out throughout an exhibition, but one or two classes thus treated creates considerable interest among exhibitors and visitors.

In the county competition Mr. G. W. Cummins secured the chief prize for a beautiful group of plants, for which was also granted the silver medal as the most meritorious exhibit in the Show. Fruit and vegetables were admirably represented; but decorated tables, as at many shows, were weak owing to the formal stereotyped methods adopted, which characterise so many of these floral arrangements.

A conference tent was provided, and addresses given on gardening to a large and appreciative audience. The diligent Assistant Hon. Secretary, Mr. Toogood, had a severe sunstroke on the ground, from which he was removed in Mr. Smee's carriage, and was long in recovering.

KING'S NORTON.

The fourteenth annual Show of this Society was held in the charming grounds of E. G. Bellis, Esq., King's Norton, and whose gardener proved to be one of the foremost prizetakers in the exhibition tents, his leading efforts being an attractive group of miscellaneous plants arranged for effect. The second honours fell to A. H. Wiggin, Esq., whose gardener, Mr. A. Silk, must be credited with considerable taste in the arrangement of plants. The third prize was taken by Mr. J. Palmer, gardener to J. Earle, Esq., King's Norton, for an elegant composition, which but for a certain lack of colour would have occupied a higher position—perhaps the highest. Specimens of stove and greenhouse plants were creditably shown, but do not call for special notification, excepting the first prize collection of nine plants by Mr. Palmer, which included a very fine specimen of an Ixora and an Allamanda, the second prize being taken by Mr. T. Day, gardener to E. J. Thackeray, Esq. In the smaller class, Mr. D. Eaton, gardener to W. Tallis, Esq., was the most successful exhibitor, with very good examples.

Mr. Bellis and Mr. S. Moss, gardener to W. Walker, Esq., secured the prizes for Palms; Mr. Wiggins; Mr. T. Farmer, gardener to W. H. Wynn, Esq.; and Mr. T. Day for Begonias, which were very good; Mr. C. Silk and Mr. J. Palmer for Caladiums; Mr. J. Palmer and Mr. Bellis's gardener for very good Coleuses. Roses were fairly good for the season, and Mr. G. Winchester, gardener to Fred Impey, Esq., secured the first

prize; Mr. C. Silk being second. A notable feature was the display of table decorations by ladies, baskets of flowers, and epergnes, Mrs. Theodore Pritchett, Mrs. J. G. Pritchett, Miss Wolsley, and Miss Ellis distinguishing themselves in these classes.

Fruit and vegetables were well shown. The Black Hamburgh and Muscat of Alexandria Grapes, by Mr. W. Abbey, gardener to E. Chatrain, Esq., Northfield, being very creditable examples. Mr. E. Winchester was placed second with also good bunches. Mr. T. Cox, gardener to J. B. Moseley, was the most successful exhibitor in the Melon class, and Mr. T. Farmer had the best Peaches. Mr. E. Winchester, gardener to F. Impey, Esq., won first honours with an excellent collection of vegetables.

There was keen competition for the substantial prizes offered for vegetables by Messrs. Sutton & Sons; also for those by Messrs. Simpson & Sons. Messrs. Pope & Sons were accorded a silver medal for a group of plants, and Messrs. Ellis and Johnson a bronze medal for a collection of miscellaneous plants.

THE YOUNG GARDENERS' DOMAIN.

Strawberries.

Our soil is a light sandy loam, while our plants are mostly three years old. The plantations are open and sheltered on all sides, and receive due attention. The earliest fruits were gathered this year from John Ruskin. These were gathered about Jubilee day. Royal Sovereign followed three days later. At an exhibition of Scotch-grown Strawberries, under the auspices of the Scottish Horticultural Association, Mr. Dunn, Dalkeith Palace, characterising the varieties shown, stated that John Ruskin is much finer and better treated as an annual. No doubt, but with the enormous demand upon us for Strawberries we believe in quantity more than in purity of quality, especially in our restricted space. We have a number of fine young plants which gave us a fair show of fruit, but I am bound to say of no superior quality to these three years old. John Ruskin, too, has borne prodigiously. For weeks and weeks past we have had laden trusses, fruit of moderate size, though not so firm fleshed or well flavoured as we wish. Royal Sovereign, like all large Strawberries, does best on a light or medium soil. At Dalkeith Palace this variety was inferior till warm weather set in. With us it is good.

Garibaldi has a heavy crop of small sized fruit, but the flavour is next to perfection. Evidently younger plants and more liberal nourishment would aid it on our soil. During the recent rains its flavour, to my taste, never altered, while better ones became watery. Would "Pomona," or the Editor, state why the Italian hero's name is superseded by the French Countess's? Our Scotch authorities hold there is no difference between the Vicomtesse Héricart de Thury of Englishmen and the Garibaldi of Scotch growers, and prefer the simpler name. "Pomona" saves me describing Scarlet Queen; it has yielded a good crop, only it shrivelled worse after setting than the others during the early dry weather.

"British Queen," said Mr. Dunn, "is the type of Strawberry," I suppose his ideal type, and urges all to judge new varieties from and by it; whoever raises a better one must be in the circle of perfection. To this Mr. D. T. Fish gave an audible "hear, hear." It has done good service. Duke of Edinburgh is a worthy Scotch-raised Strawberry of large size, good flavour, and fine shape. I have seen it produce well on what we termed a gravelly soil. On the same soil Land o' Scot, Sir J. Paxton, and Laxton's Noble were grown and favoured; the latter was very firm fleshed. Auguste Nicaise has not large fruit with us, the appearance and flavour, however, are reciprocative. Lord Suffield with light foliage of medium strength has a poor crop and unpleasant flavour. Mr. Dunn pronounced it coarse. Lord Lyon, thick black leathery foliage, very strong and dense, with poor shrivelled trusses newly set. We have determined to give these two Lords a holiday in the "Home of Refuse!"

Soon after the fruit is gathered we mulch all with short manure, and fork this into the soil just before growth starts in spring. The soil drying speedily, we give liquid manure occasionally and frequently use the hose and spray.—A Young Scot.

[Vicomtesse Héricart de Thury is the proper name of the hardy and useful French Strawberry to which it is applied. It is the first recognised name, and priority is the determining factor in all such cases. Garibaldi, as may be seen in the late Dr. Hogg's "Fruit Manual," is a synonym.]

Cultivation of Dracænas.

Dracænas are very useful plants, both for beautifying the stove and conservatories, and for house and table decoration. A stove temperature, where they can obtain plenty of heat and moisture, is the most suitable for the coloured-leaved varieties, and a cooler temperature for the green section. Propagation may be effected by several different methods. I will first describe what I consider the most effective process for plants that have lost their bottom leaves, and have become what is termed "leggy." First, take a pot of a size according to the top of the plant that is to be propagated, and break it in half. This may be done by first giving the pot a few gentle taps with a hammer along the place required for it to break, gradually hitting harder, especially at the edges of the bottom, until it breaks. If the pots are thin and sound previous to attempting to break them an expert hand will spoil very few. The stem of the plant should then be cut upwards with a sharp knife for about 2 inches, gradually working into the centre, so as to form a tongue; and before the knife is withdrawn insert a thin piece of charcoal to keep the cut open. Insert two stakes in the pot opposite each other, and place the halves of the broken pot one on each side of the incision, fastening them securely together, and also to the stakes, with wire. Two short pieces of wood placed under the pot, one on each side of the stem, will help to keep the halves from slipping down. It will be necessary for two pairs of hands to be available at this stage, one to hold the top of the plant, to prevent it overbalancing and breaking off, whilst the other fixes the stakes.

When the halves of the pot are made secure in their position place a small quantity of charcoal in the spliced pot, and round the incision a compost of fibrous loam and peat, broken into small lumps, with a liberal addition of silver sand. When signs of roots are apparent cut the stem half way through just below the pot, and in a week or so the top may be taken off and placed in a larger sized pot.

Another method of rooting the tops is after the stem has been cut, and a piece of charcoal inserted, place some sphagnum moss round the incision, fastening it with twine or fine wire. If this is kept moist the stem will soon emit roots into it. When propagated in this way the plants when taken off are placed in small pots, and afterwards in others of a larger size. Another method of propagation is by "topping"—that is, the top of the plant is cut off, inserted in a small pot, and placed in a propagating frame.

The old stems, after the tops have been removed, may be allowed to break, and the growths, when large enough, inserted singly in small pots as cuttings; or a stem may be cut into pieces 1 or 2 inches long, and placed lengthwise in pans, giving them a light covering of soil. If these are placed in a gentle bottom heat they will soon start into growth at the joints. Dracænas may also be propagated by taking off pieces of the thick, tuberous-looking roots, and placing them in pots.

The most suitable compost for the final potting is fibrous loam and peat in equal parts broken into small lumps with a small quantity of charcoal, with silver sand and bonemeal, or any approved artificial manure added. Never allow the plants to get dry, and when the pots are filled with roots liquid manure may be given them, also an occasional top-dressing with artificial manure. During the spring and summer months syringing will be necessary, but it must be discontinued during the winter, for at this period water lodging in the axils is apt to cause the leaves to damp off. The plants also require shading from the bright sun.

Varieties.—These are numerous and vary both in height and character of growth. For tall specimens Shepherdi, Baptisi, nigro-rubra, Massangeana and amabilis rank among the best; and for decorative purposes Goldieana, terminalis, metallica, magnifica, Lindeni, Guilfoylei, Banksi, and superba. The best of the green varieties are gracilis, indivisa, i. Veitchi, australis, and stricta congesta. The pretty little D. Sanderiana, with its green and white foliage, is useful as an edging plant for groups, and for this purpose 3½-inch pots are large enough for the plants.

Enemies.—Green fly attacks the points of the young leaves and may be removed by sponging with an insecticide or fumigating. Thrips are the worst enemies the Dracæna has to contend with, and when plants are attacked with these they should be dipped or sponged with strong tobacco water.—Elveden.

HARDY FRUIT GARDEN.

Planting Strawberries.—The earliest raised plants rooted in pots or turves may now be planted permanently on suitably prepared and liberally enriched ground. The plants should be well furnished with roots, and have bold healthy crowns. Previous to planting thoroughly moisten the ball of roots. Should the weather be extremely dry each plant must be copiously watered when inserted, forming a basin round it and filling with water, after which cover in with dry soil.

Moist, dull weather is really the best time to plant, but with care in affording moisture planting may be successfully carried out in the driest time, providing the plants are strong and vigorous and the roots adhere to balls of earth. Those rooted in pots or turves fully occupy the rooting medium, and are well equipped for making a start in the fresh soil. In inserting the plants form excavations, so that the roots are not cramped. Press the soil firmly about them, and water before finally filling in. In continued dry weather water frequently until fairly established.

Soil Preparation for Later Planting.—Later plantings of Strawberries may be carried out towards the end of present month, also in September. In the meantime prepare the soil by deeply digging or bastard trenching, adding liberally some rich substantial manure. By the time the plants are ready for insertion the soil will have become consolidated, and in excellent condition for their reception. Poor light soils must be liberally supplied with manure, worked well into the surface and lower layers. Heavy retentive soils naturally require well breaking up to a good depth rather than the addition of much manure.

Some light gritty material of an opening character proves of important service by improving the mechanical condition.

Trimming Strawberry Beds.—Frequent opportunities ought to be taken to cut out superfluous runners from all plants. Those from which new stock is not being cultivated may be entirely cleared of runners. Weeds also remove. Loosen the surface where hard. Excellent plants may be found rooted, or rooting, naturally into the soil of established beds. These, if wanted, can be preserved for shortly lifting and planting in a permanent bed. Superfluous growth surrounding and overcrowding them must be carefully removed. Beds left too long after fruiting before clearing become a mass of weeds and runners difficult to remove.

Summer Thinning and Regulating Fruit Trees.—At no season of the year can a better judgment be formed of the condition of fruit trees as regards the disposal of branches than during the season when the foliage is present. Overcrowding is unmistakeably shown by the interlacing of branches and the rank growth of shoots. Through this the sun cannot properly penetrate, nor air gain access, especially to the remote parts of the trees. Numbers of trees grown in a free unrestricted form, including tall and dwarf standards and open bushes, pay for a little attention at the present time. Thinning-out and regulating the branches is important. Dispose them in the best possible manner in order that they may receive the full benefit of the summer and autumn weather.

Pruning away branches in summer does no harm to the trees. Of course, very severe treatment may result in no apparent advantage for a time. Trees neglected for years cannot be otherwise than severely dealt with in attempting renovation. When attended to annually only a limited amount will be found necessary to remove at any one time. Cut out first the crossing and interlacing branches, then the useless interior spray or wood, which is usually shaded and weakened. All the wood intended for removal cut out entirely, close to older branches, avoiding shortening.

Gooseberries.—The same principles of thinning and regulating may be extended to Gooseberry bushes. A quantity of wood is produced during the growing season which renders the bushes overcrowded. Sucker growth from the base is prevalent on some, and this ought early to be dispensed with, low-lying branches near the soil cut out and shoots growing towards the centre. This preliminary treatment being completed, then give the bushes a general thinning wherever shoots are unduly crowded.

Black Currants.—Prune out the old bearing wood, which will leave room for the young strong growths produced during the current year to develop, these alone giving the best results.

Red Currants.—The main branches of Red, also White, Currants are each simple cordons extending from the base of bushes or from near the main stem. The summer growths are freely produced from the main branches. It is not usual to thin them out, but to shorten them at the third leaf in order to plump up their buds at the base. This ought to be done now if not previously carried out. Any old worn out branches may be cut out, and the nearest strong young growths from the base allowed to take their place.

FRUIT FORCING.

Peaches and Nectarines.—*Earliest Forced House.*—Trees started in December may be falling more or less, yet there must not be any lack of moisture at the roots, affording water and even liquid manure to weakly trees as necessary to maintain the soil in a moist but not saturated condition, excessive moisture and warm weather being apt to cause premature growth. It does not matter so much about rain, as with it the air is comparatively cool, and then has a beneficial and invigorating effect. As a safeguard against starting the blossom buds, allow such laterals as are green and unripe to remain as an outlet for any excess of sap, and they are equally effective in maintaining activity at the roots. Early forced trees, however, do not, as a rule, make strong growth, having generally a larger proportion of single fruit buds than trees grown under more favourable circumstances, triple buds not being nearly so frequent, hence in pruning it is not desirable to cut back next year's bearing wood unless of great length.

Very little pruning will be needed provided disbudding has been attended to, no more wood being trained in than is necessary to replace the bearing shoots of the current year, and to renew worn-out growths, as well as to provide for the extension of the trees. Trees that have long been subjected to early forcing seldom grow too vigorously, but not infrequently become so enfeebled as to need the removal of the weak growths, which, though plentifully furnished with blossom buds, are undesirable, from their affording much smaller fruit than is yielded by the moderately vigorous and well-ripened growths. Some trees, however, make too vigorous or long-jointed wood, pushing laterals difficult to restrain, if they do not frustrate the formation of fruit buds and interfere with an equal distribution of the sap. Any trees which grow too vigorously must be lifted, whilst those which show symptoms of weakness may have the old soil removed from amongst the roots, supplying fresh turfy loam, with about one-sixth of old mortar rubbish added. Give a good watering both to the lifted trees and to those that have had the soil renewed about the roots. These operations require to be performed as soon as the leaves are mature, and before they fall from the trees.

Succession Houses.—Cut out the shoots that have borne fruit unless required for extension, and where the growths are crowded thin the shoots. This will allow the foliage to be more readily cleansed by syringing, repeating that as necessary, it being important that the foliage be kept clean and healthy as long as possible. With free acess to light and air the buds will form perfectly, attention being given to a due supply of water at the roots. When the fruit is ripening a free circulation of air will enhance the quality, sufficient water only being given to the roots to prevent the foliage becoming limp, securing air moisture by an occasional damping of the paths and borders for the benefit of the foliage, also fruit, which in an arid atmosphere is liable to become mealy, whilst it ripens prematurely if the trees suffer from an insufficient supply of moisture in the soil. Ants in some cases are troublesome, eating into the choicest fruits. Wrapping a little cotton wool round the stems of the trees hinders their ascent, securing it with twine in the middle soaked in a saturated solution of camphor. Saucers sunk in the ground level with their edges and as near their haunts as possible, and pouring some treacle or syrup into each, attracts them from the fruit. It is a good plan to dip bits of dry sponge in treacle held tightly in the fingers, then release the pressure and get some of it into the sponge. When the ants are at these the bits of sponge can be dipped in boiling water for the destruction of the pests. Continue this for a time and there will soon be a difference.

Late Houses.—Attend to thinning and regulating the current year's growths, and if they are laid in thinner than is customary with trees in early houses the wood will have a better chance of ripening, and the leaves will assimilate more food, storing it in the bud and wood for the support of the blossoms and embryonic fruit in the coming season. Gross growths tend to the impoverishment of the weaker, appropriate an undue amount of sap, preventing an unequal distribution of the nutrition, and favour nothing but unfruitfulness and gumming. They must be stopped or removed altogether. Endeavour to secure an even balance of moderately vigorous short-jointed shoots, and to insure the wood ripening in cold districts ventilate freely in the early part of the day, allowing a good heat through the day from sun, closing in time to run up to 85° or 90°, for sun heat after evaporation has been going on for some time will not do any harm if only care is taken to admit a little air before nightfall to allow the pent up heat and moisture to escape and the gradual cooling down of the atmosphere, thereby securing rest. The early day and night ventilation tends to the solidification of the growth and its ripening. Keep the trees free from red spider by forcible syringings until the fruit gives indications of ripening. The borders must be well supplied with water or liquid manure, and be mulched about an inch thick with short, rather lumpy manure from the stables.

Vines.—*Early Houses.*—The earliest forced have the wood ripe and some of the leaves falling. Do not attempt to remove them forcibly nor cut the laterals close in, as that would probably cause the principal buds to start; therefore remove the laterals by degrees, and shorten some of the strong shoots, preserving, however, some growth, especially when the principal leaves are down, above the buds to which the Vines are to be pruned, deferring the final pruning until the early part of September. The old soil should then be removed from the surface of the border, forking some of it from amongst the roots, taking advantage of the opportunity to raise any that are deep and laying them in fresh material nearer the surface. Good calcareous loam is the most suitable, with an admixture of opening material, such as old mortar rubbish and charcoal. A little approved fertiliser is also an advantage. When the Vines are indifferent in health lifting may be carried out before the leaves fall then with a moderate watering the roots will push, especially adventitious ones, from near the collar into the new soil at once, and be in capital condition for starting when the time comes round. When lifting or renovating the border is delayed until the leaves are all down the trees do not start so freely, the break often being unsatisfactory.

Midseason Houses.—The Grapes upon the whole have been satisfactory as regards colour and bloom, and the season has favoured finish rather than size. Red spider in many cases has been very troublesome. Copious supplies of water through a light surface mulching of sweetened manure, along with fertilisers or liquid manure of a sustaining nature, with due atmospheric moisture, appear least favourable to its spread, and contribute to a satisfactory result in the crop. A good array of foliage fully exposed to light seems a delight of the Vine, as the wood is then stout, short-jointed, and the leaves thick and deep green in colour, the Grapes swell, and the buds are plumped for next year's bearing. Fire heat is often necessary to ripen midseason Grapes perfectly, but with ventilation day and night to insure a circulation of air it may often be dispensed with in warm weather. The nights, however, are now getting cold, and fire heat may be necessary, though a good rest at night aids Vines wonderfully that are carrying heavy crops of Grapes. Enough fire heat should be given to maintain the temperature at 70° to 75° by day and 60° to 65° at night, allowing 5° more for Muscats. Take care that moisture is not deposited on the berries of these during the night or in the morning for lack of early attention to ventilation, otherwise spot may be the consequence.

Late Houses.—Afford full supplies of water through a good surface mulching, sweetened horse droppings or stable litter freed of the straw answering well when not more than a couple of inches thick, continuing the supplies of nourishment until the Grapes are well advanced in colouring. Most late Grapes take a long time to perfect thoroughly, and some, particularly Mrs. Pince, even after appearing finished, are not so up to the shank. This is often a consequence of too short supplies of nourishment, and in some cases a consequence of too early stopping the supplies of food is manifest in the Grapes shrinking, as not unfrequently occurs with Muscats. All late Grapes require time. They ought now to be colouring, or advanced therein, and they must have a fair

amount of air moisture with a circulation of warm air constantly, in which they will attain fulness of berry and perfection of finish, diminishing the air moisture as the Grapes advance in colouring. Poverty of finish is the chief cause of Grapes shrivelling. Cracking results from a close atmosphere following a period of drought, or ventilating injudiciously. An arid atmosphere in the early stages of ripening renders Grapes liable to split when ripe, if, indeed, they ripen without cracking. Afford a temperature of 70° to 75° by day artificially, 80° to 90° with sun, and close sufficiently early to increase to 90° or 95°. When the sun is losing power put on enough top and bottom ventilation to insure a circulation of air, allow the temperature to gradually cool, which rests the Vines, and increase the ventilation early with the advancing temperature. The hot-water pipes should, if necessary, have a little warmth in them to prevent the night temperature falling below 65° at night. The laterals should be kept fairly well in hand, not allowing crowding, and keeping rather more foliage over black Grapes than white ones, which require more light as a rule to finish well.

PLANT HOUSES.

Erica hyemalis.—Do not crowd these too closely together, or the lower foliage will turn brown and eventually fall. If thoroughly hardened these plants are better standing on a bed of ashes outside in an open sunny position. Partially plunge the pots of the front row and the plants will afford sufficient shade to the others. Be careful they do not suffer by an insufficient supply of water. Keep the material moist on which they stand, and syringe the plants in the afternoon of dry days. Where they are protected in frames it is a good plan to raise these from the ground, so that a good circulation of air can play amongst the plants. The lights should be drawn off during the day.

Erica melanthera.—As these flower late they will now be in active growth, and should be kept in frames for some weeks. Encourage them to make their growth by closing the frame early in the afternoon. This species is benefited by this treatment, and is not liable to be attacked by mildew. Give plenty of air during the day, syringe morning and evening in dry weather, and give liberal supplies of water. If any of these plants need repotting it should be done at once. Do not disturb the old soil further than is necessary to remove the drainage; press the soil, peat, and sand firmly, and give water with caution for some time afterwards. A light shade over the frame during the hottest part of the day will prove beneficial.

Azalea amœna.—Plants that were assisted to make their growth early, and have been gradually hardened by abundance of air and exposure to light, may be stood outside. If they have been growing under Vines and Peaches thin tiffany should be arranged so as to shade them for a few hours during bright sunshine, or the foliage will be unduly browned by sudden exposure. Protect the front row of pots, the same as advised for Ericas. Syringe the plants freely, and do not allow them to become dry at their roots.

Camellias.—When these have completed their growth syringing should be stopped for a time until the flower buds are set. Plants in vigorous growth if kept close and moist are liable to start again into growth; this can be prevented by the admission of more air, a drier atmosphere, and the gradual exposure of the plants to light. The latter is most important where strong growth has been made, for if not thoroughly matured the flower buds may fall prematurely. Plants that are swelling their buds should be kept moist at the roots and syringed freely. If confined in pots or narrow borders stimulants may be given. If these plants are placed outside they must have a position where they will receive partial shade, and must be well watered, also syringed during bright warm weather.

Kalosanthes.—Plants that have flowered may be cut back and placed in frames to break, when they should be repotted. Shoots that have not flowered may be rooted singly in small pots, or a number placed together in 5 and 6-inch pots. These plants, if rooted quickly, and then fully exposed to light and air, will flower freely another year. If wanted only for the season following, root them singly, and then remove the point to induce them to branch. Plants cut back last season should be placed outside fully exposed to the sun to ripen, which will induce every shoot to flower freely.

Euonymus latifolius variegatus.—This is equally as ornamental in the greenhouse or conservatory during the autumn and winter as the Croton is in the stove, and plants of various sizes may be used with effect. Low standards on stems from 1 foot to 18 inches high are very useful. Cuttings of young wood should now be inserted thickly together in pans of sandy soil, well watered, and then placed in a cold frame where they can be shaded from the sun. Nearly every one will root in this position, and may be potted singly early in the year. They can be rooted in heat, but are less certain, and entail more than double the labour. By rooting a few annually there need be no deficiency of stock.

TRADE CATALOGUES RECEIVED.

F. G. E. Bonnett, Heathfield, Sussex.—*Bulbs.*
W. Cutbush & Sons, Highgate.—*Bulbs.*
T. Methven & Sons, Princes Street, Edinburgh.—*Bulbs.*
Sutton & Sons, Reading.—*Bulbs.*
J. Veitch & Sons, Ltd., Royal Exotic Nursery, Chelsea.—*Bulbs, Fruits.*

THE BEE-KEEPER.

Driving Bees.

Although driving bees is now pretty well understood by the majority of bee-keepers, still one cannot shut one's eyes to the fact that there are many bees destroyed annually throughout the country. Within the past fortnight I have met several bee-keepers who still cling to the tradition of their forefathers, and suffocate their bees over the sulphur pit. In discussing the subject with them, I found their ideas were as dissimilar as was possible. One bee-keeper who started with two stocks in straw skeps last spring, which have now increased to half a dozen, intended reducing them to the same number again, and when appealed to, the only excuse given was that "there was no danger of being stung, and it entailed but little trouble." The reason given by another bee-keeper was that he had sufficient bees, and if he saved their lives now they would probably die of starvation during the winter. But to the credit of modern bee keepers it is only the straw skeppists who destroy their bees when taking their honey in the autumn. Strong colonies invariably winter well; for this reason, if an increase of stocks is not required, it is an advantage to add the driven bees to existing stocks.

In driving bees from straw skeps either open or close driving may be practised. I prefer the former, as the movements of the bees can be seen at a glance; and when the queen and the bulk of the bees have been seen to go up into the empty skep it may at once be removed, and the remaining bees brushed off the combs as they are removed one by one from the stock hive. In open driving it is necessary to have two pieces of stout wire about 1 foot in length. The points should be turned about an inch at right angles. These will form a hinge on each side of the skep to be operated on. The skep containing the honey and bees must be reversed from its original position, and the empty skep placed on the top, a straight piece of wire being put through the two edges to prevent the empty skep slipping off. This will allow an open space of at least a foot between the front edges of the two hives.

The operator must then continue tapping the bottom hive, and in less than half a minute the bees will commence to run up rapidly into the empty straw skep. Before removing the stock from its original stand it is advisable to blow in a little smoke, at the same time giving the hive a few sharp taps with the hand, as this will cause the bees to become excited, and they will at once commence to fill their honey sacs from their unsealed stores; and as in the case of natural swarming, when the same thing takes place, it will make them good tempered, and they may be handled with impunity. If a fine day is chosen for the operation, preferably when the sun is shining, all the bees may be got out of a strong colony in a few minutes.

Bumping Bees.

If a colony of bees is weak from any cause, it is much easier to practise the bumping system than to drive them. This is done by first preparing them as for driving. On lifting the skep from its stand first remove the cross sticks. This is easily done from the outside, as the ends should always project at least an inch for that purpose. The skep must then be lifted bodily and bumped on the ground sharply, first on one side, and then on the other; this will break the combs from the crown of the hive. They may then be lifted out, and the bees brushed off with a fowl's wing. It is an advantage to remove the hive to be operated on a few yards from its original stand; if to a sheltered spot fifty or more yards away so much the better, as at this season robber bees from other hives are very troublesome. If honey is uncovered near to a strong colony they will quickly find it out, and if the weather is warm, as at present, will remove it in an incredibly short space of time, causing an uproar throughout the apiary, and when they have once taken to the robbing propensity it is often difficult to stop them.

Uniting Bees.

At this season, when numerous stocks are being driven in various parts of the country, no mistake must be made in uniting the bees. When all are obtained in the same apiary, or neighbourhood, it is advisable to unite them the same evening, or at the time they are driven, or otherwise obtained. Two, three, or four stocks of bees may be placed together, according to the number of bees in each. They should be headed by a young fertile queen, hatched during the present year. Before commencing operations it is advisable to mark each skep, whether old stock, first swarm, or cast; the former, if it has swarmed, and the latter, will have young queens, whereas the first swarm will be headed by an old queen,

which should be destroyed. If the operator is an adept he will readily find the queen.

If they are placed on a frame hive on fully drawn out combs, and fed rapidly with about 28 lbs. of sugar, they will come out strong and healthy in the spring. If driven bees are placed in a hive and it is necessary to afterwards add more bees, they should all be sprinkled with thin syrup or flour—the latter I prefer, as it is clean, and does not cause robbing from other colonies. The bees will then unite readily without the loss of a single bee. If driven bees are added to a strong colony the same process must be carried out, or it will result in failure.—AN ENGLISH BEE-KEEPER.

TO CORRESPONDENTS

*** All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," *8, Rose Hill Road, Wandsworth, London, S.W.* It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects, through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Paper Receptacles for Plants (*R. B.*).—Your "idea" of forming stout paper receptacles "for the carriage of plants instead of the ordinary clay pots" has been the idea of someone else for a very long time, and, therefore, whatever the advantages of your "invention" they have been in operation for some years. We have seen hundreds of similar receptacles, and though not exactly the same as yours they serve precisely the same purpose. We do not know whether they are patented or not, but if they are we fear yours would be an infringement. If the originals are not patented your chance of making yours pay would depend on their price and your business enterprise. As you reside near Liverpool why not consult Mr. Ker of Aigburth, or send samples to Messrs. Clibran & Son of Altrincham and hear what they have to say on the subject? They are gentlemen of great experience in the packing of plants, and may be able to tell you more about the receptacles already in use than we can.

Eucharis not Flowering (*B. T.*).—To keep Eucharis five years without flowering is very disheartening, and may be due to some peculiarity in the variety or to defect of management. Plants badly infested with mealy bug, and the damage inflicted in cleansing cannot be expected to do much for some time afterwards, and the storing of them under the stage, so as to completely dry off the foliage, would not tend to mend matters, but the reverse. As the plants have not been potted for five years there would be no harm in potting them, if properly done and the plants well attended to afterwards, though needless root disturbance is not advised. First then, to get the plants to flower, we should place the pots in a light position in the stove as near as may be to the glass, and water them so as to induce growth without delay, keeping moist but not over-watered until they have made good foliage, when supply liquid manure not too strong. This, with foliage, will give fine bulbs, and without them it is useless to expect flowers. Keep the plants rather dry after the foliage ceases to develop or young leaves to be pushed, but not to the extent of causing the foliage to become very limp and die. After about six weeks of this treatment flower scapes may show, then supply liquid manure and continue until the new leaves following the flowering are fully developed, when keep rather drier as before, and you may possibly get the plants to flower two or three times in a year instead of not once in five years. The temperature during the growing period should range from 65° to 75° or 80° in summer, with 10° to 15° rise from sun heat; 55° to 65° at resting is suitable. We simply keep the plants in the stove, rather drier when the leaves are matured, and have two lots of flowers, sometimes three, in a year. Avoid complete drying, which is not essential to the free production of flowers, but very weakening to the bulbs. If potted in good soil in the first instance it will not be necessary to do more than top-dress the plants annually, repotting only when the bulbs are overcrowded.

Cutting Muscat of Alexandria and Foster's Seedling Grapes a Week Before Exhibiting (*T. C.*).—It does not answer, as a rule, to cut Grapes a week before exhibiting them, as when not perfectly matured the berries are liable to shrivel, and certainly colour no better off the Vines than on them, even when kept in water—that is, the end of the cut growths. They require light, and this you may secure by drawing the leaves overshading the fruit aside, so as to admit more of it to the Grapes. This, however, must be done very cautiously, or the fierce rays of the sun falling on berries directly that have been more or less shaded may result in scorching, and if not that, browning, which is far worse than imperfectly ripened Grapes, as clearness goes a long way in securing prizes.

Turfy Loam for Growing Good Cucumbers and Grapes (*T. W.*).—The soil appears of a sound bodied nature, such as may be expected on the outcrop of the greensand, and there meeting with clay of a substantial character. But there is little grit in the sample, the soil being of a vegetable nature, no doubt due to the accumulation of decayed organic remains, hence would require an addition of not less than 2½ per cent. of best chalk lime to make it suitable for either Cucumbers or Vines; or you may use in mixture with it one-sixth of old mortar rubbish, which would give you the lime slowly available over an extensive period, and quite enough in each year for the requirements of the Vines, "artificials" containing phosphate and sulphate of lime, such as superphosphate, being annually used. Basic slag phosphate and kainit could also be used in such soil with great advantage, using 14 lbs. of the first and 7 lbs. of the latter to each cubic yard of the turf. You would, of course, use other materials for keeping the soil sufficiently open for Vines, we not having found anything better than calcareous or marly gravel, and of this we advise about one-sixth for mixing with the turf for Vines. The red gravel overlying chalk also forms excellent material for mixing with soil such as yours, the Grapes then colouring like Sloes.

Erica Shannoniana (*R. J. D.*).—This is a superb large-flowering species, bold in growth and much branched. The leaves are arranged in

FIG. 23.—ERICA SHANNONIANA.

threes. The flowers are produced in large terminal whorls, are flask-shaped, delicate pink or flesh colour, save at the contraction of the neck, where the colour is more intense. The footstalks and calyx are bright red, and the whole flowers glutinous.

Tomato Diseased (*W. M. H.*)—The Tomato is virulently suffering from Tomato rot fungus (Macrosporium tomati), commonly known as "black patch," "black spot," or "black stripe," and the whole life history of the parasite was clearly definable in the specimen, so far as necessary for practical purposes. In the early stages the fruit has the appearance of having been scalded, as the attack causes the flesh to leave the skin, which appears quite white, and the patch or stripe quarter to half inch across at first. This enlarges as the mycelial hyphæ of the fungus eat the flesh away, when the affected part assumes a

blackish olive colour, and the whole fruit, or greater part of it, in bad cases becomes involved, turns black inside and rots. The disease is due solely to the fungus, but can be avoided by cultural methods. The most important points to attend to are:—1, Practise thorough cleanliness in the house, removing from it every particle of old plants and vegetable matter, cleaning the woodwork with petroleum emulsion solution, and washing the walls or boarded sides of the house with hot limewash, each pailful having a handful of flowers of sulphur in it. 2, Supply quicklime to the bed or border, 1¼ cwt. per rod; and, after slacking, dig in with a fork a foot deep, taking small spits, so as to insure an even distribution of the lime. 3, After lying a time use thoroughly decayed manure, if any, for enriching the soil, and incorporate well with it. This will also tend to a better intermingling of the lime. 4, Employ such soil as that perfectly free from partially decayed or rough vegetable matter for sowing the seed. 5, Give the seedlings plenty of light and air from their appearing above ground, it not being possible to have them too sturdy. 6, Have the soil firm for the plants, whether planted out or grown in pots. 7, Afford air day and night after the trusses of bloom appear, so that the foliage and flowers and fruit may dry quickly if syringed, and moisture not be deposited. 8, Fertilise the flowers carefully, either by rapping with the finger jerked on the shank, or with a camel's-hair brush. 9, Remove the corollas directly the fruit is set, and they part freely from the surface, not leaving them to damp and rot. 10, Rub the part thus cleared gently with a moisture of air-slaked best chalk lime and flowers of sulphur in equal parts well mixed, or preferably, apply with a fine soft brush. 11, Paint the hot-water pipes with a cream formed of flowers of sulphur and skim milk, and occasionally heat them to 170°, so as to give off fumes, never being afraid to have a little warmth in them in dull weather or when needful to keep the air in motion. 12, Avoid the use of straw or partially decayed manure as a mulch. 13, Feed by means of "artificials" washed in or liquid manure. These points attended to, the disease may be greatly mitigated if not prevented. It is damp on the fruit, held by the decaying calyx, that aids the fungus germ tube to enter from the germinating spores. These come from dead stems or parts of plants that have been affected by the fungus and in which the parasite mostly lives over the winter, again giving rise to the malady. No less than four germ-tubes have entered the fruit sent at its eye, and their mycelial hyphæ are rampant in the flesh, destroying the tissues and causing the fruit to become black inside. Do not save seed from affected fruit. As a further precaution, you may dust the plants with a fungicide in powder containing 10 per cent. of sulphate of copper, keeping the trusses coated very lightly, applying with a bellows apparatus. The other procedure, however, has proved very satisfactory.

Names of Plants.—(*G. C.*).—Cimicifuga spicata. (*F. M. L.*).—1, Harpalium rigidum; 2, Chrysanthemum maximum; 3, Pyrethrum uliginosum; 4, Erigeron speciosus. (*Lex*).—1, Adiantum grandiceps; 2, Nephrolepis davallioides furcans; 3, specimen insufficient, possibly Kentia canterburyana; 4, Cocos Weddelliana; 5, Maranta major; 6, Pteris cretica. (*Hants*).—Rubus odoratus. (*J. C. J.*).—1, Monarda didyma; 2, Catananche cœrulea; 3, Pentstemon Wm. Rollinson; 4, Cornus sanguineus; 5, Œnothera macrocarpa; 6, an Argemone. (*M. H. S.*).—Staphylea colchica. (*Orchid*).—Cattleya Loddigesi.

COVENT GARDEN MARKET.—AUGUST 11TH.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	1 3	to 3 0	Lemons, case	11 0	to 14 0
Filberts, 100 lbs.	25 0	30 0	St. Michael's Pines, each	3 0	8 0
Grapes, lb....	0 8	2 0			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, ½ sieve	0 0	0 0	Onions, bushel	3 6	4 0
Beet, Red, doz	1 0	0 0	Parsley, doz. bnchs	2 0	3 0
Carrots, bunch	0 3	0 4	Parsnips, doz	1 0	0 0
Cauliflowers, doz.	2 0	3 0	Potatoes, cwt.	2 0	4 0
Celery, bundle	1 0	0 0	Salsafy, bundle	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Seakale, basket...	1 6	1 9
Cucumbers...	0 4	0 8	Scorzonera, bundle	1 6	0 0
Endive, doz.	1 3	1 6	Shallots, lb.	0 3	0 0
Herbs, bunch	0 3	0 0	Spinach, pad	0 0	0 4
Leeks, bunch	0 2	0 0	Sprouts, ½ sieve	1 6	1 9
Lettuce, doz.	1 3	0 0	Tomatoes, lb.	0 4	0 0
Mushrooms, lb.	0 6	0 8	Turnips, bunch	0 3	0 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var. doz. ...	6 0	to 36 0	Fuchsias, doz.	4 0	to 6 0
Aspidistra, doz....	18 0	36 0	Heliotropes, per doz. ...	3 0	5 0
Aspidistra, specimen ...	5 0	10 6	Hydrangeas, doz.	8 0	10 0
Calceolarias, doz.	2 6	4 0	Lilium Harrisi, doz.... ...	12 0	18 0
Campanula, per doz... ...	4 0	9 0	Lobelias, doz.	2 6	4 0
Cockscombs, per doz... ...	2 0	4 0	Lycopodiums, doz.	3 0	4 0
Coleus, doz.	2 6	4 0	Marguerite Daisy, doz. ...	4 0	9 0
Dracæna, var., doz.	12 0	30 0	Mignonette, doz.	4 0	6 0
Dracæna, viridis, doz. ...	9 0	18 0	Myrtles, doz.	6 0	9 0
Euonymus, var., dozen ...	6 0	18 0	Palms, in var., each... ...	1 0	15 0
Evergreens, var., doz. ...	4 0	18 0	,, specimens	21 0	63 0
Ferns, var., doz.	4 0	18 0	Pelargoniums, doz.	8 0	12 0
Ferns, small, 100	4 0	6 0	,, Scarlet, doz.	2 0	4 0
Ficus elastica, each	1 0	7 0	Rhodanthe, doz.	4 0	6 0
Foliage plants, var., each	1 0	5 0			

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms ...	2 0	to 4 0	Marguerites, 12 bnchs. ...	2 0	to 3 0
Asparagus Fern, bunch ...	2 0	3 6	Maidenhair Fern, doz. bnchs.	4 0	8 0
Asters (French) per buch.	0 6	1 0	Mignonette, doz. bnchs. ...	2 0	4 0
Bouvardias, bunch	0 4	0 6	Orchids, var. doz. blooms.	1 6	12 0
Carnations, 12 blooms ...	1 0	3 0	Pelargoniums, 12 bnchs. ...	4 0	6 0
,, doz. bnchs. ...	3 0	6 0	Pyrethrum, doz. bnchs	1 6	3 0
Cornflower, doz. bnchs. ...	1 0	2 0	Roses (indoor), doz.... ...	0 6	1 0
Eucharis, doz.	2 0	3 0	,, Tea, white, doz. ...	1 0	2 0
Gardenias, doz....	2 0	4 0	,, Yellow, doz. (Niels)	1 6	4 0
Geranium, scarlet, doz. bnchs.	3 0	4 0	,, Red, doz. blooms ...	1 0	2 0
Gladioli, doz. bnchs. ...	4 0	8 0	,, Safrano (English) doz.	1 0	2 0
Lavender, doz. buchs. ...	6 0	8 0	,, Pink, doz....	1 0	2 6
Lilium longiflorum, 12 blooms	2 0	4 0	,, outdoor, doz. bnchs.	2 0	6 0
Lily of the Valley, 12 sprays	1 0	2 0	Smilax, bunch	2 0	3 6
			Tuberoses, 12 blooms ...	0 3	0 4

POULTRY SCHOOLS FOR ENGLAND.

IN these days of advanced science, when everyone has a chance of learning how and when he likes, and going either deeply or superficially into matters great and small, it is almost a wonder that more has not been done to encourage and foster aviculture, or, in other words the science of breeding and rearing fowls.

Early in this decade steps were taken by County Councils for the development of technical education in the small villages as well as in the large and busy centres. Pupils have been taught by means of lectures, demonstrations by teachers, and also by practical work done by the pupils. The subjects have been very diverse, but not more so than the pupils. You will see the grey-headed man and the boy just out of school eagerly listening and learning together; you will see the mistress of a large household, her young daughter, and possibly one, if not more, of her servants attending the same class.

In the country districts dairy work, laundry work, and cooking classes have filled the best, and, we should add, health lectures and nursing lessons have come in for their full meed of favour. We have had veterinary classes for the men, and a few poultry lectures for all. The gentlemen delivering the latter have made a practice, as far as time would allow, of visiting poultry yards and giving the owners advice—very capital advice too.

But poultry keeping, to make the very best of it, is not to be learned by attending a few lectures. No man, however clever, can compress all he wants to tell in three or four hours at most. That there is great need for reform in this minor industry no one for a moment doubts. We all thought we knew how to make butter—we certainly all did make some substance, sometimes good, sometimes middling, sometimes only fit for cart grease. Now we find that by sending our daughters and dairymaids to undergo a short course of systematic training our butter making has become a science and art—no longer an unknown or doubtful quantity. So far so good; but till we can manage to lessen the amount of money that goes out of this country annually for eggs and poultry we must, in all fairness, admit we have much to learn in poultry management. Our bill last year came to £4,608,606, and we do think some at least of that might be kept at home to help line our empty pockets.

A step in the right direction has been taken lately, and we hail it with pleasure, believing it only to be the forerunner of a great movement. Some of our County Councils have, and are, arranging for classes for fifteen days or three weeks, practical classes where the work is entirely done by the pupils. Of course cavillers will say three weeks is not enough; but we think an intelligent pupil may in that time grasp sufficient facts that will enable him to continue his own education. The classes have been held during

afternoons and early evenings, and at the close of the evening class a lecture is delivered to the general public.

In the district with which we are acquainted our technical pundits have been fortunate in securing the services of Mr. Ed. Brown, the well-known poultry expert, and we have just read with greatest interest his account of how these things are managed in France. France produces yearly eggs and poultry to the handsome amount of £14,000,000, and although much of this is due to individual enterprise, yet the government is wisely alive to the necessity of fostering and helping this industry.

In the Department of Seine et Oise is the village of Gambais; four miles from the town of Houdan (does not that name recall the black and white crested fowl?) is the poultry school. The objects of the school are—1st, to give young people coming from the State practical schools, and who are destined to conduct a farm or any agricultural work, a complete course of practical studies dealing with the poultry yard and production of fowls; 2nd, to render students capable of conducting a poultry establishment, including the hatching, breeding, and fattening of fowls by practical methods, artificial and natural.

The usual course is for three months, and the terms are £14, inclusive of board and lodging. There are scholarships in connection with this school, which of course minimise the cost of the course.

The authorities allow other than French pupils, and at present Mr. Brown says there are three English pupils there. The time-table, which we copy, shows not much idleness is allowed.

6 A.M.—Opening of yards, distribution of food throughout the establishment, first cramming of fatting fowls.
8 A.M.—Hatching room, followed by breakfast.
9 A.M.—Care of chickens, general cleaning of breeding houses, fowl houses, &c.
11 A.M.—Dinner.
1 P.M.—Second cramming of fowls.
2 P.M.—Distribution of food, refilling water troughs.
3 to 6 P.M.—Theoretical studies.
6 P.M.—Supper.
7 P.M.—Closing of poultry and breeding houses.
8 P.M.—Third cramming of fatting fowls.

The day is pretty well accounted for, and at this rate in three months the pupil must be good for nothing if he has not grasped the situation. Fancy, hatching out 30,000 chickens in a season. Nature has but little hand in this process, the greater number being hatched in incubators, and reared in brooders, which are artificially warmed. A great many of these chickens are sold at a day or two old, and reared elsewhere.

Now this seems to us a most excellent plan. We should all like early chickens, but hens are not so accommodating in the matter of sitting as we could wish. Incubators are perhaps not exactly dear, but they involve certain expenditure, and the results for amateurs are not always satisfactory.

As to the fatting process, three methods are taught—the hand, the funnel, and the machine. The food used seems most nutritious, consisting as it does of finely ground and sifted barley-meal, with occasional additions of maizemeal and skim milk; just at the last 1 oz. of diluted fat is divided between three birds, or an egg beaten up to every pint of liquor.

Together with the runs, which, by the way, are planted with fruit trees, is a certain amount of woodland. In hot weather these trees afford grateful shade, and also provide a little insect food. We cannot but agree with Mr. Brown that a school of this description would be a boon to many English folk, and Government might easily spend money far less wisely than in founding and supporting such an institution.

We want something both cheap and good, for the majority of the pupils would not be overflush of money, and we think a few scholarships connected with our elementary schools would be of more practical use than those existing—scholarships that provide what is called "higher education."

WORK ON THE HOME FARM.

The past week has been exceedingly hot and dry, and we have now had nothing more than a passing shower since July came in. We hear of heavy rains in more favoured localities, but alas! they do not come our way. Roots look bluer every day, and it is wonderful how the Turnips exist. Mangolds look fairly well, but want rain so as to make the best use of the last dressing of nitrogen.

The harvest that was inclined to tarry has come with a rush, and before these lines are in print we shall be in the thick of it. Oats have finished off very suddenly, and must be light in weight; and Barley, except on the deepest soils, will be thin in the grain, which must seriously affect the yield. The heat has been too great even for such a sun-loving plant as Wheat, and many samples will be wanting in plumpness.

This promises to be a great season for the string-binder. Looking round our own parish there does not appear to be one field that is beyond the binder's powers, and as reports from all parts tell a similar tale, hand-binding is likely to be the exception rather than the rule. Reapers should work excellently this season, and the draught will be light, but the hard ground will shake them a good deal, and nuts and screws must be constantly looked over and tightened up, or they may be lost.

Seeds are now as bare as a turnpike road, and might have been ploughed for Wheat for all the keeping there was left on them, but the land is as hard as the aforesaid turnpike, and would be about as easy to plough. An immense amount of rain will be necessary to bring it into ploughing condition.

The chief anxiety of the farmer just now is in connection with his live stock. The best of pastures are presenting a brown appearance, and growth is quite at a standstill. Already we see cuttings being made in the recently made hay and clover stacks. Water supply is in some cases a serious question; streams and ponds are drying up, and the dryness of the pasture makes doubly necessary a good supply of water. This will mean carting, may be long distances; but harvest time or not, the water must be fetched. What a pity it is that fine weather can do so much harm; but complaining is of no use, we must make the best of things as they are.

TO HELP FARMERS.

Her Majesty's Commissioners appointed to inquire into the subject of agricultural depression have issued a report, in which they recommend some important amendments of the present Agricultural Holdings Acts for England and Scotland.

Among the proposed amendments are:—

1, Full compensation for the cumulative fertility resulting from continuous good farming, irrespective of any arbitrary time limit.

2, Freedom to carry out and compensation for all improvements suitable for the purposes for which the holding is let, whether the landlord consent or not.

3, Compensation should be given retrospectively for suitable improvements prior to the passing of a new Act, where the landlord did not dissent from such improvements at the time.

4, A tenant remaining in his holding at the determination of his tenancy and entering on a new contract of tenancy should be enabled to protect himself from being rented on his improvements by the right to claim compensation for their unexhausted value without quitting, or to obtain a proportionate reduction from the new rent.

5, A tenant arbitrarily compelled to quit his holding, except for non-payment of rent and for bad farming, should be entitled to such compensation as will cover his loss.

It is also suggested that the Railway and Canal Traffic Acts should be amended, so as to test the reasonableness of every rate or condition of transit.

The First Pocket of Hops.—The first pocket of Hops of this season's growth arrived on Monday, consigned to Messrs. W. H. & H. Le May, Hop factors, Borough High Street, and was sold by them at £15 per cwt. It was grown by Mr. T. Savage of Beech Farm, Marden, and was of the kind known as Hobb's Early Goldings, the quality being exceptionally fine. It is thirteen days later than the first pocket arrived last year.

METEOROLOGICAL OBSERVATIONS.

Camden Square, London.
Lat. 51° 32′ 40″ N.: Long. 0° 8′ 0″ W.: Altitude 111 feet.

Date.	9 A.M.					In the Day.				
1897. August.	Barometer at 32°, and Sea Level.	Hygrometer. Dry.	Hygrometer. Wet.	Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature. Max.	Shade Temperature. Min.	Radiation Temperature. In Sun.	Radiation Temperature. On Grass.	Rain.
	Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Inchs.
Sunday ... 1	30·074	58·9	55·0	N.E.	66·9	79·6	51·2	118·9	46·3	—
Monday 2	30·108	62·4	58·0	N.W.	67·1	85·8	54·4	128·2	59·0	—
Tuesday 3	30·247	63·1	60·9	N.E.	68·0	81·8	53·2	125·4	46·4	—
Wednesday .. 4	30·124	75·1	66·1	N.E.	68·0	87·1	58·4	124·0	52·6	—
Thursday .. 5	29·837	75·1	67·0	N.E.	68·3	88·4	59·4	130·1	52·5	0·010
Friday 6	29·778	69·1	62·7	S.W.	69·0	76·7	61·1	121·6	55·8	—
Saturday .. 7	29·910	69·1	61·4	N.W.	68·0	77·9	58·3	129·2	53·1	—
	30·011	67·5	61·6		68·0	82·5	56·6	125·3	51·0	0·010

REMARKS.

1st.—Overcast morning; bright pleasant afternoon.
2nd.—Almost cloudless throughout; warm sun and pleasant breeze.
3rd.—Slight mist or drizzle early and overcast till 10.30 A.M.; bright warm afternoon.
4th.—Sunny and warm throughout.
5th.—Hot and rather close; cloudy at times in morning.
6th.—Cooler, with alternate cloud and sunshine and occasional spots of rain.
7th.—Alternate sun and cloud.

A very fine, hot week—four consecutive daily maxima above 80°, and only one day with maximum in sun below 120°.—G. J. Symons.

Journal of Horticulture.
THURSDAY, AUGUST 19, 1897.

THE JOURNAL OF HORTICULTURE *can be obtained from the Office,* 171, *Fleet Street, London, post free for a Quarter,* 3*s.* 9*d. Editorial communications must be addressed to* 8, *Rose Hill Road, Wandsworth*

SHREWSBURY.

QUITE a sufficient heading is that one word to direct the minds of readers of current garden literature to an event which cannot be otherwise than historic. During the latter part of 1896 a strong desire was manifested by horticulturists that something should be done by them as a body to commemorate in a fitting manner the greatest consummation of its kind that is to be found in the annals of any country—the occupancy of the Throne for sixty years by our good and gracious Queen.

Varied were the projects advanced in which the sentiments of horticulturists might be embodied and exemplified, but however excellent in themselves, the majority of them were thought, after serious consideration, to be lacking in the element of practicability. True, and happily, those connected with our charitable institutions did not come within that category, but were splendidly successful. There was, however, beyond them a desire for something of a spectacular character, as represented by a great display of the products of British gardens.

An exhibition, adequate in magnitude and diversity, could not be provided with anything approaching a guarantee of success in London after the 22nd of June, and it was fortunately not attempted. The Royal Horticultural Society had had its splendid, and in many respects unequalled, Show in the Temple Gardens. That great annual exhibition could not be postponed, and, as we said at the time, whatever the R.H.S. might do in providing a second exhibition, it could not, in our opinion, be made to assume a national character, or be in any adequate sense representative of British horticulture in its broadest aspects.

The Council of the Society marked the great event of the year in a different and much more permanent manner by instituting, with the full sanction of her Majesty, the "Victoria Medal of Honour," of which it may be presumed there will always be sixty possessors so long as the Society exists. In the first distribution the most distinguished scientific men, as well as generous

patrons of, and real workers in, horticulture, become its recipients, except those gentlemen who happened to be members of Council at the time—these, in virtue of a self-denying ordinance, being regarded as ineligible. It could not well be otherwise under the circumstances, but there ought to be ways and means by which recipients themselves who are Fellows of the Society may claim at an appropriate time, that at least the President and Secretary of the Society shall be *ex-officio* entitled to this distinction, seeing that they are in fact more than fully entitled by the commanding services they have rendered in the world of horticulture. This may be somewhat digressive, though it is strictly cognate to the subject under discussion—the commemoration of the great reign by the gardening community.

Adverting to other forms proposed for accomplishing the object in view in the most effective manner, and in which there could scarcely be the possibility of failure, the *Journal of Horticulture* ventured to distribute at the time the following pronouncement :—

The Shrewsbury shows never fail ; they are the greatest representative exhibitions in Europe. Nowhere else can such a splendid combination of specimen plants, groups, floral decorations, fruit, and vegetables be seen exhibited by such a great number of cultivators—nurserymen, amateurs, gardeners, and cottagers ; and nowhere else, so far as we know, do such crowds of people assemble to inspect the productions. The shows are of the first magnitude every year, and if the Royal Horticultural Society and Shrewsbury were, so to say, join hand in hand in honour of an event which will stand alone in history, the exhibition resulting would be of a regal character and worthy of the great occasion.

A cordial invitation was received by the Royal Horticultural Society from Shrewsbury, and as cordially accepted. The great National and strongest of provincial Societies joined hands. We have said the "strongest" of provincial Societies. By what test is it so adjudged ? By the test of success. Since 1875 the progress has been remarkable, as determined by the financial results.

With exceptions so small as to scarcely be worth notice, the subscriptions of members have increased year by year. Visitors have increased in numbers, and the income of the Society has risen correspondingly. The total amount received from all sources in 1875 was £791 12s. ; in 1895 (we have not the returns for last year) it was £4010 13s. 2d. Assuming that the last year's amount equalled that of the year preceding, the aggregate receipts in twenty-two years have exceeded £50,000. That is an indication of strength. Even in 1894, when the rain fell in torrents through the whole of one day, we find the total amount realised £3476, which most societies would rejoice in under the favourable influence of the best flower show weather.

Remarkable also have been the disbursements of the Shropshire Society—not in the form of prizes alone, of which we have no record, but as grants for various public objects connected with the town. These have exceeded £10,000, the largest amounts being £5700 in the purchase of land and river foreshore, and £1000 for the Darwin Memorial Statue, which was unveiled on the 10th inst. by the Right Hon. Lord Kenyon. These facts, we think, afford sufficient testimony of the strength and stability of the Shropshire Horticultural Society, of which his lordship is president, and thus appropriately presented the statue to the town. We know of no Horticultural Society at home or abroad which has accomplished so much in the time—twenty-two years.

We may now briefly refer to the preparations that were made for the present commemorative show, and inducements offered to competitors. Not only did the Royal Horticultural tender hearty co-operation generally, but at once offered its gold Banksian medal for the exhibit (not for competition) which in the opinion of the Council best represents the progress of horticulture during the last sixty years, as well as a silver-gilt Knightian in one of the great fruit classes, with such other medals and awards as the Council may decide.

An ancient London Guild — the Worshipful Company of Fruiterers—make a handsome donation in the form of a gold medal to go with the first prize of £30 in the Victorian fruit class. This may be regarded as the blue ribbon of the Show. The Company also provides three silver medals, one for a collection of fruit, the other two in the Grape classes. Then there is the Veitch Memorial medal, two Victorian medals by the President, specially designed, and of which no duplicates will be issued. Of the same unique character are the three first dessert services, provided by the Shropshire Society, which is also prepared to grant gold and silver medals for new plants, also for products of special merit.

It will be seen that generous provision is made for exhibitors, apart from money prizes, some of which are of exceptional value. For instance, upwards of £130 are allocated to groups in two classes, and £45 for specimen plants in two prizes ; while £48 are devoted to seven collections of cut flowers, and £37 in a class for floral arrangements. Generous provision is made for vegetables by Messrs. Sutton, Carter, Webb, Sydenham, Eckford, and others, as may be seen by the schedule.

It will thus be perceived that encouragement is not lacking in any sections, and as the entries are greater than ever in the principal open classes, it may be expected (writing on the eve of the show) that a realisation worthy of the occasion will soon be reported to the world.

SHREWSBURY, TUESDAY.—An idea of the magnitude of the show may be gathered from the extent of the accommodation provided for the products. The extensive park-like quarry grounds, bisected and partly encircled by noble avenues, seem to be, in the show section, almost full of canvas. Other sections are clear, as must be the case when some 50,000 persons assemble at once. We think the total attendance amounted to 70,000 last year. There are seven marquees of the following dimensions :—Large plant tent, 180 × 80 feet ; second plant tent, 135 × 40 feet ; flower and fruit tent, 310 × 50 feet ; second flower tent, 100 × 36 feet ; vegetables, 120 × 30 feet ; cottagers, 130 × 36 feet ; small tent, 35 × 20 feet—a total of 47,880 square feet of canvas.

The number of judges (26) further indicates the extent of the exhibition, and in the following list there is not one too many for the work.

GROUPS AND SPECIMEN PLANTS.—Mr. A. Outram, F.R.H.S., Moore Park Road, Fulham, London, and Mr. H. Ranger, R. Kerr & Sons, Aigburth Nurseries, Liverpool.

FLORAL DESIGNS, BOUQUETS, AND CUT FLOWERS.—Mr. J. Hudson, V.M.H., F.R.H.S, Gardener to Messrs. Rothschild, Gunnersbury ; Mr. P. Blair, F.R.H.S., Gardener to the Duke of Sutherland, Trentham ; Mr. A. McKellar, Gardener to H.R.H. The Prince of Wales, Sandringham ; and Mr. S. T. Wright, Superintendent R.H.S. Chiswick.

DESSERT TABLES.—Mr. Owen Thomas, V.M.H., F.R.H.S., Gardener to H.M. The Queen, and Mr. A. F. Barron, V.M.H., F.R.H.S., late Superintendent R.H.S., Chiswick.

VICTORIAN 60 DISHES FRUIT CLASS.—Mr. J. Wright, V.M.H., F.R.H.S., *Journal of Horticulture*, London ; Mr. C. Slade, Gardener to the Duke of Newcastle, Clumber ; and Mr. W. Coleman, Eastnor Castle, Ledbury.

GENERAL FRUIT CLASSES.—Mr. E. Gilman, F.R.H.S., Gardener to the Earl of Shrewsbury, Alton Towers, and Mr. W. Miller, F.R.H.S. Gardener to the Earl of Craven, Combe Abbey.

COLLECTIONS OF VEGETABLES.—Mr. J. Muir, Gardener to Miss Talbot, Margam Park, Glamorgan, and Mr. J. Lambert, Gardener to the Earl of Powis, Powis Castle, Welshpool.

SPECIAL VEGETABLE CLASSES.—Mr. A. Dean, F.R.H.S., 62, Richmond Road, Kingston, and Mr. H. W. Ward, F.R.H.S., Rayleigh Nurseries, Rayleigh.

GENERAL VEGETABLE CLASSES.—Mr. N. Pownall, Gardener to F. Wright, Esq , Lenton Hall, Nottingham, and Mr. J. Wallis, Gardener to R. Sneyd, Esq., Keele Hall.

WILD FLOWERS.—Messrs. W. Beacall, Shrewsbury ; T. P. Blunt, Shrewsbury ; and Rev. W. Serjeantson, Acton Burnell.

COTTAGERS' CLASSES.—Mr. Farrant, Gardener to Mrs. Juson, Shrewsbury ; Mr. Bellis, Gardener to Sir C. H. Rouse Boughton, Bart., Downton Hall ; Mr. Townsend, Gardener to Col. Lloyd, Aston Hall, Oswestry ; Mr. Bremmell, Gardener to H. France-Hayhurst, Esq., Overley, Wellington.

Something like a calamity has now to be recorded. The wind was gusty before noon, and just when Mr. Cypher had arranged five van loads of plants in the large tent, it collapsed, doing irreparable damage to his specimens. There was no such storm as at York

but the ropes were not strong enough to resist the sudden strain to which they were subjected, and surprise and regrets are heard on every hand. Some of Mr. Marriott's plants were also injured.

The town is gay, hotels filling fast, exhibitors jostling each other at the station, and porters having a lively time. A famous hotel, "The Raven," is the rendezvous of the R.H.S. contingent, except the President ("Sir Trevor") who with the Very Rev. (and horticultural) Dean Hole, are the guests of Lord Kenyon. The officials of the Shropshire Society, including Lieut.-Col Peele, Mayor of Shrewsbury, with Messrs. G. M. Salt (Chairman), W. Phillips (Treasurer), and Adnitt and Naunton (Hon. Secretaries), met the London visitors, who consisted of Messrs. H. J. Veitch, T. Statter, S. Courtauld, P. Crowley, J. Douglas, H. Selfe Leonard, W. Crump, J. Smith, T. F. Rivers, A. Outram, J. Wright, and the Rev. W. Wilks, at dinner in the evening. It was not a ceremonial but friendly gathering, speeches being reserved for the luncheon on the morrow, which is to be attended by Lord Kenyon and his guests.

This great commemorative Show was, but for the mishap to the tent, an unqualified success from a horticultural point of view. The exhibits were never more numerous, and the quality was superb. In every section —plants, groups, cut flowers, fruits, vegetables—a standard was reached that is rarely seen in or out of the metropolis. Amidst such general excellence it may appear somewhat invidious to give one the pre-eminence over the remainder, but none the less we think we may safely say that the fruit section was the best of all. Magnificent indeed were the vegetables, while the display of cut flowers was of exceptional beauty. We cannot give a detailed report—time will not permit of it—but our representative has wired the foregoing facts with the prize-winners in the subjoined classes. The enormous crowd prevented the awards being secured in several of the other important classes, while the unfortunate mishap of yesterday to the large tent made the arranging of the groups very late. The weather was rather showery. We trust it will be fine to-morrow, when thousands of visitors will flock to the Quarry. Next week a complete account will be found in our columns.

One of the most attractive classes in this magnificent Show was that for a display of floral arrangements in a space of 12 feet by 5 feet. Any design in flowers was admissible, entirely at the discretion of the exhibitor. The exhibits were very lovely indeed, and showed what can be done with flowers and foliage in skilful hands. Messrs. Perkins & Son, Coventry, who are past masters in the art of floral decorations, deservedly secured premier honours, and were followed by Miss Stevens.

The fruit division of the Shrewsbury Show is always a very fine one, and this year's was in no respect behind its predecessors. For a dessert table, decorated with plants (in pots not exceeding 5 inches), cut flowers, and foliage—table 10 feet by 4 feet 6 inches. Not more than sixteen dishes of fruit selected from a given list. Each table to be covered with a white cloth, and twelve dessert plates will be provided for each table, which must not be used by the exhibitor. Silver, electro-plate, wine glasses, and decanters excluded. Epergnes and vases for cut flowers, and plates, dessert dishes, or other receptacles for fruits must be provided by the exhibitors. Four prizes were offered, the first being Veitch Memorial medal and £5, added to £12 12s. given by the Society; the second, £12 12s.; the third, £8 8s.; and the fourth, £5 5s. The stand arranged by Mr. J. H. Goodacre, gardener to the Earl of Harrington, Elvaston Hall, Derby, with 105½ points, received the first prize. It was a superb exhibit in every respect. Mr. J. McIndoe, gardener to Sir J. W. Pease, Hutton Hall, Guisborough, with 104½ points, was second; Mr. Harris, gardener to Lady Henry Somerset, Eastnor Castle, Ledbury, with 99½ points, third; and Mr. Gleeson, with 96½ points, fourth.

The enormous sum of £75 was offered in what was designated the "Victorian Fruit Class," which was instituted to illustrate the produce of British gardens. According to the schedule, it was for "Sixty dishes of fruit, arranged on a side table, in a space 16 feet by 4 feet 6 inches, artistically displayed with cut flowers, foliage, and not more than twelve plants in pots not exceeding 5 inches in diameter." The fruits had to be selected from a list printed in the schedule, and the judging was done by points on the scale formulated by the Royal Horticultural Society in its Code of Judging. The first prize was £30, to which the Worshipful Company of Fruiterers added its gold medal. The second prize was £25, with the silver-gilt Knightian medal of the Royal Horticultural Society, and the third £20 and the silver medal of the Shropshire Horticultural Society. The most intense interest was centred in this class, as it was the first of the kind that had been seen. Obviously the number of exhibitors could not be large, there being three only, but each staged in a really remarkable manner. The prize winners were Messrs. J. McIndoe, with 321 points, first; J. Dawes, with 297 points, second; and J. H. Goodacre, with 294 points, third. It was a most imposing class.

In addition to the several medals of the Fruiterers' Company and of the Shropshire Horticultural Society, the Royal Horticultural Society specially offered a gold Banksian medal for the exhibit (not for competition) which in the opinion of the Council of the R.H.S. best represented the progress of horticulture for the last sixty years. To the superb exhibit of Messrs. J. Veitch & Sons, Ltd., Royal Exotic Nursery, Chelsea, this was adjudged.

Messrs. Sutton & Son, Reading, offered six prizes for a collection of vegetables, nine distinct kinds. Mr. C. Foster, gardener to Morgan S. Williams, Esq., Aberpergwm, Glyn Neath, Glamorgan, was first, and took the Sutton Commemorative cup, with £5. The stand was an exceptionally fine one, and reflected the utmost credit on the grower. The second position was taken by Mr. W. Pope, gardener to the Earl of Carnarvon, Highclere Castle, Newbury; the third by Mr. Bowerman, gardener to T. Hoare, Esq., Hackwood Park, Basingstoke; and the fourth by Mr. C. J. Waite, gardener to the Hon. W. P. Talbot, Glenhurst, Esher.

Presentation to the Honorary Secretaries.

An interesting feature to be recorded in connection with the show is a well merited presentation to Messrs. H. W. Adnitt and W. W. Naunton, who have been so largely instrumental in raising the Shropshire Horticultural Society to its present high position. Having in view the long and gratuitous services of those gentlemen, a Committee was formed a short time ago with Mr. A. Outram, F.R.H.S., as Secretary, and Mr. Owen Thomas, F.R.H.S., V.M.H., as Treasurer, and an ample sum speedily raised for the purchase from Messrs. Mappin & Webb of two handsome silver centrepieces (in appropriate design for fruit and flowers) for the dinner table, each bearing, in addition to the names of the recipients, the following inscription:—"Presented by horticultural friends in recognition of services to horticulture." Sir Trevor Lawrence kindly undertook to make the presentation.

It is impossible to speak too highly of the labours of these gentlemen. At no time, perhaps, could these be more fully appreciated than the day before the show, when, with a staff of clerks (and half a cartload of empty envelopes on the floor), they were dealing with correspondence, while telegrams were constantly pouring in. They are, however, adepts at the work, and out of the seeming confusion to-day will emerge order to-morrow, to the satisfaction of thousands and the advancement of horticulture.

Eucryphia pinnatifolia.—Possibly the reason this beautiful shrub is still so rare is that it is rather difficult to propagate, and plants until three or four years of age are liable to be damaged by severe frosts. It is, however, well worth looking after, as when fully in flower it makes a most charming effect. It forms an upright growing bush, with a somewhat fastigiate habit, and is of Chilian origin. The leaves are usually ternate and opposite, the leaflets being more or less ovate, with serrated margins. The flowers are produced in pairs from near the apex of the branches. They are pure white, 3 to 4 inches across, with four petals and numerous stamens, resembling at first sight the flowers of a single white Camellia. The flowering period is July and early August. It looks best when grown as a single specimen. Good soil with a little peat ought to be given, and a sunny position. It should be well planted at first, and then not interfered with, as it dislikes disturbance at the roots. It will be found advisable until the plant has had several winters outside to have a temporary covering which can be placed over it during severe weather, and which can be easily removed on all favourable occasions.—W. D.

Window Gardening in Manchester.—Have you ever been to a plant competition in some dingy quarter of a large city? If so, you cannot have failed to be impressed with the enthusiasm that is manifested by the poor people competing, or cease to be struck with admiration that under such adverse circumstances they have accomplished so much. How, for instance, they manage to get anything but stem and a few pallid leaves on a "Geranium," or prevail upon a Fuchsia to give ample bloom, or maintain their plants in good form, would be matters of marvel but for the knowledge of the great care that the exhibitors take to keep their plants clean and to give them every ray of light and plenty of air, with prudence in the use of water. All this care and thought, which are as much as would be required to keep a whole greenhouse in good order in the country, have their reward in the wholesome pleasure they give to those who are so circumstanced in life as to have but few reliefs to the dreary drudgery and sordid surroundings of their lives. We are pleased to see the strides the Society for Promoting Window Gardening in Ancoats is making. The recent show was larger than any yet held. It would be a good thing if so excellent a movement were extended to other districts of the city.—("Manchester Evening Chronicle.")

FRUIT GROWING AND SELLING.

The difficulties attendant on the cultivation of hardy fruit in this climate are frequently recounted in the pages of the horticultural periodicals. Every phase of the subject is described, and the available means for combating many of the evils are explained; in short, it is the fault of neither writers nor editors if cultivators are unable to cope with most of their disadvantages. There is, however, one aspect of fruit culture which demands more attention—in fact, it is so essential that the greatest cultural success is nullified by defective knowledge in the profitable realisation of the fruit produced.

This is of more importance now, because in so many private gardens the sale of surplus produce is an established rule, while in others only that which cannot be sold is sent into the "house;" but whether the marketing is done from private establishments, orchards, farms, or market gardens, all those responsible have to study the most economical and advantageous methods of finding purchasers for the fruit, vegetables, plants, or flowers they are engaged in producing.

Many who have had to buy their experience can tell how easily the balance of accounts is placed on the wrong side, and upon what simple matters profit or loss frequently depends. Certainly in this matter "an ounce of practice (*i.e.*, experience) is worth a ton of theory," as those who endeavour to found a business on theory alone speedily find to their cost. The experience which has fallen to my lot has been varied, and in some respects exceptional, and this has familiarised me with aspects of the subject which often escape notice or receive only partial attention.

A friend who is now securing a substantial living from the culture of hardy fruits called upon me a few days since, and in the course of conversation remarked, "Twelve years ago I knew practically nothing of hardy fruit growing, but it seemed such a simple matter that I embarked upon it rather extensively, and it has taken me quite half that time to learn to grow the fruit, and the other half to learn how to sell it." Fortunately this individual was not solely dependant upon his fruit plantations for a living, and he was, further, in the happy position of being the owner of the land planted. But for these two circumstances it is easy to imagine what the result of such an undertaking would have been. It is creditable to a man's energy, however, that he should have conquered such difficulties, yet with dearly bought experience like this he is as ready to communicate his knowledge to others as if it had cost him nothing. He speaks hopefully of the prospects of hardy fruit culture, but he qualifies all the encouragement given to those about to start in the work with the indispensable condition that they must acquire a substantial practical knowledge of the industry before embarking in it, or risking much capital.

Without entering upon cultural questions, a few remarks upon varieties are needed to preface the subject of fruit selling, as there are certain qualities which have a strong bearing upon market value and growers' profits. Two properties of general importance are hardiness and prolificness. Delicate varieties of any kind of fruit-bearing plant are eminently unsuited for those who wish to make fruit culture profitable, and equally so are those that habitually produce sparse crops. Softness is also a quality to be avoided, and it is equally detrimental in Apples and Pears as it is in the more delicate fruits like Strawberries; while even in Plums there are some varieties with firmer, thicker, and more protective skins than others, which enable them to stand conveyance by road or rail better than their delicate and, perhaps, finer quality relatives.

In connection with this property of softness may also be mentioned the gathering of fruit before it is dead ripe. There are few points more difficult of determination by the inexperienced than the precise time when fruit can be gathered to the best advantage for marketing with safety. It is of especial importance in reference to Strawberries, Raspberries, and Plums; but even with Gooseberries and Currants the difference of a day in the time of gathering will sometimes materially influence the sale results, either favourably or the reverse.

If fruit is advanced beyond a certain stage, and it is packed to remain in bulk for some hours, or possibly a day, it rapidly deteriorates in value, even though it was thoroughly dry at the time of gathering. There is a natural exudation from fruit in this stage which leads to the heating that is really an incipient fermentation affecting both flavour and appearance most injuriously. This seems so self-evident that dwelling upon the matter might appear to be superfluous; yet large quantities of fruits are rendered unsaleable every year by neglect in the precaution of gathering sufficiently early, and a still larger proportion is sold at considerable disadvantage for the same reason. Gooseberries are quite exceptional in affording two distinct seasons of gathering, and in a year like the present, when in many districts there was scarcely half a crop, much better prices were obtained for the green fruit than is now being had for that marketed ripe. Even with only a partial crop my returns have been far more satisfactory than in some seasons of full crops.

Appearance is a most important factor in the sale of fruit. It includes size and colour, both qualities of urgent market importance, for small fruits of their respective kinds stand a poor chance for sale, except perhaps as regards the early dessert Apples, in which both season and quality outweigh the other considerations. But if size is gained only at the expense of firmness the seller will not profit. It is an unfortunate circumstance, more clearly exemplified in Strawberries than most other fruits, that increased size is nearly always attended by loss of other qualities, either firmness or flavour. There is no question, however, that size does command the public attention, for large good-looking fruits will secure purchasers when those of inferior appearance, though possibly superior in quality, are often passed over.

As regards colour the same remarks apply, for it frequently makes 20 per cent., or even 30 per cent., difference in the price. Take for example Cox's Orange Pippin, a well-known Apple of proved quality, which in different seasons or situations varies considerably in the brightness or depth of colour. I have known well-coloured fruits realise 10s. per bushel when otherwise equally good fruits on sale at the same time would not bring more than 7s. per bushel. A very material difference when railway and salesmen's charges have to be deducted from the gross returns. It will be seen that this refers not only to varieties notable for their colour, but to the selection of the best coloured fruits of the same variety.

Flavour or quality is placed last because it only appeals to those who have an intimate knowledge of fruits, and thus affects the general market to a limited extent. In leading depôts like Covent Garden there are always some salesmen who will only deal in the best produce of all kinds, and then he who has command of really first-class varieties, and has secured the confidence of purchasers, can obtain remunerative prices even when the general rates for average fruits are low. It is a trade that ought to be developed. In other words, the public require educating up to a higher standard; but where a man desires to get a living he must supply existing demands, and these are all in favour of the qualities already named.

Selecting and grading have often been described as essential to the best and most profitable trade in fruit, but they cannot be too frequently or emphatically impressed upon the minds of growers. Although the labour is considerable when dealing with produce in large bulk, yet the expense is a wise outlay, and will bring a substantial return. In my own experience instances have occurred where there would have been less actual loss if mixed, ungraded, low quality fruit had been thrown away instead of incurring the expense of carriage and marketing; yet for half the quantity carefully selected, and discarding entirely all that were defective, a profitable return has been obtained.

This applies specially to Apples; but the same thing has been proved in regard to such soft fruits as Strawberries and Raspberries, as well as Gooseberries. In regard to the latter, as much as 9s. per bushel has been made this year of the finest selected fruits for bottling, while for the lowest grade Gooseberries not more than 5s. per bushel could be secured. The labour involved in grading Strawberries is the most serious item, for the care requisite in handling such a delicate fruit is much greater than with any other, as the object should be to avoid everything likely to lessen the value of the fruit, which the slightest defect will do. Notwithstanding this, however, I have found, taking on an average of seasons, that after deducting the expenses of sorting there is a clear increase of £10 per ton due to the grading.

The mode in which fruit is made up for sale is another matter of considerable importance, and though it has to be regulated by local customs or special market requirements to some extent, yet there are certain rules that apply generally. The first of these is that fruit should not be made up in large quantities where it can be avoided, and this is especially the case with ripe fruits and all the soft fruits. Much damage is done by employing either boxes or baskets of large size. The half sieves used in Covent Garden Market are very convenient, but baskets are with many growers being gradually superseded by boxes. The chief advantage of these is that the fruit is less liable to injury in transit, and the defect, if not properly made, is that they are too close and consequently too heating.

For Apples the most convenient boxes I have tried are those constructed to hold half a bushel, imperial measure, which can be nearly square or longer in one direction, allowance being made for the packing material and the size of the Apples, the larger sorts needing most space, and the proportions of the boxes must be regulated to some extent by the size and class of Apple they are intended to hold. If the fruits can be packed in even rows both ways and,

therefore, in layers, it is more advantageous in every respect. For choice dessert varieties and Pears smaller boxes are preferable, so that the fruit can be either packed in dozens, or 10 lbs. or 12 lbs. in weight. For retail trade small boxes are very useful, and many salesmen are finding that they can secure a readier sale for fruits in small quantities than in bulk.

For small fruits, boxes holding 6 lbs. or 12 lbs. are useful, and are readily sold. A useful size of box that is employed by several growers, including myself, for Black and Red Currants and Strawberries, has the following dimensions :—Sides, 11½ inches long by 6 inches deep, and ¼ inch thick ; ends, 10½ inches long by 6 inches deep, and ½ inch thick. The sides are nailed to the ends, the bottoms being of the same thickness as the sides, but in two widths, leaving a space of ¼ inch in the centre for ventilation. The lids are nailed to cross pieces at the ends which rest on the top of the box, thus raising the lid slightly above the box, also for ventilation ; they are hinged at the back by two pieces of stout string passed through holes in the sides and lids, and are secured in front by one piece of string in a similar way. Boxes of this size will hold 12 lbs. of Strawberries, Red Currants, Black Currants, or Gooseberries, but more of the Black Currants can be put in if necessary, though it is not recommended, and for Strawberries it is not advisable to have more than 6 lbs. in one box.

With regard to the last-named fruit, the most serviceable box I have tried is one that is being sent out by several of the railway companies at a charge of 1s. 6d. per dozen. The size is as follows (inside measurement) : 10¾ inches long, 7½ inches wide, and 3 inches deep. These weigh 1 lb. each, and hold 3 lbs. of Strawberries, Red Currants or Raspberries, and 4 lbs. of Black Currants, in which quantities these fruits sell most readily, and travel safely. I have sent consignments in such boxes over 100 miles, and the fruit has been received in excellent condition. As regards Strawberries and Raspberries, the finest fruits are best in punnets, and these, again, should be packed in shallow boxes that will hold half a dozen. The 1 lb. punnets are greatly preferred to the larger size (2 lbs.), as the latter have to be heaped up, and it renders safe packing and transit more difficult of attainment.

In the establishment of a new business in fruits, the two methods open to growers are the market and local trade. In a few cases it may be possible to rely upon either of these alone, but in the majority it is safest to utilise the two. For relatively small quantities the local trade can be depended upon, and in some districts all the best fruits can be disposed of in this way ; but for large bulks of fruit of any kind, the markets provide the only available outlet. The too general mistake of sending all to the largest market, or to one market, should be avoided, for the differences in prices prevailing on the same day in markets only fifty miles apart is sometimes astonishing. It may be more convenient to forward fruit in large quantities to one destination, but the grower who studies his own personal convenience alone in this or other matters, will rarely succeed in securing the best returns for his produce.—A Fruit Grower.

A GOOSEBERRY TRELLIS.

I send a hand sketch of a Gooseberry trellis that is in the garden attached to the residence of Mrs. Chrystie, Great Bookham, Leatherhead. The trellis is a most interesting object, especially when the cordons are in fruit, and the owner, who had it formed and planted three years since, is greatly pleased with it. The forming grew out of hearing a County Council lecture on bush fruit culture, in which the growing of cordon Gooseberries in trellis fashion was both advocated and illustrated. The trellis is of strands of stout wire in five lines, and is 5 feet in height.

The strands are firmly secured to stout upright posts. The cordon bushes are about 12 inches apart. Some of the varieties are much stronger growers than others, and it is much better to have varieties planted that make good equable growth, in preference to mixtures of strong and weak growers.

The best of the twenty-three varieties planted, so far as good growth is concerned, are Hepburn's Prizetaker, Green Laurel, Rifleman, May Duke, Whinham's Industry, White Captain, Whitesmith, Red Champagne, Early Sulphur, and Dan's Mistake. Highlander and Lomas' Victory, whilst growing tall, spur badly, the stems being rather bare as shown in the figure. Such varieties are unfit for this particular purpose.

Very good, even, medium growers are Early Kent, Early Green Hairy, Surprise, Railway, and one or two others. These would suit a 4 feet trellis very well. Rather shorter are Goblin, Syon, Leveller, Mount Pleasant, Fearless, Bright Venus, and Forester.

How far this classification may accord with those of nurserymen or others who have the varieties growing as cordons I cannot say, but I give them as found after three years' growth at Bookham.

The summer pruning or pinching the side shoots is chiefly done by Mrs. Chrystie herself, and the plants are pure hard-pinched or spurred cordons. In one or two cases where shoots of about 5 inches in length were overlooked, they were fully fruited, and it was asked whether that fact did not rather favour the bearing of long spurs on the stems. But it was pointed out that once that method became general, the plants would soon be branching stems rather than true cordons. The annual summer pruning resulted in the production of abundant crops, and as the primary object was to secure fine clean fruit, it was very probable that the plants did in each case carry all the fruit they very well could. A mulching of long manure about the roots is found valuable,

Fig. 23.—Cordon Gooseberries.

and liberal soakings of liquid manure are given not only while the fruit is green and swelling, but also after it is gathered, to enable the spurs to plump up stout fruit buds.—A. D.

[A section of the sketch is taken as illustrative of Mrs. Chrystie's Gooseberries as they grow by the side of a path some 20 yards long in her garden. This method of culture affords a maximum amount of fruit from a minimum area of land. The cordons are easy to manage, the fruit easy to gather, and it is found that sparrows do not peck the buds from these cordons with the same pertinacity as they do from bushes, which afford them better foothold. Mrs. Chrystie is to be congratulated on turning the information she gained from a lecture to such good account, and in adding a feature of interest to her garden.]

ROYAL HORTICULTURAL SOCIETY.

August 10th.

Scientific Committee.—Present : Dr. M. T. Masters (in the chair) ; Rev. W. Wilks, Dr. Bonavia, and Rev. G. Henslow, Hon. Sec.

Vine Leaves Defective.—Mr. Ch. Pearson, of Chilwell, Notts, sent some Vine leaves, which appeared to have decayed prematurely. No fungus was present, and their defective appearance was attributable to too high cultivation, guano being freely used with great heat, and too much water, such being quite consistent with their appearance.

Ribes aureum in Fruit.—Dr. Masters exhibited a branch, bearing a raceme of ripe purple-black berries, of this common shrub. Though introduced by Mr. Douglas from California, the fruit has rarely if ever been seen before. It was received from Mr. Veitch.

Chrysanthemum Leaves Attacked by Grubs.—These were received from Mr. Jenkins and were forwarded to Mr. McLachlan, who reports "that the grubs are very young larvæ of the 'Silver Y Moth' (Plusia gamma). It will attack almost anything. They should be destroyed by hand-picking." The caterpillars are doing considerable damage to the Chrysanthemums.

Green-flowered Cross-leaved Heath.—Dr. Masters showed specimens from Kew of this unusual condition. It resembles the "wheat-eared" Carnations sent to the last meeting, and consists of an abnormal repetition of ciliated bracts ; the flower in the centre having been arrested in consequence of an attack by some grub.

Pelargoniums Decaying.—Examples of the varieties "Vesuvius" and "West Brighton" were shown, which had decayed from the collar upwards. It was attributed to too deep planting. They had large roots, and had been apparently quite healthy when planted, some being over two-year-old plants.

GALEANDRAS.

THESE can hardly be classed as popular Orchids, yet one comes across some one or other of the species frequently, so a few notes on their cultnre may not be out of place. They are pretty and interesting plants, but as a rule not showy enough to find favour among Orchid growers generally. All are American plants and like plenty of root and atmospheric moisture, both for the sake of promoting a quick healthy growth, and also with a view to keeping at bay insects, of which thrips and red spider may be set down as their most inveterate enemies. In habit they are erect, the stem-like pseudo-bulbs varying in height according to the species.

In every species I am acquainted with the flowers issue from the top of the pseudo-bulb, and are usually easily recognised by the cylindrical side lobes of the lip, which enfold the column and become spreading in front. Imported plants often arrive in bad order, and are then difficult to establish, but if fairly plump when received they may be treated similarly to Epidendrums of the upright growing distichous leaved section. I was very much disappointed a few years ago when importing a collection of plants of G. nivalis, a species none too common in collections. At first the plants appeared fairly good, and had a certain amount of green fresh foliage, but in the end I only saved two small plants.

Too much moisture at first after the long drying the plants have suffered is often responsible for the loss of many of them; but, on the other hand, unless sufficient is present to plump up the stems, they are almost as badly off as before. When growth begins to show, and it is evident that the roots are going to form, the plants may be potted in almost all clean crocks, only the slightest surfacing of peat fibre and sphagnum moss being allowed. The atmosphere can at this time be hardly kept too moist, but the roots should be on the dry side for a few weeks, in fact until they are freely moving about the compost.

Even for established plants of such as G. Baueri, G. cristata, or G. nivalis, a thick compost is unnecessary, an inch being ample for small plants, and a little more for larger specimens. The best position for them during the growing season is an almost unshaded one in the East Indian house, where the temperature is brisk, quickened by sun heat, and tempered by abundant moisture. Here the plants seem to enjoy life, and may stop until the flowers begin to show colour, when a little cooler position is advisable both to conserve the flowers and form a sufficient check to prevent their growing again, for it will be noticed that the spikes of bloom usually show when the pseudo-bulbs are about finished.

During late autumn and winter keep the plants at rest if possible, by arranging them in a house with a minimum temperature of about 50°, the atmosphere and roots at this season being kept much drier. At least once during the growing season, and also once while at rest, the plant should receive a good cleaning, every leaf and stem being thoroughly sponged. Gentle applications of the vaporising fumigator are also of assistance to this class of plant, as well as light sprinkling with tepid soft water during hot weather. Clean rain water, as I have often pointed out, is one of the very best insecticides, and, unlike many others, cannot possibly do any harm.

Galeandra is not a large genus, and those species mentioned below may be considered as the cream of them, several others being known, but either indistinct or small and insignificant. G. Baueri grows about a foot high, but the bulb does not thicken over the whole length. The blossoms appear in summer on drooping peduncles, the sepals and petals being olive green, the lips white on the outside where it enfolds the column, the front a pretty bright purple. There are several variations from the type, the best and most constant being G. B. lutea, in which the green almost gives place entirely to yellow, and the front of the lip is also brighter. G. cristata is a pretty dwarf-growing form, not unlike G. Devoniana in habit, but not half the size. The flowers, too, are smaller, and a pretty combination of rosy pink, white, and deep purple.

G. Devoniana is more generally grown, I think, than any, and although it does not attain the height under cultivation that it is said to naturally, it is a useful and free-flowering plant. The sepals and petals are purple in the centre, with a decided margin of greenish white all round each. The lip is striped with bright purple on a pure white ground, and much resembles that of G Baueri in shape. Sir Robert Schomburgk first discovered this plant near the Rio Negro in 1840. G. flaveola is a native of Venezuela, whence it was introduced about ten years ago, and has pretty yellow flowers, with a blackish purple centre. G. nivalis is one of the prettiest of all, the brownish-tinted outer segments showing nicely against the white lip, which latter is blotched with violet purple. Other kinds are G. Claesi, G. Dives, G. Harveyana, and G. minax, all more or less distinct from those described.—H. R R.

THE WHEREABOUTS OF VINE ROOTS.

MOST of us think we know where to find the roots of Grape Vines under our charge, but we meet with a surprise occasionally. The roots are naturally supposed to be located in the borders formed for their special benefit, and if they cannot possibly get out it is there where they will be found. As it happens it must be a very good boundary wall on a well made concrete floor to the border to prevent Vine roots finding their way through, and it is very certain ordinary brick and mortar walls are not often equal to confining them. In the case of a large span-roofed vinery of some note, the side walls were arched in the usual way with a view to forming an outside border when that inside the house was well filled with roots. The archways were, therefore, temporarily filled in with bricks and mortar, and owing to the inside border having been thought equal to the requirements of the Vine roots, the arches had never been opened.

Although very fine crops of Grapes were produced by the Vines for many years in succession (house and Vines are not less than twenty-five years old) there was yet something unsatisfactory about them—or more shanking going on than those in charge cared to admit. About five years ago a deep trench had to be cut for a water pipe about 20 feet from the vinery, and it was then discovered that Vine roots were spreading in all directions, particularly down in the clayey subsoil. A few roots had first found their way through crevices in the brickwork, and liking the new soil spread rapidly. That portion of the main roots between the brickwork was found to be flattened out in an extraordinary fashion, but beyond the wall they swelled to a great size. The gardener in charge preferring to have full control of the roots, cut away the whole of those through the wall, and took precautions to prevent others from also finding their way out. As this was done in the autumn, before the leaves were yellow, the Vines had time to form more roots in the inside border, and there were no signs during the next season of their having had their "toes cut" in such a drastic fashion. On the contrary they have steadily improved since, and at the present are carrying heavier and better crops than was ever seen on them before.

About the same time I was having a somewhat similar experience. In my case the roots had found their way through crevices in an ordinary brick foundation wall, crossed a gravel path, and taken possession of Asparagus beds beyond. Apparently these were more to their liking than the inside border—at any rate, I had good reason to be well satisfied with the crops of late Grapes those Vines produced, and under the circumstances decided not to interfere with these foraging roots. As a rule Asparagus beds are more liberally treated than Vine borders, the surfacings of manure, warmth, and moisture, coupled with non-disturbance, keeping Vine or other roots that steal into them active near the surface. Once, and only once, did I regret having to a certain extent lost control of the Vine roots. After an unusually dry autumn we had a deluge of rain, with the consequence that a rush of sap caused the rupturing of many berries. This would not have happened had we watered our Asparagus beds in August and September, for the bursting could not be prevented by free ventilation accompanied by fire heat.

Here, then, are two instances of Vine roots having escaped from the borders proper—one with marked ill effects accruing to the Vines, and the other with benefit to the Vines rather than otherwise. Others might be cited of accidental discoveries of the escape of roots, some with good and some with bad results. This capability of being able to forage for food has doubtless saved the lives of innumerable Vines, also serving to keep them in a fairly profitable condition. Planting them in inside borders, and overlooking the fact that they will do no good in dust-dry soil, has led to many failures, and the number would be far greater if the roots were unable to break loose.

Vine roots are supposed to have a strong predilection for outside borders, and as I have shown, and most Grape growers have discovered, they will leave or cease to increase in an inside border if they have access to moist soil outside. Acccording to my experience they object to restriction nearly as much in outside borders as they do in those under cover. What they revel in is fresh soil, naturally preferring good garden ground or an Asparagus bed to the stale close soil of an old border.

To make matters worse, inexperienced or thoughtless persons

begrudge the small breadth of outside border originally formed for the Vine roots, and must needs crop this with Vegetable Marrows, Tomatoes, and such-like, while in some cases the lady of the establishment insists upon the Vine border being covered with flowers. The very act of digging has the effect of driving the Vine roots down into the cold subsoil, and cropping the surface further aggravates the evil. If the roots are principally 12 inches or more below the surface sappy growth followed by wholesale shanking of berries is the result, the Vines getting into a most unsatisfactory condition, and it is either during or after cold wet summers that the worst progress is made. On the other hand, if the roots are by good management kept near the surface, only to be allowed to suffer from drought in a dry season, red spider and faulty colouring are the worst evils resulting.

When we know the roots are principally in the surface soil the least we can do is mulch early and water occasionally during dry weather. Unfortunately the difficulty in far too many cases, notably where amateurs are responsible for the treatment given, is to discover where the roots really are. They may be foraging on their own account, but if Dame Nature is unkind it is a poor look out for the Vines. Last season many Vines, with their roots nobody knows where, fared badly, and so they have again this season, and if my advice is taken something will be done next autumn towards remedying the original mistake of losing touch with them.—W. IGGULDEN.

MELON GROWING TROUBLES.

MELON growing is popular with the majority of gardeners, probably because the plants give a quick and ample return for the labour bestowed upon them. Well-grown fruits have also a noble appearance upon the dessert table, and their rich melting flesh is both delicious and wholesome in warm weather. It is really wonderful what a number of Melons are grown in some gardens where no special provision is made for their culture. Pits, frames, and houses of various descriptions are pressed into service, because they are free from their usual occupants, just long enough to give the opportunity of growing in them what may be termed a "catch crop."

As a matter of course, when grown in this way their culture is often attended with difficulties, but in many instances these may to a great extent be overcome by the exercise of a little ingenuity. I have grown many fine crops in cold pits, and in dry seasons like the present they usually succeed well in such positions; but should long periods of dull or wet weather prevail while the fruit is swelling and ripening it is no easy matter to bring the plants through safely. Ventilating is then an important matter, for unless the most is made of the little sun heat we get at such times, by closing as soon as the sky becomes overcast, canker and rot speedily play havoc with them. On the other hand, if an insufficient supply of moisture is given at closing time during bright weather red spider puts in appearance, and the energies of the plants are crippled. If, however, errors are avoided, paying crops of Melons may be grown in frames. Useful hints are conveyed in the following paragraph.

Plant on slightly raised mounds, keep the thinning and stopping of shoots regularly attended to; dress all cuts and wounds with a mixture of lime and soot, to dry up the sap quickly, and thus avoid risk from rot; in giving water at the roots choose, if possible, bright weather, and do not wet the soil for a couple of inches around the main stem.

Turning to Melon culture in heated houses and pits, the difficulties connected with the work are not usually so great; still, they are sometimes considerable. The plants revel in very high temperatures provided the proper balance between heat and moisture is maintained, and that the hot-water pipes are not situated too close to the main leaves and fruiting shoots. Unfortunately, however, many gardeners are obliged to grow the bulk of their Melons in houses where the latter conditions prove a great stumblingblock; such houses are often old Pine stoves, now used for growing both stove plants and Melons. Over a rather narrow walled-in bed at the front we sometimes find four hot-water pipes, so placed as to make it difficult to plant Melons on either side of them without the leaves of the main stem touching the pipes, and when trained to the trellis overhead they are little more than a foot from the pipes.

This state of affairs would perhaps be of little consequence if the heat could be regulated at will, but in many instances the Melon houses are in a long range, not heated on the modern principle of working each house independently of the others. It thus happens that the heat required for a particular house has first to pass through another, where a less amount is required. Undesirable though this state of affairs is, a combination of circumstances makes it impossible to arrange the crops growing in the various houses in a more suitable way. The difficulty we have to face is that of growing Melons in a house where both stems and foliage are far too close to hot-water pipes too highly heated, conditions especially favourable for the production and spread of that dread pest red spider.

The task of growing good Melons under such conditions is not, however, an impossible one. There are two ways out of the difficulty which I have practised successfully at different times. The first is this: remove all side shoots from the Melon plants until they have grown beyond the point at which the hot-water pipes are immediately beneath them. It simply means giving each plant a greater length of main stem and obtaining the crop from the upper portion. This causes a delay of about a week in securing the crops. The advantages, however, greatly overbalance this drawback, as the shoots bearing fruit can be kept perfectly free from red spider, and if the leaves on the main stem near the pipes become badly attacked they can easily be dressed with an insecticide, and when plenty of growth has been made about them removed altogether. If the wounds are then dressed with a mixture of powdered charcoal and lime there will be no danger of rot setting in at points of removal, because the great heat near will speedily harden the wounds made by pinching or cutting away the leaves.

The other plan is as follows:—Encase the top and front of the hot-water pipes with boards; the dry parching heat cannot then find its way directly to the leaves, but circulates from the pipes into the body of the house, at a point where the trellis is a good distance from the pipes. Another advantage gained by following this plan is that frequent syringings can be given without raising the great amount of vapour which would result from the practice whenever the pipes were very hot. This alone practically solves the difficulty, for Melons enjoy almost any amount of fire heat, provided plenty of moisture is given as well.

When Melons are grown under the conditions just named every particle of the plant must receive a thorough syringing at closing time during bright weather while the fruit is swelling. Should the weather be very bright the syringing ought to be repeated two hours later. At night, when the fires are banked up, a thorough damping of the floor of the house should be resorted to, and whenever the pipes at that time are quite hot the plants thoroughly syringed as well. Treated in this way, and given good attention in other respects, good crops may invariably be grown, even under such trying conditions. The appearance of red spider must at once be checked by sulphuring the pipes, and if possible raising the temperature of the house to 90° by fire heat. Before this is done, however, the condition of the soil about the roots ought to be clearly ascertained, and if this is in the least dry, give water.

When Melon plants are swelling heavy crops of fruit, they do not, as a rule, produce young growths very freely. This must be constantly borne in mind, and a few shoots left unstopped whenever the plants are gone over, as I am convinced that a frequent cause of collapse is the removal or stopping of every shoot on a given date. If this is done at a time when the fruits are swelling rapidly, they frequently fail to make further growth, and, as a natural consequence, to produce well-flavoured fruits. Canker and bacterial diseases are extremely difficult to deal with when once established, but I have no hesitation in saying that in almost, if not every instance, they are brought about through mistakes in management.—H. D.

HARDY FUCHSIAS.

THE use of the Fuchsia as a greenhouse plant is perhaps appreciated to its fullest extent; the value attached to some of the members of the same genus, though, as hardy shrubs does not appear to be so generally recognised. Although some of the species, together with the bulk of the varieties, cannot be said to be sufficiently hardy to withstand more than a few degrees of frost without disastrous results, there are still several which come safely through the ordeal of an ordinary English winter.

Of these some of the most noteworthy are F. globosa, F. gracilis, and F. macrostema, species natives of Chili; and F. exoniensis and Riccartoni, hybrids. The flowers of all resemble each other very closely in colour, in all cases the calyx being red and the corolla purple. The habit of each plant, however, is distinct, and each one has its special advantages. For hardiness and free flowering qualities none can beat Riccartoni. It does not make such long growths as some of the others, but they are held in a more upright position, showing off their numerous showy blossoms to the best possible advantage. In very severe winters the growths are usually killed to the ground, but as spring comes they quickly make fresh shoots. In places, however, where very severe frosts are not experienced the old wood, save at the tips, is not injured; consequently bushes several feet high are made.

For growing in the front of shrubberies these are excellent plants, the flowers being produced at a time when flowering shrubs are becoming scarce. A very pretty effect can be produced by planting F. Riccartoni rather thinly in a bed and filling up the spaces with Galtonia candicans,

the white flowers of the latter contrasting well with the former. In places where flowers are wanted in quantity for decoration the full length branches of these will be found acceptable.—W. D.

REFLECTIONS IN THE FLOWER GARDEN.

It is quite evident to people of cultivated taste how badly our flower gardens are planned from the standpoint of colour effect. There have been many declamations against summer bedding. But as our summers are so short, we ought to endeavour to make them as brilliant as possible, and this can be done if, instead of so much imitation, we behold aright the way Nature blends her colours in the rainbow, the autumn sunset, the plumage of birds, and in innumerable other ways. A knowledge of how the artist mixes his colours would aid us; but observation and reflection on the beautiful combinations of colours we may see around us in Nature and Art is the true standpoint, and I think I cannot do better than record one of the most effective pieces of bedding I have seen this year.

They were long borders in front of a noble range of glass houses at a fine old place in the south of Ireland, where the climate is more uniform and moister than in England. The planting had been done in straight lines, and this was the only detriment of what might have been pronounced a finished picture. The borders had been stocked early, and contained strong, healthy plants.

There were two borders; the first had a permanent edging of Gentiana acaulis, and the other plants were in continuous lines from front to back in the order named. A line of intense blue and profusely flowered Lobelia, white Viola, yellow Viola, Centaurea candidissima, Tropæolum Fire King (a mass of brilliant flowers), "Geranium" Crystal Palace Gem (flowers kept picked off), Iresine Lindeni, Flower of Spring "Geranium" (flowers kept picked off), and Lobelia cardinalis. The other border was also edged with Gentiana acaulis, next line white Lobelia, and others in the order named as follows:—Yellow Viola, white Viola, red Tropæolum, Sophia Dumaresque tricolor "Geranium," Iresine Lindeni, Flower of Spring "Geranium," yellow Calceolaria (robust and profusely flowered), and Lobelia cardinalis.

These borders were each 120 feet long, and in the centre between the two were two connection borders, intersected by cross walks filled with grand clumps of Alstrœmeria aurantiaca, A. chilensis, and A. aurea, also masses of Delphiniums and Gladiolus The Bride, and clumps of Sweet Peas represented Invincible, scarlet; Princess May, a lovely shade of pale blue; Lady Beaconsfield, a combination of salmon, pale rose, and primrose; Orange Prince, orange and scarlet; and Purple Prince. These were in separate clumps, and a point observed here was the avoidance of stakes too tall. They were not allowed to reach higher than the bottom of the flower stem proper, as, for instance, Delphiniums 3 feet from the ground instead of 5 feet, as is often the case; for Alstrœmerias 18 inches would be ample. By observing this rule stiffness and formality will in a great measure be obviated. The removal of the flowers from the bedding "Geraniums" in the borders mentioned is to prevent two shades of red spoiling the harmony.

Another border, in a different part of the same garden, was planted with circles, each of two colours, in harmonious contrast. They consisted in the order named of yellow and brown Calceolarias, French Marigolds and Perilla, blue Ageratum and Crystal Palace Gem "Geraniums," Sweet Alyssum, Mesembryanthemum, and Bronze "Geraniums."

I have observed the plan practised in the aforementioned borders followed in both public and private gardens—namely, the breaking up of what would otherwise be crude mixture by the use of white flowered or white foliage plants. But it has frequently been in what I shall call the alternating system, every alternate plant in the beds being white. This, although it prevents the clashing of inharmonious colours, is, to say the least, indistinct, confused, and heterogeneous. The ideal flower garden should have as much variety as possible, ruled, of course, by its size. Too much variety in a small space would be out of character.

But all flower gardens ought to have not only beds in which colour is the chief characteristic, but also those in which tall, noble, graceful, and majestic plants would display their forms, to break the flatness so frequently seen where only the ordinary flowering and low-growing coloured foliage plants are found. Then, also, with colour and form, plants emitting fragrant odours should not be forgotten. If our beds were circles, instead of other fanciful and geometric shapes, they would be easier to plant, and more effective in the display of colours. Beds of one colour, or two colours forming a harmony, instead of mixture which requires nice discernment and thought to be pleasing.

It is important to remember that all Nature's variety results from the combinations of the three primary colours, red, yellow and azure. From these with the addition of black and white, 800 different shades and tints are formed. To oppose two primary, as red and yellow, or red and blue, is crude and inharmonious. The same effect is caused by opposing a secondary colour with a primary from which it is formed, as yellow and scarlet (scarlet being formed by the mixture of red and yellow). So to have a pleasing harmony, let us have a primary opposed by a secondary formed from two other primaries, as yellow opposed by purple (which is formed by the mixture of red and blue). A combination of relative hues is pleasing and correct, as orange and scarlet, both formed from red and yellow, or crimson and purple, both formed from red and blue.

In the planting of beds with tall, graceful and noble foliage plants, I advocate only one variety in a bed, planted thinly so that their individual character may be seen, with a groundwork of some low-growing creeping plant to cover the earth. In addition to the many half-hardy and subtropical plants of ornamental form, permanent beds might be made of many plants seen only in herbaceous borders, as, for instance, the Plume Poppy (Bocconia cordata), Hyacinthus candicans, Tritoma Uvaria, Polygonum sachalinense, Sedum spectabile, Echinops, Eryngium amethystinum, Funkia Sieboldi, Funkia ovata variegata, Fuchsia Riccartoni, Hollyhocks, Rudbeckia hirta, Rudbeckia Newmani, Acer Negundo variegata, Hydrangea paniculata grandiflora, Farfugium grande, beds of Marguerite Carnations, and such free-flowering sorts as Raby Castle, Duchess of Fife, and Redbraes Picotee, and Mrs. Sinkins Pink; also plunged in pots, Lilium longiflorum, Lilium lancifolium rubrum, and the varieties of Lilium speciosum for groundwork or edgings, many hardy plants as the blue Shore Grass (Elymus arenarius), Dactylis glomerata, Cerastium tomentosum, Heuchera Richardsoni, Sedum glaucum, Sedum Lydium, Herniaria glabra, Antennaria tomentosa, and common Musk.

Of course, the use of tall and noble foliage plants in the flower garden must be regulated according to the size of the same, as proportion and balance is to be observed in Nature and Art, avoiding formality, stiffness, rigidity, and disjointed colour. Flowering Cannas, Fuchsias, and Begonias will be most effective in beds of one variety.—F. Street.

BRIEF NOTES ON ALPINE FLOWERS.

(*Continued from page* 121.)

Acæna argentea.

The Silvery Acæna in its flowering season suffers in comparison with the rosy-spined one by reason of its flower heads having no special colouring to give them beauty in the eye of the casual observer. It is not, however, in these that its charm exists, but in the silvery appearance of its leaves. These are not like bright polished silver, but are, as it were, dulled over so as to give the plant a more subdued tone of beauty. The leaves are larger than those of A. microphylla, which was mentioned on page 120, and the whole plant is more rambling in its ways. This is, in truth, its principal failing, as if placed among choice plants it is apt to overgrow and destroy them.

The best positions for the Silvery Acæna are on a sloping bank, hanging over a rocky shelf, or among the steps of the rock garden. It appears to flourish better in a dry place than A. microphylla, and to require less moisture. Another feature is its apparent indifference to sunshine or shade from its rays. A. argentea is very readily increased by means of division. It is a native of Chili, but is quite as hardy as its New Zealand relatives.

Bellis rotundifolia var. cœrulescens.

A long name for a little plant is this, and it is little wonder that those who grow it are content with calling it simply the "Blue Daisy," or, if more inclined to use Latin names, "Bellis cœrulescens." The more correct English name would be the "Bluish Daisy," not only as more nearly approaching the word cœrulescens, but also from the colouring being so pale that it cannot be called blue. In some soils the bluish tint is more pronounced than in others. The plant is a neat little one, with roundish green leaves and pretty single Daisy-like flowers. It comes from Algeria, and, like a good many other plants from Northern Africa, is not absolutely hardy in a good many gardens. In light soil and mild districts it is not only truly perennial, but increases very quickly at the root, so that it soon forms a good-sized plant.

Seeds can be obtained from some seedsmen, and the question of the possibility of increasing the depth of colouring in the flower by means of selection is one worthy of consideration by some amateur who has the time and space requisite. It might, and probably would be, possible in the course of a few years to raise and fix a deeper tint, so as to make the name of "Blue Daisy" an accurate description of the colour of the blooms. Six inches is its normal height, and this is seldom exceeded on suitable soils. B. r. cœrulescens grows freely in sandy soil on a sunny rockery. In colder districts it may be preserved in a cold frame in winter.

Campanula alliariæfolia.

This Bellflower is more frequently grown as a border plant than as a rock garden one. It is, however, better adapted for the rockery than the border, as its Foxglove-like habit looks more effective on an elevated position than on the level. It is not often found mentioned in gardening books, but is to be met with in gardens occasionally, sometimes under the name of C. lamifolia. The name of C. alliariæfolia is the one under which it is grown at Kew, and is that applied to the plant by Willdenow. It is a native of the Caucasus and adjoining districts. It does not appear to possess a trivial or "popular" name, and "Alliaria-leaved Bellflower" is not likely to commend itself to those in search of a pleasant name for the plants they care for. If I might suggest one, it would be the "Foxglove Bellflower," although this has the demerit of leading some to think that the flowers are purple instead of white.

C. alliariæfolia grows from 12 to 18 inches high, and has leaves rather resembling those of the Foxglove in general appearance, but in form more approaching those of the Lamium, whence, one would suppose, the name Lamium-leaved has been applied by some. The spike of pretty, long, bell-shaped flowers droops forward, and, perched well up on rockwork, is very attractive to many. This Bellflower is perfectly hardy, and a true perennial. It may be raised from seeds, and is also increased by division of the roots. Its habit is good, and as it gives little or no trouble, it deserves a place in more gardens than at present.—Alpinus.

(To be continued.)

Notes & Gleanings

EVENTS OF THE WEEK.—The shows that are fixed for days in the forthcoming week are numerous. Some of the most important are the National Co-operative at the Crystal Palace on Friday and Saturday; the summer show at Perth on the same dates; the R.H.S., and the Drill and Brighton on Tuesday; with Sandy on Thursday, 26th inst.

—— WEATHER IN LONDON.—Immediately after our last issue went to press on Wednesday rain fell very heavily for some time, as it did again on Thursday, when it was accompanied by thunder and lightning. Friday and Saturday were dull with occasional glimpses of bright sunshine and light showers, while on Sunday rain fell for several hours. No rain fell on Monday, but there was a slight drizzle on Tuesday morning. Wednesday was fine.

—— JULY WEATHER AT HODSOCK PRIORY.—Mean temperature, 60·9°. Maximum in the screen, 80·9° on the 30th; minimum in the screen, 38·5° on the 12th; minimum on the grass, 31·1° on the 8th. Two frosts on the grass. Sunshine, 220 hours, or 44 per cent. of the possible duration. Rainfall, 0·57 inch. Rain fell on six days. A fine bright month with warm days and very little rain.—J. MALLENDER, *Worksop*.

—— DESTRUCTION OF WILD FLOWERS.—At a recent meeting of the Essex Field Club, held at Easton Lodge, the residence of the Earl and Countess of Warwick, to consider the best methods of protecting our native flowers and annuals from extermination, Professor Boulger proposed, and it was carried, "That in view of the danger of extermination threatening many beautiful, rare, and interesting plants, all lovers of Nature should do their best to avoid this danger (*a*) by abstaining from wholesale collecting, collecting for merely individual private collections, needless rooting-up of specimens, attempting to cultivate wild specimens of refractory species, and purchasing such wild specimens from itinerant or other dealers; (*b*) by endeavouring to persuade others, especially school children, cottage gardeners, and dwellers in large towns, to a similar abstention."

—— DEATH OF SIR ISAAC HOLDEN, BART., M.P.—The death of this remarkable man on the 13th inst., reminds us of a pleasant visit we once paid to Oakworth, when the erection of his great winter garden, which is said to have cost £120,000, was just completed. His progress in life has been extraordinary. His father was a working miner, and his son, who was born eight years before the battle of Waterloo, began to earn his own living at the age of ten, in 1817. He worked in a cotton mill, and educated himself at night. He became a school teacher, inventor, and millionaire. His description of inventing the lucifer match is worth recording Here is the story:—"I found that the use of a flint and steel cost me a good deal of time and trouble, and as I was at the period lecturing on chemistry to my classes, I cast about me for some substitute for the flint and steel. In this way—in the year 1829—I hit upon the lucifer match. I lectured to the boys upon the subject and showed them how the light could be obtained. Mr. Greathead, the proprietor of the academy in which I lectured, urged me very earnestly to go to London and patent the invention, and he told me that a chemist (a friend of his who sent his sons to his academy) would furnish the capital required to take the patent. I positively refused to patent it, and told him that his friend, the chemist, was therefore at liberty to manufacture the matches. The way in which the matches afterwards gained a hold with the public undoubtedly turned my attention to inventions, and I regard this one discovery as the germ of all my after labours in the way of original discovery." His description of his habits and regimen is also noteworthy. "For years," said Sir Isaac, a year or two ago, "I have never walked less than eight miles a day, wet or fine; indeed, I seldom ride when I feel I can walk. I have an infinite belief in fresh fruit so far as diet is concerned, and for years I have breakfasted entirely on baked Apples, Bananas, Oranges, Grapes, and biscuits made of Banana flour and butter. I am no believer in suppers, and I think that elderly people should strenulously avoid farinaceous foods as a rule. When I do take any food at night, it is fruit always. I live largely by rule, and never felt better than I do now—but I have never adhered to such rules in an oppressive degree. One meal usually consists of animal food alone, and two meals of fruit and vegetables." Sir Isaac's baronetcy was granted in 1893.

—— ROYAL HORTICULTURAL SOCIETY.—The next meeting will be held on Tuesday, August 24th, in the Drill Hall, James Street, Victoria Street, Westminster, 1 to 5 P.M. A lecture on "Plums," by Mr. A. H. Pearson, will be given at three o'clock.

—— THE KING OF SIAM AT CHELSEA.—We are informed that on Sunday morning his Majesty King Chulalonkorn, accompanied by Prince Sanpasaht, Baron Sunthorn, and other members of his suite paid a visit to Mr. William Bull's establishment, King's Road, Chelsea, and inspected the new and rare plants that have been collected from all parts of the globe.

—— BEAUTY BY THE WAYSIDE.—The wild shrubs which skirt the waysides have a beauty beyond that of the cultivated exotics in spaded gardens; they cover the nakedness of stone walls with foliage and flowers; they give shelter to the birds and fruit for them, which is also a luxury to the children; they protect adjacent farm lands from winds, and constitute the most interesting embellishment of a rustic farm.—WILSON FLAGG.

—— GARDENING APPOINTMENTS.—Mr. H. W. Pitcher, head gardener to the late Mrs. Dunnage, Allbury House, Surbiton, has taken over the managership of the Surbiton Nurseries. Mr. R. Wardman, general foreman at Kirby Hall, York, the residence of Sir Henry M. Meysey Thompson, Bt., M.P., has succeeded Mr. W. Wallis as head gardener. Mr. C. Cawley, for upwards of two years gardener to W. M. Tidy, Esq., Lynton Croft, Caterham, has gone in a similar capacity to G. A. Touch, Esq., Eaton Tower, Caterham Valley.

—— BOSCOMBE HORTICULTURAL EXHIBITION.—The above opened on Tuesday. There were rain storms from 8.30 A.M. till twelve noon, but fine, with rather strong wind after. Some grand exhibits were staged in the open division. Mr. J. Cypher was first for the 200 feet group and for twelve stove and greenhouse plants; Mr. T. Wilkins second, and Mr. W. Vause third in each class. All were grand exhibits. There were good entries in the fruit classes, but unfortunately some of the produce was damaged in transit. Only second and third prizes were awarded in the collection of nine dishes. C. H. M. Ricketts, Esq., second; Sir J. W. Kelk, Bart., third. Three bunches white Grapes.—J. W. Fleming, Esq., first; Sir J. W. Kelk, second; and Lady Ashburton, third. Three bunches black Grapes.—J. W. Fleming, Esq., first; Mr. F. Ricardo, second; and Sir Wm. Pink, third. Collection of nine dishes of Vegetables.—Mr. T. Wilkins, first; Sir J. W. Kelk, second; C. H. M. Ricketts, Esq., third; and Marquis of Northampton, fourth. A fuller report will appear next week.

—— PRESENTATION TO MR. O. THOMAS.—On Saturday last an interesting ceremony took place at Frogmore, when the foremen and young gardeners presented Mr. Thomas, Her Majesty's head gardener, with a handsome silver waiter and an address of congratulation on his silver wedding day. The movement originated with the foremen, who wished to acknowledge in some way, as a body, Mr. Thomas' kindness and courtesy, also his encouragement and assistance to the young men. In a few days a good sum was subscribed, although the list was limited to the permanent staff of foremen and the young gardeners who have served under Mr. Thomas since he was appointed to Frogmore in 1891. It was intended as a surprise, and no intimation reached the recipient until the day previously, when he was requested to meet the foremen in the reading-room. On Saturday afternoon the proceedings commenced by the party being photographed in a group, with Mr. Thomas in the centre, followed by a repast. After luncheon Mr. Thomas proposed the health of the "Queen, and God bless her," which was heartily responded to by the company standing. Mr. Chennell, as Chairman of the Committee, then introduced the subject for which they had assembled, and called upon Mr. Edwards, Hon. Sec. to read the address, which, after heartily congratulating Mr. and Mrs. Thomas on their silver wedding, stated how gladly they availed themselves of the opportunity to testify to the courtesy and kindness of Mr. Thomas to his men, and of the respect and esteem in which he was held by them. It concluded by hoping that the same good relations might exist between them for many years to come, and begging his acceptance of a silver waiter as a slight memento of that happy occasion, with the names of the donors. Mr. Marr, the oldest employé, then handed the waiter to Mr. Thomas, beautifully engraved with the following inscription: "Presented to Mr. and Mrs. Thomas by the foremen and young gardeners, past and present, of the Royal Gardens, Windsor, as a token of respect, and with sincere congratulations on their silver wedding day, 14th August, 1897." Mr. Thomas, having suitably responded, proposed the health of the foremen.

—— Society of Jersey Gardeners.—There are almost sixty classes particularised in the schedule of the autumn show to be held under the auspices of the above Society on Thursday, November 5th, in the Oddfellows' Hall, Don Street. Some are for Chrysanthemums, others for Orchids, Primulas, and floral decorations. We do not anticipate that the English growers will have a try for the prizes, as for a group of Chrysanthemums 10 feet by 6 feet only 12s. 6d. is offered as the second prize, the first being named as "special," whatever that may mean. The same prizes are offered for twenty-four Japanese distinct. If any reader would like further particulars, let him write to the Hon. Secretary, Mr. J. M. Gibbs, Spring Bank, Valley-des-Vaux.

—— A Spin to Southwell.—Until recently I had not had the pleasure of paying a visit to the Southwell Nurseries. A cycling friend, who is a lover of Roses, wanted to see Mr. Merryweather's, and I wanted to see Bramley's Apple at home. We saw the Roses in different shapes and sizes, the best new and old varieties, in the best of health, but were a little too late for the flush of show blooms. For the first time I saw "Bramleys" in all stages and forms, from maidens to bearing standards, sturdy and bold. Though this Apple has spread far and wide, it is not so well known as it should be in the western counties, where growers as a rule are so loyal to the "locals." Having had enough walking for one afternoon, we took a rest until it was time for us to get awheel again.—John Ettle.

—— Growth Force.—The growth force of trees is something astounding. Roots have been known to overthrow stone walls by their continuous growth. In rocky woods one may frequently see trees growing in the clefts of rocks; and, although the cleft may have been but a few inches wide when the tree started into life, so great has been its growth force that, in maturity, the rock has been pushed apart as widely as the width of the trunk itself. Trees have been known to mislead surveyors. Everyone knows that a tree trunk, once formed, never grows longer; and yet survey marks made on trees have been known to be considerably higher when the tree grew older than when first made. In these instances the trees have been growing on flat rocks, and, by the increased thickening of the roots, these huge trunks have been lifted by the pressure of the roots upon the rock.—("Meehan's Monthly.")

—— A Tourist Guide to the Continent.—Acting under the authority of the Great Eastern Railway Company, Mr. Percy Lindley has prepared and published another of these most useful books, which ought to be in the possession of every continental traveller. The information is conveyed in a clear readable manner, maps and smaller illustrations of notable places embellishing the text. The chapter on cycling routes in Holland, Belgium, and Germany is excellent, and should be of the greatest assistance not alone to wheelmen, bnt to all others who propose visiting either or all of these countries. The book is published at 6d., a price which the large map alone is easily worth. This embraces Norway, Sweden, Denmark, Prussia, Holland, Austria, Hungary, Bavaria, Wurtemberg, and Switzerland, with clear indications how towns in these countries may be reached from London viâ Harwich and the Hook of Holland. This publication may be had from the office, 30, Fleet Street, or from the Continental Department, Great Eastern Railway, Liverpool Street Station.

—— Bramley, Surrey. — The annual local exhibition at this place was held, as is customary, in the beautiful park attached to Colonel Ricardo's residence, and the really lovely gardens and houses were all thrown open to visitors to the show without reserve. The competing products were chiefly from cottagers, and were, as is customary here, of excellent character. The show was greatly helped by various fine honorary exhibits, including a splendid collection of cut flowers, Roses being prominent, and hardy herbaceous things in rich profusion, from Messrs. J. Jackman & Sons, Woking. Mr. H. Shoesmith, also of Woking, sent various handsome Cactns Dahlias that attracted much attention; and Mr. W. Virgo of Wonersh had single and double Petunias, Roses, Dahlias, and large Cucumbers. A very fine and exceedingly gay group of plants, though rather too formally arranged, was set up by Mr. A. J. Joy, gardener to Mrs. Courage of Bramley. Other good groups came from Mr. Heather, gardener to E. R. Fisher Rowe, Esq.; Mr. Dyer, gardener to Cowley Lambert, Esq.; and Mr. Callaway, gardener to R. Worley, Esq. Cockscombs, well grown and of fine form, were seen in all these groups. Through the kindness of Col. Ricardo, the drum and fife band of the Grenadier Guards was brought down from London to play, and there was also a fine military band from Aldershot. Mr. Paddon, the gardener, left his beautiful products to be seen in the houses.

—— Earlier Opening of Kew Gardens.—Replying to a deputation on this subject, Mr. Akers-Douglas is reported to have said that the *raison d'être* of the existence of Kew Gardens was the valnable scientific work it did, and he could not be expected to do anything in the way of extending the hours during which the gardens were open to the general public if it would interfere with that work. The financial question did not weigh with him at all, for if he were convinced that the interests of science would not suffer by the earlier opening he should endeavour to persuade the Treasury to grant any extra money required. The sole question for consideration was whether the interests of science could be combined with the desire of the people for the earlier opening, and he regretted to say that the scientific men, whose opinions he had obtained, were entirely opposed to the proposal. From a scientific point of view the experiment had not been a success in Edinburgh, and they had no reason to anticipate any better result at Kew.

THE DECAY OF GARDENING.

The ferment behind that hideous phrase "up to date" has set its seal upon gardening, and year by year it becomes more apparent that the days of the high-class cultivator are numbered. I do not say that he views his own extinction with favour, but none the less the times are crowding him out, and his place is being taken by the "smart" man of a later and more feverish generation. Old gardeners do not realise the change that is being gradually brought about, because their employers' means are too limited to permit of their going to shows and other horticultural gatherings as they used to do; but when by chance one of them finds himself back amongst what should be the old scenes, he is shocked and dismayed at the signs he sees of the rapid deterioration of the craft.

The "old fossil," as he is now contemptuously termed by the young bloods of the profession, has a hard fate before him. To business men who make money quickly such old-fashioned ideas as mutual respect and trust between master and man are unknown. They come into the garden as they go into their counting-houses, and reckon up their gardeners as they reckon up their clerks—namely, as so much flesh and blood that is capable of a given amount of labour, worthy of a given amount of remuneration, and eventually, when the capability for performing that given quantity with the same expedition as they did in their younger days is gone, to be sent off with as much compunction as would be displayed in getting rid of a worn-out cart horse. The times have changed, and with them are changing that mutnal consideration and esteem which have led to so many triumphs for British horticulture.

A week or two ago I came upon a particularly instructive example of the new order of things. Fifty years ago an excellent gardener ruled on a large estate in the south of England, the name of which I could give if any good end would be served by it, which I strongly doubt. He trained his young men, amongst whom was one of his sons, in the same way as he himself had been trained before them. In due course the son succeeded the father, and worthily upheld the credit of his name. But hard times came for the noble employer, and eventually the place was sold to a trade king. The gardener was solicitons of following the fortunes of his old master, who, however, could do nothing for him, and eventually, at the earnest request of the trade king himself, he stayed on. For several years, indeed until the young gardener had in his turn grown grey, no fault was ever found with him, but within a week of his sixtieth birthday he was given a month's notice to leave, and in his place was installed an "up-to-date" gardener, a young man who, on the strength of a year or two in Kew and a year or two more in a large Orchid emporium, was considered capable of managing an extensive baronial garden.

It is this sort of thing that brings about the decadence of gardening, signs of which are now so abundant. Let us turn our attention to Grapes. Where are the magnificent examples of culture that we met with years ago? Few, I think, have been more constant visitors to the principal exhibitions during the last two decades than myself, and all too palpable it is to me that the standard of excellence is steadily declining. There must be many who sigh with me for a sight of the Grapes that Mr. Henderson used to show in the days that are gone. We do not see their like now, go where we will. Year after year that great cultivator staged splendid specimens of Black Hamburgh, the worst of which—if I may use such an expression where all were of such a high order of excellence—was in advance of the best that we see now. Can anyone deny this? Can anyore point to produce of the same marvellous quality as that of the famous old warrior? And if not, is it not a proof that my contention that there is much to regret in the present condition of gardening is true?

I can conceive nothing more ridiculous than the spectacle of a man idly indulging in pessimistic reflections, and I may as well disarm any opponent who contemplates evading my arguments by applying some such description to me, by asserting in the most emphatic manner that no such petty motives actuate me. I sound a word of warning because I believe it to be urgently called for. If unjustifiable pessimism is bad, not less so is that easy optimism which declares that all is going well

with the world, and that the right progress is being made in exactly the right way. A few years ago one of our influential dailies published a series of sensational articles on the state of the navy. Did people believe that what that journal said was true? Not at all. They took refuge in that optimism which is at once so cheap and so simple, and pooh-poohed the whole matter. But little by little it leaked out that all these damaging assertions were correct, and that if the moment swiftly came when we should have to fight for our national existence we should have neither ships nor men to do it with. Away with all this mutual back-scratching and childish vanity. Whether in regard to ships or gardens it is dangerous. Let us have a little wholesome truth-speaking. There never was a moment when light was worse wanted than it is to-day.

Our old gardeners were plain men, but they did noble work for Britain. Years ago, when I had not yet got out of my teens, my father was wont to take me to the leading shows, perchance with a view to sowing the first seeds of a sound garden training. It is well within my recollection that at a northern show many years ago, just how many I hardly care to recall, a great gardener near the Scottish border exhibited a bunch of Hamburghs that weighed close upon 20 lbs. No such bunches do we see now. Whether or not the skill that produced them is wanting amongst the gardeners of the rising generation, the fact remains that they are things of the past. I make no apology for thus reverting to the Grape. It is the king of fruits in the estimation of most gardeners. The times are surely not yet past when the condition of the vinery is an index to the gardener's skill. We hear much in these days about express Grape growing, and makers of Vine manures give us startling details of the marvellous results which they (and the manures) have achieved; but claims, however honestly made, are one thing and public exhibitions quite another. Turning to the examples of Grape growing that are to be met with in the great market establishments, I ask if any cultivator will give the same credit to them as to the splendid examples to which I have referred. You may grow Grapes by the acre, just as you may turn out sausages by the million, but in neither case is there the skill required that is needed to produce the very finest examples. It is as easy to grow a square acre of Grapes of a medium quality as it is to grow a square rod, provided the glass and other requirements are there; but neither glass nor money, be they ever so abundant, can turn out the noble bunches that we used to see.

I am venturing into dangerous quarters when I step into the Rose garden. Our rosarians may not be as great as their predecessors were in cultivation, but as writers they are far more formidable. Perhaps we got the better Roses in the old days from this very fact. Rose growers who display a consuming anxiety to trip each other up on controversial points have the less time to spare for their gardens. All accounts agree that the latest show of the National Society in London was the best ever held. But on what grounds? With scarcely an exception it was quantity that had impressed the critics. It is a sign of the times. Ever bulk and numbers instead of high excellence. No one wishes to say that the show was a bad one. It was a good show, and one that gave those who saw it pleasure; but if anyone wishes to claim that it was the equal of some shows which have preceded it, then in the light that shines reflected in my memory from the days of Baker, Jowett, and Grant I raise the flag of opposition. I do not think that the quality of Roses as grown by amateurs is better than it used to be years ago; I do not think it is so good. In spite of all the books that have been written of recent years there is, to my mind, a decline, and I attribute it to the absence of that thoroughness which distinguished the older generation of growers.

But perhaps the most marked deterioration is noticeable when we look into general outdoor fruit culture. The market man may be improving his methods under the effects of a great deal of outside pressure, but the gardener is assuredly not doing so. I see proofs of this almost every day; indeed, garden visiting, which used to be one of the greatest sources of enjoyment to every gardener, is shorn of much of its pleasure because of this falling off in the standard of outdoor fruit growing. From what unfortunate cause does it arise? Is it because indoor work alone is thought worthy of attention? It is the exception, and not the rule, to meet with perfectly trained trees. Gardeners either cannot or will not give the attention to this department that they used to do, and unless a determined effort is made to improve matters the time will speedily come when the condition of our garden fruits will be as disastrous as the state of the navy was a few years ago.

Specimen plants, we are told, have had their day. I am sorry for it. They may have been open to criticism as garden ornaments, but they were conducive to those habits of skill, patience, and continued interest that are so praiseworthy. I doubt if modern gardeners ever get to feel the affection for the small here-to-day-and-gone-to-morrow style of material which they had for their fine specimens. And if affection goes it will be a bad day for gardening.

Much more remains to be said on the decadence of gardening, but for the present I leave the subject.—A TRAVELLER.

[Our correspondent may "leave the subject," as he says, "for the present," but we shall be a little surprised if his views are accepted as beyond the pale of controversion by others not less capable of judging than himself. All the same he is entitled to express them since he has not sought to do so in an unpleasant way. He has no doubt seen a great deal in his "rounds," and it is rather to be hoped that his last one would take him to Shrewsbury.]

SHEFFIELD CHRYSANTHEMUM SOCIETY.

THE members held their monthly meeting on Wednesday, the 11th inst., in the Society's rooms. Mr. John G. Newsham was elected to the chair. Mr. C. Scott then read the third and final paper on Chrysanthemum culture.

The essayist commenced his concluding section of the subject by giving instructions for taking the bud for general and exhibition purposes, referring to those varieties that in this district are either too early or too late for the exhibition held in November. Watering, stimulating with liquid manure, protecting, and every matter necessary for the perfect development of the flowers, were successively dwelt upon, until, after instructions about dressing the blooms, they were finally deposited on the show boards for exhibition and competition. Like the previous sections of the essay, the final one was full of good practical advice and instruction, and gave very great satisfaction. Mr. C. Scott has been an exhibitor at the Society's annual show for eight years, and during that period has gained over 100 prizes, about seventy of them being firsts.

The exhibits for the evening were Tomatoes and Pompon Dahlias for professional and amateur members respectively. Messrs. W. Artindale and Son of the Sharrow Vale and Nether Green Nurseries exhibited a fine collection of Carnations, Picotees, and double and single Begonias; also a number of well grown herbaceous blooms. They were awarded the Society's certificate of merit, which they well deserved.

Numerous references were made by the members present to the death of Mr. W. K. Woodcock of the Victoria Nursery, Humberstone, who was one of the founders of this Society, and for many years Honorary Secretary until his removal from Sheffield. After that period he frequently officiated as judge at the shows, and always took great interest in the welfare of the Society for which he worked so hard during its early years. He was very highly spoken of, and his death greatly regretted. After the admission of new members a vote of thanks to the essayist and one to the Chairman were passed.

POTTING ROMAN HYACINTHS.

EARLY bulbs of Roman Hyacinths may now be placed in 4½ or 5-inch pots. Good firm bulbs should be selected, and as many arranged in the pots as each will conveniently hold. Prepare pots, crocks, and the compost before commencing. The ingredients forming the compost may consist of loam two parts, leaf soil one part, decomposed manure half a part, crushed charcoal and silver sand quarter part. Mix the whole thoroughly, and use moist.

The pots and crocks must be clean and dry. One large crock over the centre hole and a few smaller scattered over will be ample, making secure against soil washing in by a layer of moss or rough fibres from the compost. Fill in the compost about half the depth of the pot, gently shaking it down. On this place the bulbs closely together, four or five usually being the number which can be accommodated. Do not press them down hard, but fill in the compost over them, merely allowing the tips of the bulbs to be visible. When the potting is concluded stand the pots together on a surface impervious to worms. Coal ashes form a good base. Give the soil a good watering with a fine-rosed can.

After the pots have drained cover them over to the depth of 6 inches with leaf soil passed through a riddle, or with cocoa-nut fibre refuse. No further attention will be required until growth appears and advances an inch, when the pots must be removed from the plunging material. Place in a frame and shade from direct light, gradually inuring to the full light as the chlorophyll, or green colouring matter, becomes developed in the growth.

A cool very light position near the glass in a frame suits them admirably until the time when it is necessary to introduce them to a little heat and moisture for forcing into flower. After being taken out of the plunging material and exposed daily to light and air, watering must be duly attended to. The drying of the surface soil will indicate when water should be afforded. Admit air daily in favourable weather; this will keep the plants sturdy, and prevent any lengthening of the foliage. The roots, however, having well developed during the time the pots were covered in the plunging material, now increase rapidly. This is a great advantage in order for the flowers to develop early and freely when the plants are given the stimulus of increased temperature and a moist atmosphere to bring them into bloom.

Bulbs potted in August or early September may be had in flower in November, but when required for any given date it is best to allow plenty of time. Use firm sound bulbs, whether they are the largest or only of medium size.

The season for having Roman Hyacinths in flower may be extended by potting at intervals until October. September pottings will give plenty of time to have the plants in bloom at Christmas, or even earlier, and they may be retarded later. A temperature of 50° to 55° for about three weeks will bring them well into flower.—S.

WORDSLEY AND KINVER.

JULY was drawing to a close when the decision was arrived at to pay a visit to Wordsley and Kinver, in the fertile county of Worcester. Rapidly as the train sped on its way, one could see with pleasure the crops in the celebrated Vale of Evesham. Not that these are as heavy as they have been in the years immediately preceding —late frosts having told their tale in the lightness of the fruit here, as in many places over all the country. However, this may not be altogether unfavourable to the growers, as prices must be higher for the best produce, and it will allow the trees to recuperate after the tax that has been put upon their energies by the immense crops of the past few seasons. But it was not to enter into the aspects of fruit in Worcestershire that the journey was made, but to see the establishment of Messrs. E. Webb & Sons, at Wordsley, with the firm's seed farms at Kinver.

Alighting from the train at Stourbridge Junction a trap was found in waiting, and the drive through Stourbridge entered upon. The town is rather an old one, with narrow streets, but these being left behind a broad, hilly country road stretched in front with the houses of Wordsley showing in the distance. It is not a long drive, but a very pleasant one, and before the end of it the immense warehouses of our destination could be seen towering high above the surrounding buildings. The headquarters of the firm are not on the main road, but in an out of the way corner off one of the smaller streets of the village or town. It is only their size that makes them conspicuous from afar, and extensive though they appear from a distance they seem to enlarge materially when the place is actually reached.

WORDSLEY.

It is fitting that a few words should now be said about the business that has grown so rapidly under the proprietorship of the two brothers, by whom it was launched thirty-five years ago. Not that the Webbs of Wordsley were unknown prior to 1862. But the late Mr. Edward Webb was a mill owner, a glass manufacturer, besides other things, and not a seed grower, this section of the firm being started by his sons, Mr. William and Mr. Edward Webb, who control it still. From the elder brother many interesting particulars were learned, and a conversation with him goes far to explain the growth of the business, for it cannot be doubted that his straightforwardness, geniality, and clearsightedness have tended greatly in that direction. Both he and his brother, who was away at the time of the visit, give their personal supervision to the concern, which comprises so many different departments, each with its responsible manager, who reports direct to the principals themselves.

The divisions of the firm are really six in number, of which the oldest is the mill. Then there are the Hops, the wool, the manure manufactory, the farm seed, and lastly the garden seed, the latter being the juvenile section of the firm, having had its inception about twenty-two years ago. Considering the innumerable details connected with all these, it cannot be wondered at that the brothers decided to relinquish the glass works some time back, and devote their energies to the remainder, and for most men this would be more than sufficient. As Hop dealers Messrs. Webb are well known in the Borough Market, while their wool trade is not very much smaller. With these we have nothing to do, but a peep into the warehouses devoted to these products showed thousands of pockets of the one, and equally large numbers of bales of the other ready for placing on the market at the proper time. These two departments alone must entail a vast amount of hard work in buying and selling to the best advantage. The mill was not visited, as the time at disposal would not permit of it.

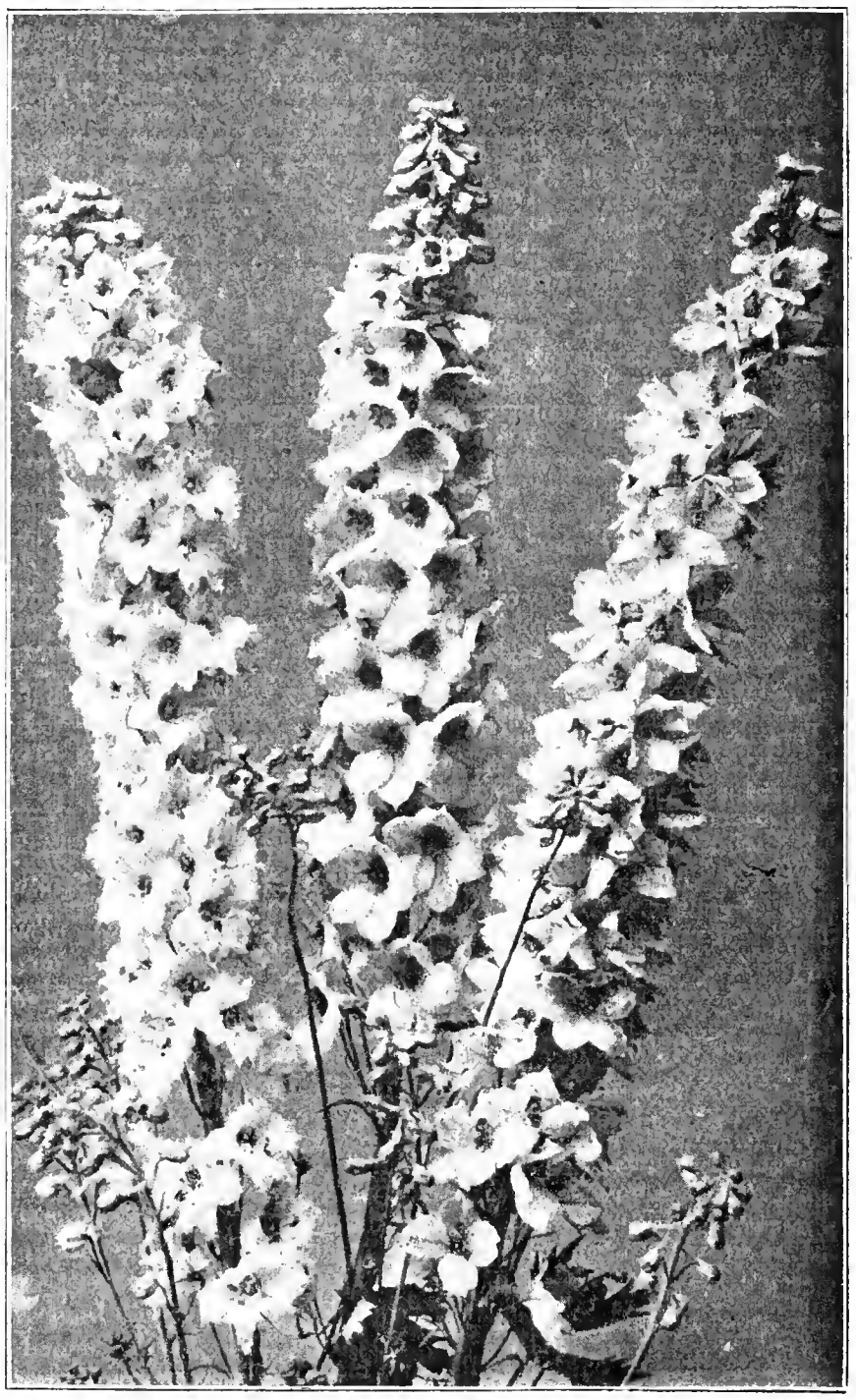

FIG. 24.—WEBBS' DELPHINIUM.

Regarding the manure works, which are situated at Saltney in Cheshire, it need not be said that they also could not be seen, but their extent is comparatively well known. It will be remembered that some years ago Messrs. Webb bought out Messrs. Proctor & Rylands, who originated the Saltney works. To these the business that had been established in manures at Wordsley was transferred, making one vast concern whence thousands of tons of artificial manures are distributed yearly throughout the length and breadth of the land. The mixtnres are mainly for agricultural purposes, though excellent compounds are made up for the garden. One point in connection with the manure works is the system of testing all the mixtures that are sold on the farms at Kinver. Not only those for the garden, but for the farm also are carefully tried with a view to ascertaining their value, and as minute records are kept of each trial practical results are readily arrived at. In addition to this, experiments are yearly made with fresh compounds so as to make all possible improvements on existing mixtures. We saw the varying effects of some of them when driving through the farms at Kinver, but details cannot be given here.

In the farm seed warehouses it was astonishing to see the immense quantities of Mangold Wurtzel and Swede seeds there were in stock, and which must have mounted to several thousands of bushels. While these formed the major portion of the bulk of seeds then in store, there were, of course, considerable amounts of all other seeds that come under the farm section. Trials of all of these are made at Kinver in order to insure the germinating power of the seeds, as well as to be certain that they are true to name. The arrangements for the fulfilling of orders here and in the garden seed department are admirable. Every facility is at hand to favour rapid work, and the employés, no doubt, take the fullest advantage thereof. The amount of floor space in the several warehouses, we were informed, exceeded 3 acres, and as most of it was occupied a slight idea may be formed of the quantities of stock on hand. This, of course, is inclusive of the Hop and wool stores. Throughout the warehouses fire-proof doors have recently been fitted.

There is a new department just being commenced at Wordsley which will become an important one in the course of a few years. For some time the firm has recognised the importance of growing its own stocks of seeds of the choice florists' flowers, but the absence of glass houses has been the effectual obstacle to its being done. This is now partially removed, for the erection of houses has commenced, three long span-roofed structures being completed ready for occupation. As they are light, well built, with ample accommodation for ventilating and heating on sound principles they will doubtless answer the purpose intended and give satisfactory results. More houses will be put up as they are required, and the department will eventually become an important as well as an interesting feature of this thriving business.

Another word or two about Wordsley, and Kinver must be noted. The block of buildings to which momentary attention is now to be given comprise the private rooms of the principals, of the cashier, and the chief clerk, with the general offices, and a reading-room for the employés. Thirty-five years ago a small portion of this sufficed for the whole of the seed business, and at the present moment the whole of it scarcely contains sufficient space for the clerical work that has to be done. Looking from this to the warehouses, and thinking of the business that is done, one is surprised at the ability and the indomitable perseverance of the two men who have built up the whole piece by piece, and are even now contemplating the erection of another warehouse, though the last one was only completed in 1895.

Kinver.

The farms where all the trials are conducted of manures, farm, and garden seeds are situated at Kinver, where about 1400 acres are under cultivation. This is some four miles from the central establishment to which we have referred in the preceding paragraphs. Driving towards the farm we pass the private residence of Mr. W. Webb, where the houses are splendidly stocked with plants, Begonias especially making a superb show when we had our peep in. The estate is a charming one, about a mile from the offices, and it is well maintained, the front of the residence looking over beautiful lawns, dotted with trees, to the main road. But we could not tarry here, or time would not have permitted the drive round and through the farm, a tour that was anticipated with a considerable amount of pleasure, as it was under the guidance of Mr. Harding, the head of the garden seed department, and the manager of all the trials. It was from him we learned that about 1000 acres of the Kinver farms were the freehold property of Messrs. Webb, the remainder being held by lease.

The progress made was not very rapid, owing to two things. First, the hilly nature of the road; and second, the frequency with which we stopped, now to see a splendid field of Barley, then one of Oats, of Mangold Wurtzel, of Swedes, or some other crop of more than ordinary excellence. Wheat was not seen in such large quantities, but here and there a fine field might be observed. But no matter what the crop or where it was situated, whether close to the farmstead or distant from it, the whole of the land was wonderfully clean—in decided contrast to much that was not in the occupation of the firm. Thorough working of the soil, judicious manuring with natural and chemical foods, together with thorough cleanliness, are standing orders at Kinver, and they are more than repaid.

While we propose giving more particular notice to the garden seed products, we cannot refrain from calling attention to a few of the leading things on the farm. Of the Barleys it is almost superfluous to say that Kinver Chevalier was unquestionably the best of the several excellent varieties grown, while of Oats the pride of position must be divided between New Winter Black and Newmarket White, both of which were superb. Pre-eminent amongst the Wheats stood a new one, known as Webbs' Standard, which is to come out this season for the first time. It is of splendid habit, with long ears of beautifnl grain. Like the firm's Challenge White this will in all probability take a very high place in the estimation of growers. Amongst Swedes Webbs' Imperial was looking far the best, while of Mangold Wurtzels there was little or nothing to choose between Golden King and Champion Yellow. Other crops, equally meritorious, cannot now be specifically mentioned.

Proceeding on our journey, we pass fields wholly devoted to trials of one or another kind of crop until we reach the garden seed department, where the rows of Peas, Beans, Cabbages, and the scores of beds of beautiful flowers excited a renewed interest. It was here, after driving for some two hours, that we left our trap for a time, so that all the plants in growth could be carefully examined. There had been no effort made to please the eye in the arrangement, as visitors are few. All the planning had been done with a view to insure ease in comparing one variety with another, and to be certain that all were growing under identical conditions. Notwithstanding the fact that effect had not been sought, the display as a whole was very charming, and would make a lovely picture for an artist whose hand and eye had the cunning to transfer the varying colours and forms to his canvas. Such would not be an easy task by any means, though many knights of the brush might think it a very simple thing to do.

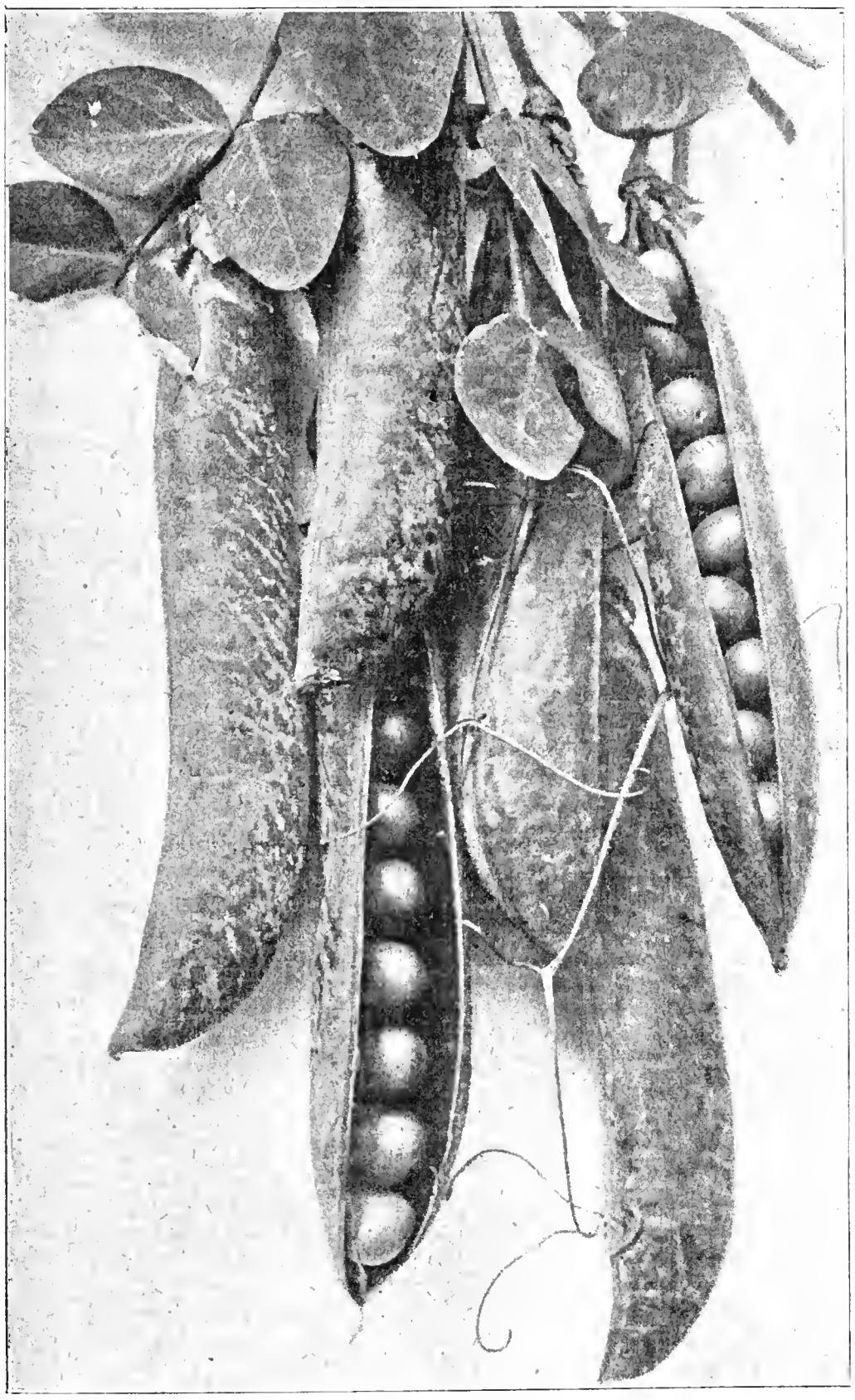

Fig. 25.—Pea Stourbridge Marrow.

The trials of Peas comprised several scores of varieties, good, bad, and indifferent, and of most of them there were two rows, sometimes more, and very occasionally only one. All had been given precisely similar treatment, and they had been carefully looked after, but no water had been given either to these or any other crops, for the simple reason that there was none to give. Of all the varieties the most conspicuous was Senator, which was carrying prodigious crops. Stourbridge Marrow (fig. 25) was also splendid, as also were Talisman, an exhibition variety, and several of the well-known older sorts. Broad Beans were over, but they had been grown in similar manner, the same system having been adopted with the French and Runner varieties, pride of place being taken by Hundredfold in the former and Eclipse in the latter. The collection of Lettuces was exceedingly interesting, most of the more popular varieties, with a few new ones, being represented. Very noticeable were Magnet and Criterion in the Cabbage section, with New Exhibition and Wordsley Gem of the Cos.

That grand Cabbage, Webb's Emperor, needs no word of praise here, as it is an established favourite with the majority of cultivators, as well on account of its handsome appearance as its excellent flavour and colour. As an early Cabbage First of All must occupy a prominent position in the long list of sorts now grown. Matchless Sprouts promised well, as did many of the firm's specialities in Cauliflowers, Broccolis, and Borecoles. The handsomest Beet was undoubtedly Reliance, a short crimson-topped variety of perfect form. Defiance Intermediate occupied the post of honour in the Carrot beds, though Market Favourite was, of its type, equally meritorious. Little Wonder Savoy looked as though it will render a good account of itself later, as did Kinver Globe. Very fine is Emerald Gem Endive, and the same may be said of Prizetaker Turnip, which is a white of great beauty. Of Onions it was too early to form a decided opinion, and as many other kinds of vegetables were in a similar state we will leave them and turn to the flowers.

The many beds of hardy annuals were making a lovely display, the plants appearing to be absolutely clothed with flowers. The dwarf Naturtiums were a blaze of scarlet and yellow, while the crimson hue of Linum grandiflorum rubrum looked glorious with the sun shining upon it. The superb Stocks, Zinnias, of all colours, the Cape Marigolds, Collinsias, Clarkias, Godetias, Bartonia aurea, and dozens of others,

each had its bed, and all were doing their best to insure a glorious display. The Asters will he most interesting when in flower, as the trial is of many of the well-known varieties from German and English seeds. Two Poppies arrested tbe eye as it roamed over the beds, one a pure white and the other a rose. The former was named White Swan and the latter Rosette, and they are amongst the finest with which we have met.

The fragrance around us told we were in proximity to the beds of Mignonette, of which there are several. The two best varieties are Golden Gem and Webb's Dwarf, the latter only 9 inches in height and the former 12. It is wonderful how proliferous these are, producing numbers of their perfectly clothed spikes on every plant, and making hoth of them splendid for bedding purposes. Then we noticed some plants of Carnations carrying an extraordinary numher of flowers, and we found that it was the firm's strain of mixed for bedding. Its excellence cannot he douhted, though, of course, some of the hlooms were not quite perfect. Calliopsis Sunheam and Golden King were gracefully beautiful, while several beds of annual Chrysanthemums were almost equally attractive. Delphiniums are a speciality, and in fig. 24 we give a photographic reproduction of three spikes that were cut at the farm in the flowering season. There were many others whose several merits entitle them to inclusion in these notes; but they, with the greenhouse florists' flowers, must wait until the next visit to Wordsley and Kinver is paid.

Enormous as are the quantities of all kinds of seeds grown here, it must not he supposed that it provides all the supply that is required. Such is by no means the case, for the firm has growing in various parts of the country Barley, Oats, Wheat, Potatoes, Swedes, Mangold Wurtzel, Peas, and other crops, covering an area of something between 15 and 20,000 acres. Glancing through the contract book, it could he seen that this enormous total was made up in lots of from 10 to 50 acres, and that Lincolnshire, Hereford, Worcester, Kent, Shropshire, Essex, and other counties each had a share. We can say no more of this our first visit to the Worcestershire home of the Webbs. We had a busy, an interesting, and instructive day, and tender to Mr. Wm. Webh our best thanks for his cordial reception, and his readiness to give all the information that was asked for.—STRANGER.

ABOUT SUBSOILS.

SUBSOIL may he described as the layer of earth immediately below the ameliorated portion, the former not heing usually interfered with in preparing tbe ground for crops with the plough or the spade. In spade husbandry the suhsoil may be about 12 inches from tbe surface downwards, whilst in ordinary farm operations the surface is not stirred deeper than 6 inches. There is, therefore, a great difference in soils as they are operated on in gardening and farming; and there is a difference in subsoils, though some vary little in composition from the surface soil, yet there is generally a great distinction between them in cultural value.

The surface or worked soil contains a very much larger proportion of organic matter and soluhle food for plants, and though liable to impoverishment by the crops, is henefited by the roots and other parts of such plants as remain after the crop is taken. These decay, and in combination with applied manures give the surface soil an immense advantage over the suhsoil, as it can derive little or no increase of organic matter through the comparative inaccessibility of air and rain. It must not, however, be overlooked that the surface soil is altered in texture by tbe crops. It is made more open by the roots that traverse it, and its friableness is increased by the operation of tillage. This admits of the freer access of the great solvents, air and rain, insuring a more speedy decomposition of organic matter, or the formation of it, this decomposition causing some of the soluhle matter to pass down to the subsoil, which, it is unnecessary to say, is a direct increase to the resources of the soil as it affects the crops. The compounds taken down remain in the subsoil in proportion to its retentive power. They exert influence, useful as food, or for food manufacture out of otherwise inert matter, or are injurious to plants from the lack of the necessary correctives essential to changing the compounds into plant food. Some soils may be almost sterile before they are exposed to air, or they may be of little value for useful crops until the deleterious suhstances in the subsoil have been changed by the application of some materials, as that of lime to peat or boggy soils, which are impregnated with the salts or oxides of iron.

If the subsoil he sand or gravel, or otherwise of a loose nature, the soluble compounds brought into it by rain soon pass away, so that there is less addition of useful food, and it follows, less danger of the deleterious matter being retained. If, on the other hand, the suhsoil is clay, it retains what is brought down by rain passing through the surface soil, which may in effect contribute to the soil's fertility, or prove deleterious through retaining the poisonous as well as the soluble compounds that are useful as food for plants. An efficient system of drainage, it is evident, must form the basis of all operations having for their object fitting the soil for a variety of crops, and for making the most of the cultural operations through the changes effected by the free access of air and rain, to assist in the disintegration of stuhborn material, and change the otherwise inert or injurious compounds by the application of corrective material into nutriment for crops.

Suhsoil is apt to be overlooked in deciding on the fertility of soils, yet it exerts a commanding influence on the surface soil. When the subsoil is open and sandy it is poor, through its lacking the means of retention of the soluble compounds brought into it from the surface soil hy rain, which drains away rapidly, and as evaporation from the surface soil is correspondingly free, the plants grown thereon suffer greatly in time of drought. It is evident that to materially improve such soil some substance must be employed that will render it more retentive alike of rain and of the manurial matter employed; the non-calcareous by a dressing of chalk or of clay marl, whichever may be most convenient, though the latter would perhaps be the most effective from its adding by the divisibility of its parts to the rooting area and the increased retention of the solvent compounds. It is well perhaps to notify that a siliceous marl is only valuable to a light soil in proportion to the amount of chalk present, and deleterious in relation to the percentage of silica or sand, on which account it is not nearly so beneficial for light soil as the clay marl having clay or alumina as a component part. To effect a permanent improvement, 100 cartloads per acre, mixed with the soil, but not so as to interfere with its tillage, is a proper quantity.

Some light soils have, beside a sandy or gravelly subsoil, an under stratum of clay, or conglomerated sediment of various earths largely impregnated with oxides of iron, which retains the water to a certain level, and from such Horsetails and Thistles spring strongly and in profusion. Such reservoirs of moisture are of no value, but the contrary, inasmuch as they contain substances poisonous to useful plants through stagnation. The water in such cases must be carried off hy drains, so as to prevent its lodging within 3 feet of the surface; indeed, all soils should be freed of water beyond their retentive power within 3 feet of the surface by an efficient system of drainage.

Where the suhsoil is clay, more or less impervious to water, the rain passing through the surface soil is retained, or otherwise, according to the degree of porosity, and collects in the low places or hollows, stagnation ensuing, forming organic acids in consequence of the absence of air acting on the decomposing remains of previous crops, or the remnants of the manures not appropriated by prior crops. The surface soil in consequence is rendered cold, sodden, and sour. Nothing but an efficient system of drainage can render such land for profitable cultivation, inasmuch as other operations are frustrated until the land is freed of the stagnant water and poisonous compounds. The drainage alone will change the nature of the subsoil, as the water dislodged hy the drains will be followed by air, and the organic elements will form nitric acid in addition to that brought into the soil by rain, whereby the poisonous compounds will be neutralised and nitrogenised, and food stored in the soil for the support of useful crops.

Clay subsoils should be well hroken up. For gardens, whether flower, vegetable, or fruit, the land should be trenched, not turning the top ameliorated soil under one or two spits of stubborn material, but keeping all the workable portion uppermost, the stiff material being kept under, yet disturbed in order to form passages for the free percolation of water through it, and to insure cavities for the storing of air, moisture, and warmth. Although the ameliorated soil should be kept at the top, some of the under layer may he hrought to the surface, as such contains substances required by plants that have passed into the subsoil, leaving the surface more or less exhausted. It is a direct means of affording new soil, which, exposed to the atmosphere, pierced hy frost, or baked by sun, becomes pulverised, mixing readily with the bulk, enhancing its fertility. There is the still further advantage of increased depth for roots, whilst the blending of the manures with the new soil improves the whole considerably, a larger food being provided and furnished with sustenance for crops.

Perhaps the greatest effect next to breaking up a clay soil is to burn some of the stuhhorn material; this alters its texture, rendering it more open, consequently more permeable to air, water, and the roots of plants. Its affinity for ammonia is also increased, and a much greater proportion of soluble alkalies, especially of potash and soda, provided; but that depends in a great measure on the degree of burning, for if hard burned the clay will be of the nature of hricks, and its alkaline constituents are then less soluble than of the clay in its original state. The most that should be sought by burning is that the clay may readily crumble. In that state 100 cartloads per acre is a fair dressing, applying it to the surface, and it will render a good account of the ammonia within reach, ahsorbing it from the atmosphere and from manures or by whatever means supplied.

In the case of very stubborn clays it is advantageous to mix some of the harder burned particles with the stubborn material at the bottom of the trenches, by which means the permeability of the soil to air, rain, and roots is made more durable, acting alike as a storehouse of moisture and food, from which the crops can draw supplies in times of drought, the roots being attracted downwards by the moisture they inadequately receive at the surface, and as they must in due course decay they tend to open the soil to a greater depth, and supply organic matter for its enrichment. In that way soils which have only a thin layer of ameliorated soil can, no matter how stuhborn the subsoil, be deepened, and in the course of a few years so much so that the ground can be trenched two or three spits deep, blending the whole mass with very great benefit to the crops. What most land needs is new soil brought to the surface to be ameliorated and enriched by the action of light, air, and rain, pulverised and made workable by frost or sun, in which state the soil derives the greatest benefit from the solid manures applied, and the whole staple is permanently improved.—A.

ROSES

Stray Notes.

There is something else required, I said, besides intelligent pruning to make Maréchal Niel a true perpetual bloomer as a standard in the open, and that is thorough protection from frost. This means protection in spring as well as winter, in March and April as well as December and January. It breaks very early by nature, but care must be taken of those first breaks, as from them and from the secondary shoots arising from the first shoots come very often the only buds. I will repeat how I protect mine, my garden being so subject to frost that Figs are generally killed to the ground unless protected. Short half-standards are planted in a slanting position, so that the head is not much more than a foot above the ground. In November the whole is pegged down to the ground, then covered with straw or similar material, and above that with earth, just as Mangolds are clamped in the fields. The advantage of this very thorough protection is the being able to regulate the period of the first bloom; you can raise and "start" them just when you like, as a Vine. Mine were only just breaking about the middle of May, nearly two months later than they would have done if left to themselves, and the flowering shoots were therefore quite untouched by frost. It is these shoots as a rule that will produce the successional blooms, but the rule has its exceptions. This year I had three or four shoots a yard long or more, springing from quite old wood, which produced blooms at the extremities, but this is exceptional. In unusual heat, such as we have had lately, the long flowerless shoots will sometimes break in side flowering shoots, and nurserymen often find, in a hot autumn, that the long maiden shoots which they have shortened because they have passed the stakes bear flowers pretty freely. Nevertheless, if left to itself, and to break when it will, the Rose will often be a poor bloomer, and a still worse perpetual.

But I had not any intention of representing Maréchal Niel as "a satisfactory garden Rose," whatever that may be meant to imply. "Garden Rose" has a specific meaning in N.R.S. nomenclature, and does not include Maréchal Niel. And if the term is taken to mean, as I fancy it sometimes is, a Rose that will appear at its best without any care being taken of it, I cannot give any opinion on such a matter, as I have no experience. My Roses are all taken care of, and would not give me so much pleasure if it were not owing to my care that they flourished. No small amount of such care, as well as good culture, must I am sure have been given to those magnificent blooms of Maréchal Niel which Messrs. D. Prior & Son showed on certain occasions this season, and the remembrance of them really makes me too impatient to continue a discussion upon a suggested comparison between this Rose and Medea.

Yes; I am sure—it seems only natural—that I take greater delight in a fine bloom whose beauty has been much enhanced by care and watchfulness. Surely this is the essence of the pleasure of competition at shows. If it is only the richness of your soil, or the excellence of your gardener, where does the personal element—the delight of having won by your own exertions—come in? If it is by your own cultivation, selection, protection and care that you can produce a perfect Souvenir d'Elise in full size and beauty, or a La Boule d'Or, erect, golden, pointed, with stiff long wide wings, which is plainly superior to all others, your toil and care has its full reward.

The mention of the latter Rose reminds me that two or three years ago—I think it must have been when I got the medal for it at Gloucester N.R.S.—my youngest daughter suddenly announced that she had made a riddle (charade). "My first is a fierce cow, my second is what you shut, my whole is a Rose." *Answer:* Bull-door. Forgive her—her years are tender.

"D., *Deal*," still seems to think that some other reason should be given for holding the Northern N.R.S Show at Norwich besides the obvious one that it is, literally and actually, a northern city. The "someone" who made the remark "waggishly" that it must be because both began with "Nor" was the Dean himself, at which I was. I confess, much surprised, because, of course, that *is* the reason. Northwich (Norwich) is the capital of the Northfolk (Norfolk) of the formerly separate kingdom of East Anglia. North, indeed, to East Anglia was the county of the Northfolk, for there is nothing to the north of it but the open sea, and very little to the west, as I fear was found out by travellers to it from the N.W.

It is more difficult to believe that it is actually a Norwich—northern city—as compared with the rest of England; but even this is true. If you lay a ruler across a map of England you will find it north of Wolverhampton and about level with Lichfield, and surely this is northern. I explained all this at a N.R.S. meeting, but am not surprised that people cannot understand it, for, oddly enough, I can hardly realise it myself. It is the railway that bothers one. When you go down the seventy miles to Ipswich by G.E.R. you take it for granted that you are going East, whereas it is really N.E. Down the Thames to Margate would be East, and after Ipswich the remaining forty-five miles to Norwich is due North.

I much regret that it is so inaccessible from the North and West, especially at the missing the Roses of Messrs. A. Dickson & Son, which are always most interesting at the northern exhibition. But there are a good many East Anglian exhibitors, and they have had many a weary journey to the N. and N.W. It is a matter of regret that there are so few amateurs in Norfolk itself, and practically no trade growers; but Colchester itself would confess that the Norfolk and Norwich is much the strongest and most flourishing of all East Anglian horticultural societies. I predicted that the N.R.S. would be thoroughly well received and treated at Norwich, and am heartily glad that it has generally been considered a success.

Among all the hardy annuals submitted to gardeners in the horticultural Press, nothing is more hardy or more annual than the advocacy of own-root Roses. It is a crop that never fails, and generally ripens about this time of year. It is in vain that rosarians repeat what their experience has taught them—that some few of the more vigorous H.P.'s will eventually, in suitable soil, make good plants on their own roots, but that even these are much longer in doing so, and do not flower as freely or give such good blooms as those worked on the Briar. It is no use; it will crop up again next year, I feel sure, and, perhaps, especially if the cutting with a heel is mentioned, be put forward as quite a new discovery, just as I fully expect we have not heard the last of the old saddle graft being a new invention. I do not think that Mr. W. Pea (page 116) meant that his Hero had Souvenir d'Elise, Innocente Pirola, and Madame de Watteville at their best on their own roots, though Dupuy Jamain he possibly might; but rosarians do not believe that "many a good Rose gives of its best and freshest when it has no caterer but its own inherent vigour," though a few may do pretty well.

Among a certain class of horticulturists there is now a strong bias for own roots for everything. There is no smoke without fire, and I think this feeling has been aroused by unnecessary and often careless grafting of certain ornamental plants and shrubs. But, as usual, the reactionary feelings and statements have gone too far. I read in a gardening journal not long ago an editorial on the standard Rose, strongly opposed to all "working," in which it was asserted that budding and grafting were practically the same, and standards were spoken of as grafted plants. I felt a strong desire "to offer some statements" in answer, but wiser counsels prevailed. I have done some such quixotic tilting at windmills before now, with the usual result, and have learnt my lesson.—W. R. Raillem.

P.S.—As the above seems not to have been in time for the last number, I would add a sentence or two. If Mr. Walter Easlea, after taking part for over twenty years in the cultivation of thousands of Maréchal Niel, never expects to get more than a single crop from it, it only emphasises what we all knew before—that no amount of time or experience will exempt us from having something yet to learn. Why "so few specimens are found at the summer exhibitions" is probably because few think it worth while to treat their plants as mentioned above.

Though "D., *Deal*," is chivalrous enough to come to my aid against the windmills, I cannot agree with him altogether on one point. He looks upon the pendent position of the flower out of doors as a defect, and says you see nothing but the outside petals of the flower, which are generally discoloured. True, if the bloom has not been protected; but cut it and turn it up, and it is still beautiful, the outside protecting petals being easily removed. If it had been erect the whole flower would have been spoiled; the fact of its being thoroughly pendent makes it often last longer in bad weather than other equally delicate Roses.

The effect of an abnormally heavy dew on the Tuesday morning before the Norwich Show, immediately followed by a tropical sun, was that all my erect Teas of any shade of red or pink, which were uncovered, were completely spoiled, and all the pendent blooms of any colour escaped.—W. R. R.

New Roses.

We can hardly call Mrs. W. J. Grant, Captain Hayward, Helen Keller, Crimson Rambler, and Mrs. R. G. Sharman Crawford new Roses in the sense that I mean in these notes. They are far too well known and appreciated. But a few of the more recent introductions, and some not yet in commerce, are well deserving of a note. Muriel Grahame does not need much comment, in addition to stating that it won the N.R.S. card of commendation in 1895, the N.R.S. gold medal in 1896, and the first year after introduction secured two of the silver medals as the best Tea or Noisette among amateurs' classes at the National Rose Society's meetings; once at the Crystal Palace, and again at Norwich. In every sense but colour Muriel Grahame is the same with me as Catherine Mermet and its other sport, The Bride.

Laurence Allen is another Rose that deserves special note. I may briefly describe it as a much improved Baroness Rothschild, but with a most delicious perfume. Comtesse de Canay promises well, and is a dark crimson with carmine shadings. The best new Hybrid Perpetual of last year is Tom Wood, a grandly built up cherry red, of great sub-

stance, and a Rose that will be certain to grow in favour when better known. It is a free grower and bloomer, lasting fresh a long time on the plant and when cut. In Ellen Drew we have a beautiful rosy cerise form of Duchesse de Morny. One of the greatest improvements in Roses is Mrs. Pierpont Morgan, a deeper coloured, larger, and better habited form of Madame Cusin. Ceres gives a new shade in climbing Roses, a very creamy white with a yellow and blush centre.

Antoine Rivoire is a valuable addition to the Hybrid Teas; so, too, are Souvenir de Madame Eugène Verdier, Alice Furon, and Charlotte Gillemot. Countess of Caledon is one of our best carmine rose shaded blooms, large, free, and a thoroughly perpetual bloomer, a grand new H. Tea. Rev. Alan Cheales is novel in colour, a pure lake with silvery reflex to the petals, very taking and a good grower. But the most uniquely coloured Rose I have seen this season is Messrs. W. Paul and Son's Empress Alexandra of Russia. On more than one occasion at the Drill Hall, but especially at the last Temple Show, this was in grand form. I cannot describe it better than as a rich lake red, orange, apricot, and a fiery crimson mingled together throughout the whole flower. Certainly one of the most charming Tea Roses we have, and not approached by any other variety as regards colour.

We have seen how very useful Kaiserin Augusta Victoria is, and now we have a climbing variety, which, if true to its parent in form and floriferousness, will become a prime favourite at once. Mrs. Harkness and Paul's Early Blush are synonymous; they are really fixed sports from Heinrich Schultheis, but I am sorry to say Merrie England, another sport from H. Schultheis, is not fixed. It is very attractive, and if constant would become our most popular striped Rose on account of its sweet scent, clear colouring, and freedom in growth and bloom. Plants, which I am positive were worked from the same shoot, have produced the Mrs. Harkness shade, and also the deep rosy crimson so prettily striped and flaked in Merrie England. Self-coloured flowers however good are apt to cause disappointment where one expected a striped bloom.

A few words upon the Roses not yet in commerce and I must close these rambling notes. Lady Clanmorris is a good Hybrid Tea, of Ernest Metz form and colour. Eileen, Bessie Brown, and First Cross are also H. Teas of great promise. The last named is supposed to be touched with other blood, but is a seedling from Mrs. W. J. Grant, fertilised with pollen from another bloom of the same variety. Killarney is one of the most promising H. Teas we have. It is grand in form and size, a soft salmony peach shade, with silvery edges. Of course it is difficult to give a decided opinion, or even description of a Rose only seen upon two occasions, but I am certain Killarney will please all who purchase it next spring. Mrs. Grahame promises well, and is a Tea that reminds me of Kaiserin Augusta Victoria and Madame Bravy combined. I have seen Mrs. Mawley in better form than at the Crystal Palace this year, and I am assured it will be much liked. It has the merits of free growth and flower, two grand points in its favour, while it is unique if rather dull in colour, and of good form.

These are all to come from Newtownards, where the only gold medal new Rose of the season was raised. This is a H.P. named Ulster, a charmingly deep salmon and pink shaded flower of immense substance and size. Other promising new Roses were Mrs. Frank Cant, a paler form of Madame G. Luizet, but quite distinct. B. R. Cater is a H.P. of the Helen Keller shade and form, but more cupped, and distinct in growth. It will, indeed, have to be good if it can in any way rival H. Keller. F. W. Sandford is a charming pale blush; and Royal Scarlet will probably make a grand bedding and decorative variety from the section of single flowers.—A. PIPER.

TOMATO NOTES.

RIPE TOMATOES.

"E. D. S." (pp. 149, 150) advises "picking half-coloured Tomatoes as they become ready, finishing the ripening on a warm sunny shelf, where they colour as rapidly as on the plant, without any deterioration in flavour."

Oh, "E. D. S.!" have you really compared such, for flavour, with fruits gathered absolutely ripe from the plant, and eaten quite fresh? If you have I have no more to say, for I do not want to be involved in any more comparisons. I simply give it as my opinion that fruits ripened on a shelf have not anything like the flavour of those thoroughly ripened on the plant, and eaten very soon after being gathered.

You cannot buy them. No grower for sale is so foolish as to let his fruits of any sort thoroughly ripen on the plant, with the result that they will neither travel nor keep, while the public will cheerfully buy Strawberries, for instance, that do not even *look* ripe.

Let the private grower test really quite ripe Tomatoes from his own plants, freshly gathered, and I am afraid he will hardly be able to appreciate those ripened on a shelf, however warm and sunny, afterwards.—W. R. RAILLEM.

TOMATO ROOTS.

DOUBTLESS, like many other readers of "our Journal," I was much interested in the above article by "E. D. S." in this week's Journal. Will he kindly say what are the proper means of "inducing a constant multiplication of healthy rootlets" in the early and other stages of growth?—S. S.

SOWING PARSLEY.

FRESH, good, and healthy Parsley is a standard everyday necessity in the majority of households. Should this crop from any reason fail, and a long blank occur in the supply, the importance of a constant supply is at once seen. Resolutions are then made by cultivators to avert the inconvenience in future by more frequent sowings made in several positions, where it is thought likely Parsley may succeed.

Spring sowings of Parsley are not calculated to give the unbroken supply demanded, because it begins early the following season to run to seed. The tufts of green, healthy leaves so suitable for culinary purposes then rapidly lose their colour and substance, which are transferred to the flower stem, and employed for perfecting the seed.

Instead of making frequent sowings at various periods of the year I adopt the plan of sowing in August. The plants from this sowing attain to a size sufficiently strong for them to pass the winter without succumbing to damp, which is a great enemy to Parsley in some climates in winter. It is possible in a dry, hot soil, and having to experience a long period of drought in summer, that a majority of plants from even this sowing may run to seed, and lessen the chances of securing good pickings.

Here it will be seen that a spring sowing may come in useful by providing a supply during the autumn and winter. Under ordinary circumstances, however, the previous August sowing should remain in good condition the whole of the year succeeding, or until the next sowing is fit for use.

The sowing made now may be regarded as constituting the main crop. The position assigned for it ought to be an open one, the soil not too rich, but well drained and fertile. Dig deeply, and well break up the particles, leaving the surface smooth and level according to the inclination of the ground. Dry, parching weather will render watering necessary, giving a good soaking with a rosed water can before sowing the seed. Broadcast sowing is the best. Do not sow too thickly. Carry out the sowing while the surface of the soil is moist from the watering. Immediately cover the seed with a thin coating of finely sifted soil obtained from under the potting bench, or any place where tolerably dry. A little shade in hot sunshine will prevent rapid evaporation, and insure a steady, even germination of the seed. Following this little attention will be needed beyond an occasional watering, thinning out any rank patches, and keeping the bed clear of weeds.

Some cultivators find it necessary to protect in winter, but this must be distinguished from closely confining the plants by surrounding with a frame, and keeping on the lights. The protection may be more of a simple character. A few lights supported on bricks serve to maintain the plants dry, while a free supply of air is always circulating about them. Parsley is hardy enough when it has attained a fair size, but liable to damp when small in winter, more especially near large towns.

Nearly all seedsmen possess good strains of Parsley, and such selected stock ought only to be employed, as it is quite as easy to cultivate good stock as inferior. Sutton's Selected Garnishing and Giant Curled have proved excellent in every way with me, and beds of them are not only useful but ornamental.—E. D. S.

GROWING CAMELLIAS.

HAVING referred (page 150) to a healthy plant, and noted how it may be made to fail or to flourish, it cannot but be useful to commence with an unhealthy plant and suggest how it may be improved. The stems have a black, wiry, hide-bound appearance; the leaves are greenish-yellow; the flowers few, because the majority of what buds there were fell off like nuts in the autumn. Let us turn such a plant out of the pot and examine the roots. What do we find? An inert mass of soil, possibly black sour peat, and something like a root or two trying to escape through the drainage, yet arrested by worms. This is no imaginative case. There are thousands of plants in that state—dying by degrees for the want of a fair chance to grow. They cannot get out of the pots and shake off the soil that is killing them; therefore we must help them. This must be done carefully. Every fresh root must be preserved. If the case is a bad one, there being a few white roots, but the majority black and dead, not only should all the soil be picked or shaken out, but the roots should be washed, as if washing a mop. Cut off the dead portions—indeed, cut until life is found; then, while still wet, dust the roots heavily with silver sand and repot in as small a pot as possible. Drain it well, and protect the drainage from the soil with clean turf fibre, which dust with soot. For a plant of the kind under notice this is the compost: Half rather light but decidedly turfy loam containing no lime, the remaining half very fibrous Heath or Azalea peat—not bog—and leaf soil from leaves that have not fermented; mark the condition. To this add crushed charcoal and silver sand liberally, say together, so as to form an eighth part of the bulk. Mix the whole thoroughly. If this compost will not incite the production of roots nothing will.

When should this be done? is the next question. It is best done in early spring, just as the plants are commencing growth, or trying to do so, by those who have a stove or other structure where the temperature ranges from 55° to 85°, and where syringing can be done freely and a moist atmosphere maintained. Those who have not such convenience, but possess a vinery in which the Vines start in a natural manner, may repot their Camellias when the Vine leaves fairly cover the roof, as the temperature suitable for Vines at that stage and onwards will be also

suitable for the plants under notice. If the pots can be placed on a bed of leaves or other moist base it will be decidedly advantageous to the plants. With only a greenhouse at disposal the repotting should be deferred until the night temperature is 60° or thereabouts, and the plants ought to be grouped where they can be kept as close as possible, also shaded. This, with light syringings, will lessen the necessity for frequently watering the soil, and healthy root action will be the sooner induced.

A good guide for repotting unhealthy Camellias when there was not the requisite convenience for dealing with them before, is when the young growths cease to extend, and just as the last-formed leaves are attaining their full size; but the longer the potting is deferred the greater must be the care in preserving the healthy roots and preventing them drying; and the more radical is the treatment, such as pruning off decayed parts and washing the roots, the greater is the necessity for heat, shade, and moisture for effecting the recovery of the plants.

Many Camellias, while not being so healthy as they should be, do not need to have the whole of the soil removed. The soil itself (and the condition of the roots) will suggest to what extent it should be picked out. When the plants are sufficiently healthy to form flower heads they may be repotted when these buds are about the size of Radish seeds, as if they are allowed to grow much larger before the roots are disturbed, as they must be to some extent in repotting, there is danger of their dropping, this mishap resulting in nine cases out of ten from defective root action, the tenth being immature wood and excessively luxuriant growth.

The practice of cutting down Camellias may be briefly alluded to. Any moderately healthy examples, but tall and loose, with naked branches, awkward and ungainly, may be cut down to any extent provided they can be placed in a warm, steaming atmosphere, where they will shortly bristle with young growths, and in a short time form handsome bushy specimens. Numbers of Camellias could be named as not worth 5s. each a few years ago that were subsequently cut down, treated well, and which could not now be purchased for as many pounds.

As to varieties. Camellias should be chosen on the principle of special adaptation to circumstances. Some may require small plants for small greenhouses, others free growers for large specimens, and others, again, sorts for covering the back walls of vineries and Peach houses, which can be furnished more attractively and profitably with these plants than any others.—J. H.

HORTICULTURAL SHOWS.

WESTON-SUPER-MARE.—August 10th.

This, the twentieth annual exhibition of the Society, proved to be one of the best all-round displays yet seen at Weston-super-Mare. It was held, as usual, in the Grove, and a better site for a flower show could not well be found. Everything passed off satisfactorily, and the courteous, hardworking Secretaries—Messrs. Thomas and Cox—together with a zealous influential Committee, are to be congratulated upon the result of their labours.

Liberal prizes were offered for twelve fine-foliaged and flowering plants, which attracted four competitors, a most imposing display being made. Mr. J. Cypher, Cheltenham, was first, having grand specimens. Mr. W. Rowland, gardener to W. Brock, Esq., Exeter, was a creditable second. The third prize went to Mr. W. Finch, Coventry, who had several good specimens, as well as some that were a long way past their best. Mr. G. Hallett, Bath, took the other prize. The competition with six flowering plants was equally good. Mr. Cypher led, Mr. W. Rowland was again a good second, and Mr. W. Finch third, similar positions being held by the two first-named exhibitors in the classes for single specimens. A seedling Dipladenia of an attractive flesh pink colour gained Mr. Rowland the first prize for a new or rare plant in flower, Mr. Cypher being second. Mr. Appleton, Weston-super-Mare, was first for four well-flowered Orchids, and Mr. W. Brooks, Weston-super-Mare, second. Mr. J. Cypher was first for six plants with ornamental foliage, showing grand specimens. Mr. Rowland was second, and Mr. Hallett third.

Ferns were admirably shown by Mr. W. Rowland, who took the first prize for nine specimens, the second prize going to Mr. W. Brooks. Mr. Rowland was first and Mr. Hallett second for Adiantums, while for hardy Ferns Mr. J. P. Capell, Weston-super-Mare, was well first. Fuchsias, Zonal Pelargoniums, Tuberous Begonias, Petunias, Balsams, Gloxinias, and Cockscombs were principally locally grown, and scarcely so good as seen at former shows. Table plants were particularly good, and the competition keen. Mr. G. Cole was first, Mr. J. B. Brain second, and Mr. W. K. Wait third. Two classes for groups arranged for effect were provided. Mr. W. Rowland was easily first for a group to occupy a space not exceeding 100 square feet, and his arrangement and the materials used were very pleasing; Mr G. Hallett was second, and Mr. W. Brooks third. For a smaller group Mr. Somerhayes, gardener to H. Pethick, Esq., was a good first; and Mr. W. Brooks second.

Cut flowers occupied all the tabling round one large tent, and made a most attractive display. The Roses were remarkably fresh and good. Mr. J. Mattock, Oxford, was placed first for twenty-four varieties; second, Messrs. J. Townsend & Sons, Worcester. For twelve varieties Mr. T. Hobbs, Bristol, took the lead, with Messrs. Jarman & Co., Chard, second, and Mr. G. Garraway, Bath, third. The best twelve Teas were also shown by Mr. J. Mattock, Messrs. Townsend & Sons following closely; third, Mr. G. Garraway. Dahlias were well represented. Mr. G. Humphries, Chippenham, had a stand of twenty-four varieties in perfect condition, and was easily first; second, Mr. W. Smith, Kingswood; third, Mr. T. Hobbs. Mr. Humphries was also first for Cactus varieties, and Mr. W. Smith second. Gladioli, Asters, Hollyhocks, Begonias, hardy perennials, and Carnations were staged by many exhibitors. Epergnes were numerous and tastefully filled. Mr. W. Brooks was first, and Mr. W. A. Ford second. Mr. J. B. Brain, Clifton, had the best ornamental device in fruit and flowers, the second prize going to Mr. T. Meakin. Mr. W. Brooks exhibited a lovely hand bouquet, and was easily first; second, Mr. J. West. The table decorations by ladies found plenty of admirers, but would have been more effective if given more tabling. The prizewinners were Mrs. W. M. Appleton, Miss P. Tyte, Mrs. W. B. Lillington, and Miss Diana Phillips.

One tent was wholly devoted to fruit and vegetables shown by professional gardeners. There was a slight falling off in both quantity and quality, but the display was yet highly creditable. For a collection of eight dishes of fruit, Mr. J. Lloyd, gardener to Vincent Stuckey, Esq, Langport, was well first, showing good Black Hamburgh and Muscat of Alexandria Grapes, a Queen Pine Apple, a grand seedling Melon, highly coloured Bellegarde Peaches, and Pineapple Nectarines, Morello Cherries and Brown Turkey Figs. Mr. A. Crossman, gardener to J. Brutton, Esq., Yeovil, was second, and Mr. J. McCullock, gardener to J. C. Godwin, Esq., third. With four dishes, Mr. Crossman was first, showing Madresfield Court Grape, Windsor Castle Melon, Dymond Peach and Pineapple Nectarine, all in admirable condition. Mr. J. Lloyd was a good second. The class for Black Hamburgh Grapes was well filled. Mr. J. McCullock was first, and Mr. G. Sutton, gardener to W. A. Todd, Esq., second, both having good clusters. In the any other Black class, Mr. W. Carpenter, gardener to A. R. Baily, Esq., Frome, was first with well coloured, medium sized bunches of Madresfield Court; second, Mr. J. West, with the same variety. Mr. W. Carpenter took the lead in the Muscat class with well ripened Muscat of Alexandria, the second prize going to Mr. R. Mason, gardener to the Rev. A. J. Burr. In the any other white class Mr. J. Marshall led with extra good Buckland Sweetwater; second, Mr. A. Crossman. In the various other fruit classes the most successful exhibitors were Messrs. Crossman. Lloyd, G. Garraway, Kitley, Chedzoy, J. Hall, J. T. Hebditch, and W. Perryman. Both gardeners and cottagers made a fine display of vegetables.

The most noteworthy among the non-competitive exhibits was a fine bank of flowering and ornamental foliage plants, rock plants, new and rare Water Lilies, and cut flowers in great variety arranged by Messrs. R. Veitch & Son, Exeter.

MALTON.—August 11th.

The Malton (Yorks) Horticultural Society held its thirty-eighth exhibition in the Orchard Field on Wednesday, August 11th. The weather was beautifully fine and hot, but tempered by a nice breeze. We have seen better shows at Malton. The cut flowers and plants were very good, but the vegetables and hardy fruits were not up to the standard. Doubtless the very dry season has had much to do with this.

The class for six stove and greenhouse plants in bloom was won by Mr. Nicholas, gardener to the Marquis of Zetland, with Dipladenia profusa, Erica Irbyana, Statice profusa, Erica Austiniana, Anthurium Scherzerianum, and Allamanda nobilis. Mr. Kitchen, Darlington, was second. Mr. Nicholas was also first for three ditto, and Mr. Kitchen second. For six ornamental or fine-foliage plants the same exhibitors secured the prizes. Four good exotic Ferns were staged by Mr. Kitchen, they were Leucostegia immersa, Microlepia hirta cristata, and Davallia fijiensis plumosa. Mr. R. Wyse, Auburn Hill, second, who had a good specimen of Adiantum gracillimum. Orchids were a poor show. For three plants Mr. Kitchen was first, W. H. Pearson, Esq., second. Six plants for dinner table decoration brought several competitors, Mr. Kitchen first, Messrs. G. Longster & Sons second, Mr. Jas. Horsley third. Caladinms, Fuchsias, Liliums, Geraniums, and other plants were well shown.

The principal class amongst cut flowers was for twenty-four Dahlias. Messrs. Clark & Sons, Rodney, Leeds, had a very good exhibit; Messrs. Harkness & Sons, Bedale, being second. For twelve ditto Messrs. Clark and Sons were again first, Mr. H. W. Taylor second, and Messrs. Harkness & Sons third. For twelve Fancy ditto Messrs. Clark & Sons first, and Mr. Knight second. Mr. J. D. Hutchinson, Kirby Moorside, was first for twelve bunches single Dahlias, in threes. Messrs. Harkness and Sons staged splendid spikes of Gladioli. Messrs. Longster & Sons were first for twelve named varieties of Sweet Peas.

In the class for herbaceous flowers Messrs. Harkness & Sons had a good collection. Mr. J. D. Hutchinson was second. Mr. G. Cottam, jun., Hull, was first for a tastefully arranged bridal bouquet. Messrs. Longster & Sons second. In reversed order these two exhibitors secured the prizes for a hand bouquet. Mr. G. Cottam staged the most tastefully arranged vase of flowers for table decoration. Mr. T. Watson, Malton, second. Considering the lateness of the season Roses were well shown, Messrs. Harkness & Sons carrying off all the first prizes in the principal classes.

There was not a great quantity of hothouse fruit, but the quality was good. The first class was for four varieties, a silver medal, given by Mr. Spingelhalter, F.R.Met.Soc., being added to the first prize. There was only one entry, Mr. J. S. Upex, gardener to the Hon. H. W. Fitzwilliam,

staging Black Hamburgh Grapes, Princess of Wales Peach, Pitmaston Orange Nectarine, and Brown Turkey Figs. For three bunches of Black Grapes Mr. F. Nicholas was first with large, good-shaped bunches of Madresfield Court; Mr. Upex was second with smaller bunches, much better finished, of the same variety: Messrs. Longster & Sons third. In the corresponding class for white Grapes, Mr. Hughes, gardener to G. Woodall, Esq, Scarboro', was first with Muscat of Alexandria; F. Allen, Esq., Scarboro', second with the same variety; Mr. J. S. Upex third with Foster's Seedling. Mr. Wyse was first both for green-flesh and scarlet-flesh Melons; C. Cammell, Esq., second. The last-named gentleman was first for Apricots; Mr. J. C. Tate, Bulmer, second. For a dish of Peaches, Mr. R. H. Wiles first, Mr. Jas. Horsley second. Mr. Upex was first for Nectarines. Hardy fruit was not so good as usual, especially Apples and Plums.

There were three entries for a collection of eight vegetables, all being good. Premier honours were won by Mr. J. Whitehead, his collection comprising Cauliflowers, Carrots, Onions, Tomatoes, Potatoes, Peas, Celery, Cucumbers. Mr. Thos. Waite second, Mr. G. Cottam third. For three varieties of Peas Mr. F. Hoggarth was first, Mr. C. Wiseman second, G. N. Dawnay, Esq., third. Mr. R. Dobson, Malton, was first for six varieties of Potatoes, Mr. Geo. Howe, Brawby, second. Mr. C. Cammell was first for twelve Tomatoes, Messrs. G. Longster and Sons second, H. S. Richardson, Esq., third.

Messrs. G. Longster & Sons, nurserymen, Malton, staged a group of plants, not for competition, comprising Palms, Ferns, Lilies, Bamboos, Gloxinias, &c., interspersed with a quantity of good plants of Tuberoses. The cottagers' class contained some very creditable exhibits.

HASTINGS AND ST. LEONARDS.—AUGUST 11TH.

It would be difficult to imagine a more suitable place for a flower show than the Alexandra Park if the approach were more inviting. The above was a rather better show than usual, and we must especially note the stove and greenhouse plants, fruit, and table decorations. Mr. T. Portnell, gardener to Sir A. Lamb, Bart., Battle, was in fine form, and we did not notice his defeat in a single case of the many classes in which he competed. The following are only a few of the chief classes at what was certainly a good all-round show for the season.

Mr. T. Portnell was ahead for stove and greenhouse plants. Mr. A. Gadd, gardener to P. A. Eagles, Esq., followed. The same order was kept for six stove and greenhouse plants, and for a single specimen in flower. Mr. Cloves, gardener to G. King, Esq., was first for four stove and greenhouse plants. For eight variegated and ornamental foliaged plants, Mr. Portnell again led Mr. A. Gadd. These were both good lots and clean. For exotic Ferns Mr. Portnell was a good first, and Mr. Morris, gardener to C. J. Ebden, Esq, was ahead for four plants. Mr. Portnell won for Fuchsias, for six plants in flower and for both groups—miscellaneous and Ferns.

Mr. Portnell led for twenty-four varieties of stove and greenhouse cut flowers. Mr. J. Stredwick, Silver Hill, Hastings, was very successful among Dahlias, winning for twelve Show or Fancy, for twelve bunches of Pompons, and for a similar number of Cactus varieties. For twenty-four cut Roses, Mr. T. Durrant Young, Roselands Nursery, Eastbourne, beat Mr. R. E. West, Reigate, the blooms of the first stand being very fresh and bright, but rather small. Table decorations were a feature, all being light and tasteful. Mr. A. Notcutt, St. Leonards, won in the open class for three stands; and Miss Smith, St. Leonards, was ahead in that of three stands for ladies only.

Vegetables were good and far too numerous to mention, except as regards the open collection, which was secured by Mr. Langton Apps, Ore, for a good lot. . Fruit was numerous and of good quality. Eight competed in a class for three bunches of Black Hamburgh Grapes, Mr. C. M. Carter, gardener to the Duchess of Cleveland, Battle, just beating Mr. J. Gore, Polegate, but the latter was well ahead with Gros Maroc in the succeeding class for three of any other black variety, and also for three of Buckland Sweetwater. Mr. Gore's collection of eight dishes was good, the best being Violette Hâtive Peach, Hero of Lockinge Melon, and Madresfield Court Grapes.

There were several non-competitive groups, but those from Messrs. Cheal & Sons, Crawley, and Mr. J. Charlton, Tunbridge Wells, were the best.

CARDIFF.—AUGUST 11TH AND 12TH.

The Cardiff and County Horticultural Society held its ninth annual exhibition, on the above dates, in the Sophia Gardens. The weather was fine, and there was a large gathering on the opening day. This the genial Secretary, Mr. H. Gillitt, and the Committee deserve, and it is to be hoped the Show will prove a success financially, as it undoubtedly was horticulturally. On the whole the exhibition was a creditable one; but special mention must be made to the bouquets, wreaths, and the charming display made by the table decorations; these all came in for a large share of public appreciation.

There were three groups arranged to occupy a space of 100 square feet. Mr. R. McLew was successful in carrying off first honours with a light arrangement; Messrs. Case and Crossling being second and third in the order named. For the best group occupying a space of 50 square feet, there were four entries. Mr. McLew was again successful with a tastefully arranged group, Crotons, Liliums and Palms being used to advantage; Mr. Carpenter was second, and Mr. J. Hockey third.

For the best six specimen stove and greenhouse plants, Mr. J. Lockyer, gardener to J. C. Hanbury, Esq., Pontypool Park, was first with Statice profusa, Erica Holfordi, Ixora Williamsi, Stephanotis floribunda and others; Mr. Carpenter, gardener to W. J. Buckley, Esq., Penyfour House, Llanelly, second. For the best three, Mr. J. Clarke, gardener to Col. Sir Ed. Hill, took first place, and Mr. McLew, gardener to J. Gunn, Esq., second. In the class for six fine-foliage plants only two exhibitors staged, Mr. Wm. Carpenter was a good first, and Mr. R. McLew second. For six Ferns, Mr. R. McLew was first, and Mr. J. Clarke, gardener to Col. Sir E. Hill, second. In a similar class for four, Mr. Hockey, gardener to G. Rutherford, Esq., was successful, and Mr. R. McLew, second.

Fuchsias were represented by nice plants, not large but fresh and well flowered. Mr. T. Hibbard was a splendid first, Mr. J. Clarke second. Mr. T. Hibbard also took first place for the best four Fuchsias. For the best six Geraniums (Zonal) Mr. H. Rix, gardener to C. Waldron, Esq., Llandaff, was first, and Mr. T. Hibbard second. Mr. T. Malpas staged the best twelve Begonias, a very nice lot. Mr. T. Clarke second. The best single specimen stove plant was Clerodendron Balfouri, staged by Mr. Lockyer, Mr. T. Clarke taking second place with Allamanda grandiflora. The class for twelve table plants was represented by two lots only; Mr. T. Clarke was awarded first, Mr. G. Wall second. Mr. Clarke was first in a similar class for six. For the best collection of tuberous Begonias to occupy a space of not less than 8 feet by 5 feet, Mr. J. Vickery, gardener to W. Geen, Esq., was first with a good collection, Mr. G. Wall second.

Mr. R. Crossling, Penarth, won first honours for twelve varieties H.P. Roses, three blooms of each; Mr. S. Treseder second. In the class for thirty-six Teas, in twelve varieties, Mr. S. Treseder was first; Mr. Crossling second. The last-named exhibitor was first for twenty-four, distinct; Mr. S. Treseder taking second place. Mr. Crossling was a good first for eighteen Teas, distinct; also for twelve Teas, any one variety, staging nice blooms of Maréchal Niel. Messrs. Townsend and Sons were first in the class for twelve H.P.'s, in one variety, with Mrs. J. Laing.

Messrs. Keynes, Williams & Co., Salisbury, were a good first for twelve bunches of Cactus Dahlias; and Mr. Wm. Treseder second. For the best twenty-four Show Dahlias the same exhibitors were successful, both staging fine blooms. Mr. Lockyer, Pontypool Park, was first for twelve bunches of stove or greenhouse cut flowers; Mrs. H. A. Smith second.

Dessert tables are always a feature at Cardiff, and the several arrangements at this Show proved no exception to the rule. For the best table, 8 feet by 4 feet, arranged with fruit and flowers, and laid for eight persons, Messrs. Case Bros., Queen Street, Cardiff, were a good first with a very bright and gracefully arranged exhibit. Messrs. Phelps & Co. were second. For the same arrangement, open to amateurs, Miss F. W. Jenkins was awarded the first prize, Miss Mabel Hill and Miss Rose Crouch second and third. Mr. A. Robinson was awarded first prize for the best arranged vase for table decoration. Bouquets, wreaths, and crosses were superb. Mr. A. E. Price took first place for the best bouquet for the hand; Messrs. Case Bros. second, and Mr. Wm. Treseder third. Messrs. Case Bros. and A. E. Price took first and second honours for a bride's bouquet. Messrs. Case Bros. were first for the best wreath, and A. E. Price for the best cross.

For the best six bunches of Grapes in three varieties Mr. R. Grindrod, gardener to P. S. Phillips, Esq., Hereford, was a good first, staging Gros Maroc, Black Hamburgh, and Bowood Muscat. A silver challenge cup is given in this class; Mr. Grindrod winning last year, the cup becomes his property. Mr. E. Silk, gardener to T. M. Frankler, Esq., second. The last named exhibitor took first for three bunches of Black Hamburgh; Mr. Gilbert Davidson second with smaller bunches, much better in colour than the first prize lot. For Muscats Mr. Wm. Hockey was first, and H. Pitt, Esq., second. Mr. Grindrod staged three good bunches of Gros Maroc for any other black; second, Mr. E. Silk. The last named was first for the best three bunches of white with Foster's Seedling, Mr. H. Townsend second. For the best green or white fleshed Melon Mr. E. Silk was first, and Mr. T. Malpas second. The Bishop of Llandaff was first with scarlet flesh Melons, showing a fine pair; and Mr. H. Townsend first for green or white fleshed; and the Bishop of Llandaff was first for the best scarlet fleshed.

In the class for the best six dishes of dessert fruit Mr. R. Grindrod was a good first with Black Hamburgh Grapes, Royal Favourite Melon, Bellegarde Peach, Lord Napier Nectarine, Early Large Apricots, and fine Brown Turkey Figs. H. Pitt, Esq., was a fair second. Mr. J. Hockey was first for six dishes of dessert Apples, and Mr. J. Bosham, Bassaleg, second. In the corresponding class for culinary the order of the prize-winners was reversed. Mr. R. Grindrod won for Peaches with fine Bellegarde, and Nectarines with nice fruit of Lord Napier. H. Pitt, Esq., was first for Pears and Cherries, also Plums.

Vegetables were not staged in such large quantities as at previous shows, but quality was not lacking. For Messrs. Sutton & Sons' special prize there were five stands. Mr. C. Foster, gardener to Morgan S. Williams, Esq., Aberpergwm, Glyn Neath, was first, showing Selected Ailsa Craig Onion, Solid White Celery, Best of All Runners, Windsor Castle Potatoes, Autumn Mammoth Cauliflower, and Perfection Tomato; General Lee second, and the Right Hon. Lord Aberdare third. Mr. C. Foster also won the prize given by Messrs. Webb & Son with Mammoth Red Celery, Early Mammoth Cauliflower, Regina Tomatoes, Eclipse Runners, Masterpiece Onion, and Goldfinder Potatoes. He was again first in the open class for nine vegetables, Mr. G. Shewring second. Collections of Potatoes were well shown by Mr. C. Foster, Mr. Townsend being second, and Mr. Jenkin Morgan third. Leeks were staged by Mr. Townsend, Mr. Foster winning with Carrots and round Potatoes, and Mr. Wm. More had the best dish of kidneys.

Messrs. Wm. Clibran & Son staged a very pleasing exhibit of hardy

cut flowers, including a fine lot of Violas in variety, Niphetos, Dorothy Tennant, Duchess of Fife, Picotee, Duke of Edinburgh, Colleen Bawn, and many others being very fine. Mr. H. Eckford made a fine show with a beautiful stand of Sweet Peas.

EPSOM.—AUGUST 12TH.

THE second annual exhibition of this Society, which was originally formed to give encouragement to allotment holders and cottagers, and now also includes classes for gardeners and ladies, was held in the grounds of Woodcote Hall, the residence of C. F. Murray, Esq., on this date. Honorary exhibits included from the nursery of Messrs. Morse and Son, Epsom, some noble Palms, used with good effect, down the centre table, and groups of Cannas and other plants. Mr. Glover, gardener to the Rev. E. W. Northey, showed a good group of Lilium lancifolium, Hydrangea paniculata, and Pancratiums. Mr. Will Taylor, Hampton, had excellent Roses; and Messrs. J Cheal & Sons, Crawley, put up a large collection of hardy flowers and Dahlias.

The best decorative groups of plants in competition came from Messrs. A. Bridges, gardener to A. Wales, Esq.; and Buss, gardener to A. G. Soden, Esq., both being gay. Mr. Buss staged the best six Begonias, and Mr. Bridges had the best six plants in and out of flower; Mr. Buss being second. The only exhibitor of twelve Cannas in pots and in bloom was Mr. Heslinbury. These, however, need to be stood on the ground and have a carpet of Fern to render them pleasing. In the ladies' class for dinner table decoration there was strong competition, and some very crude and very pleasing combinations were seen. The judgment of three ladies, as is customary, evoked profound dissatisfaction. The first prize was given to Miss Sterling for a rather heavy arrangement of the national colonrs red, white, and blue in scarlet Pelargoniums, blue Cornflowers, and flowering wild Parsley, and the garden Carrot. Miss Pettitt had a beautiful table of medium-sized soft coloured Roses with long drooping shoots. Lady Evans had one not less pleasing of rose-coloured Carnations and Gypsophila paniculata, and another had flowers of Gloriosa superba with Gypsophila. Mrs. P. Ralli set up a centrepiece of fine fruit from Ashtead Park, and she also obtained the first prize for hand bouquet of Orchids.

Some of the baskets shown, notably one of Gloxinias, Fern, and Smilax, were charming. Mr. Haseman, gardener to W. E. Bagshaw, Esq., had the best black Grapes in really finely finished Muscat Hamburghs; Mr. Osman, gardener to W. B. Braithwaite, Esq, coming second with good Black Hamburghs. In the white Grape class Mr. Bridges was first, and Mr. Osman second, both having Muscat of Alexandria. Mr. Turner, gardener to C. F. Murray, Esq., had the best four dishes of tender fruit in good Grapes, Peaches, Melon, and Jefferson Plums, and was also first with four dishes of hardy fruit. Mr. F. Tye, gardener to the Rev. J. Hart-Smith, had the best dishes of Apples, his Prince Albert being exceptionally good. There was good competition in all the cottagers' classes—indeed, in many cases exceptionally so, much more room being needed. This could easily be furnished by the adding of more tables to the centre one. Some sports on the lawn were provided during the afternoon, but these seemed to be too exclusive and *dilettante* to afford much pleasure to the general body of visitors who crowded the place later.

TAUNTON.—AUGUST 12TH.

THE Taunton summer exhibitions, of which thirty have now been held, are invariably popular. On the occasion under notice the entries were more numerous than usual, and it was equally satisfactory to note great crowds of visitors thronged the Vivary Park in which these shows are held. Mr. John S. Winsor makes an excellent Secretary, and he is ably assisted by a large Committee of leading townsmen.

In the premier class for twelve stove and greenhouse plants in flower, the prizes are respectively £20, £15, and £6, but these only attracted two exhibitors. Mr. J. Cypher, Cheltenham, won the first prize with grandly flowered specimens of Phœnocoma prolifera Barnesi, Bougainvillea glabra, B. Cypheri, Allamanda Hendersoni, A. nobilis, Erica Austiniana, E. Aitoniana, Ixora salicifolia, I. Prince of Orange, Statice intermedia, and S. profusa. Mr. W. Rowland, gardener to W. Brock, Esq., Exeter, took the second prize with an even and fresh collection. Similar positions were held by these exhibitors with six plants in flower, and also fine-foliaged plants, both showing grand specimens. Mr. Cypher was the most successful in the classes for single specimens, but had to take second place for six Orchids, Mr. J. Thomas, gardener to W. G. Marshall, Esq., Taunton, winning first prize.

In the classes for Tuberous Begonias, Gloxinias, and other plants, the principal exhibitors were Mr. J. Thomas; Mr. W. H. Bruford, gardener to S. Bennett, Esq.; Mr. H. Godding; Mr. C. Cooper, gardener to W. McAdam Smith, Esq.; Mr. J. Crossman, gardener to Col. Mount Batten, Yeovil; and Mr. S. Dight, gardener to the Rev. D. J. Pring. For a large group arranged for effect Mr. W. Rowland was first; Mr. W. Peel, gardener to Miss Todd, Southampton, second; and Mr. V. Slade, third.

Amateur growers, that is to say all who are not nurserymen, are capable of filling one large tent at Taunton with their exhibits, and did so worthily on this occasion. For twelve stove and greenhouse plants Mr. W. Rowland was first, and Mr. W. Peel second. For six plants Mr. Thomas was first. Mr. Rowland second, and Mr. S. Kirle, gardener to A. Sandford, Esq., third. Mr. Peel staged the best six plants with ornamental foliage, and Mr. Rowland was first for six exotic Ferns. Mr. Thomas was well first for four Orchids, and the best six pots of Japanese Lilies were shown by Mr. C. Cooper, gardener to W. McAdam Smith, Esq. Tuberous Begonias were grandly exhibited in this tent, Mr. Thomas having to be content with the second prize for double varieties, but was first for six single-flowering sorts. Mr. S. Dight, gardener to the Rev. D. J. Pring, being well first for doubles and second for singles.

Anything like a detailed account of the exhibits of cut flowers was out of the question owing to the crush. In the open class for thirty-six Roses, distinct, Mr. J. Mattock, Oxford, was first; Messrs. Townsend and Sons, Worcester, second; and Messrs. Jarman & Co., Chard, third. Similar positions were occupied for eighteen varieties. The best twelve blooms of Dahlias were shown by Mr. G. Humphries, the second prize going to Mr. T. Hobbs, Bristol, and the third to Messrs. T. Townsend and Sons. Mr. Humphries was first with twelve Fancy Dahlias, and Mr. W. Smith, Kingswood, second. Mr. Smith was first for Cactus and decorative varieties, Mr. Humphries first for Pompons, and Mr. J. Burgess, Bath, first for single flowering Dahlias, the competition being keen in each instance. In the amateurs' tent there was another fine display of cut flowers.

Six competed in the class for a dining table, arranged with decorations of fruit and flowers laid for eight persons. Mr. J. Cypher was first, Mrs. Anderson second, Miss L. E. Lock third, Mrs. McAlister fourth, Miss Currey fifth, and Miss P. Tyte highly commended. The taste displayed throughout was good, but Mr. Cypher's flowers and fruit were extra choice, and the arrangement fairly light. Messrs. J. Scott & Co., W. H. Coles, and Hayward Brothers were respectively first, second, and third for hand bouquets, and there was also a good display of ladies' sprays and gentlemen's buttonhole bouquets.

Fruit was not quite so extensively shown as usual, nor was the quality so good as in former years. The best collection of eight dishes was shown by Mr. J. Lloyd, who had well coloured bunches of Black Hamburgh and Muscat of Alexandria Grapes, a very fine seedling Melon, Bellegarde Peaches, and Pineapple Nectarines, Brown Turkey Figs, Quarrenden Apples, and Morello Cherries. Mr. A. Crossman, gardener to J. Brutton, Esq., Yeovil, was a good second, and Mr. W. Seward, gardener to Sir J. D. Ferguson Davie, Bart., a creditable third. For four dishes Mr. A. Crossman was first, showing well finished Madresfield Court Grapes and remarkably good Melon, Peaches and Nectarines. Mr. Lloyd was a close second, and Mr. Webber, gardener to G. F. Luttrell, Esq., third. Mr. Lloyd had the best three bunches of Black Hamburgh Grapes, Mr. Crossman following closely, while in the class for any other black variety Mr. W. Cheater, gardener to Sir W. Paily, was first with Madresfield Court, the second prize going to Mr. C. Cooper. Mr. Lloyd was first for well ripened bunches of Muscat of Alexandria, and Mr. W. Cheater second. Very good bunches of Buckland Sweetwater gained Mr. Webber the first prize in the class for any other white variety, the second prize going to Mr. C. Williams, gardener to C. D. Harrod, Esq. Mr. Lloyd staged the best Melon, a seedling of his own raising, the Frome Flower and Fruit Company the best Peaches, Mr. Crossman the best Nectarines, Mr. Webber the best Apricots; Mr. T. Somers, gardener to J. T. Hebditch, Esq., the best culinary Apples; and dessert Apples, Cherries, Plums, Gooseberries, and Currants were also fairly numerous and good in quality.

Vegetables were remarkably good and abundant. Mr. T. Wilkins, gardener to Lady Ivor Guest, Henstridge, was well first for a collection of eight varieties, showing fine examples. Mr. T. Harrison, gardener to Major Aldworth, Yeovil, was a good second; and Mr. W. Squire, gardener to C. J. Elton, Esq., third. Special prizes for collections were offered by Messrs. Webb & Son, Jarman & Co., and Sutton and Sons; Mr. T. Wilkins taking the first prize in each. Potatoes, Tomatoes, Onions, and other vegetables in season were admirably shown in the various single dish classes.

Non-competitive exhibits were numerous, and added considerably to the attractiveness of the show. The most prominent were those of Messrs. R. Veitch & Son, Exeter; Messrs. Jarman & Co., Chard; and Messrs. Kelway & Son, Langport.

THE YOUNG GARDENERS' DOMAIN.

MUSHROOMS FOR WINTER.

OF late years the value of this edible fungi has become more and more recognised, and in the majority of gardens provision is made for its cultivation in Mushroom houses. These houses are usually built in a position where the direct rays of the sun do not fall upon them. The inside is fitted with beds made of wood, iron, or slate, the latter being most suitable. These beds are usually about 3 feet wide, 6 feet long, and 1 foot deep, supported on pillars, and are usually three tiers high. Windows ought to be provided also, and these fitted with shutters so that light may be excluded when no one is working in the house. In such structures it is only advisable to attempt to grow Mushrooms during the late and early months—*e.g.*, commencing spawning early in October and concluding in March, for in the summer months the temperature of the house is too high and the atmosphere too dry for the crops to come to perfection. Stable litter is indispensable for making the beds, and it is easily procurable where several horses are kept in stalls or boxes.

Place the litter in a heap until the requisite quantity is obtained, and spread it in an open shed about 1 foot thick to allow the steam to escape. The long litter must be taken away from the manure; still, sufficient ought to be retained to prevent the bed becoming too solid, for when in that state it will hold too much water and become sodden, which is injurious to the extension of the spawn, and consequently prejudicial to the crop of Mushrooms. We turn the manure daily for nearly a fortnight, when it is sufficiently decomposed and sweetened for the purpose

for which it is intended. It is then placed in the beds, ramming it as firmly as possible.

When this has been done insert a "dipping" thermometer, and after the temperatnre has reached its highest point, and receded to about 80°, the bed may be spawned. Break the spawn into lumps about 2 inches square, and insert them 2 inches deep in the manure at a distance of 6 inches apart. Two or three days afterwards give a covering of fine loam an inch thick, making this level and firm by beating with a spade. With the manure properly moist, as it ought to be when used, the beds will not require watering. The surface soil must always be kept moist, and this can be done by a light covering of litter and occasional syringings. The paths and walls of the house must also be kept well damped. Keep the temperature of the house about 55°, dispensing with fire heat as much as possible. Mushrooms usually appear from five to six weeks after spawning, and the beds continue productive for two or three months.—ELVEDEN.

THOUGHTS ON COLOUR.

SOME praise the forms of flowers, others delight more in fragrance. and all enjoy their many tints and varied colours. We shall strive of course in this respect to please everybody, and have lovely forms, deliciously odoured, and pleasantly coloured joy givers. In the darkness of a black midnight hour have you ever paused in contemplation of the awfulness if such blackness never lifted? With these thoughts our thanks of gratitude go up for the good light of day and wisdom to see the beauties suffused through earth in a thousand hues.

Unchanging, yet ever pleasant, is the universality of greenery spread out in grassy lands and swaying foliage, and the restful blue sky, enlivened by clouds, shaded with tints undescribable. The reasons assigned for the preponderance of the soft ground-colour green are readily apparent and conclusive. It is of all colours the most restful to our eyes. It is quiet and sober, but not dull, harmonising or contrasting acceptably with most other shades or colours.

Green is a mixture of blue and yellow. Red, blue, and yellow are primitive colours and cannot be got by admixture. Purple is a union of red and blue; orange, of red and yellow, and so the list proceeds. Black or white are not strictly colours, yet a ray of sunlight seen through a prism gives a seven-coloured spectrum band of colours. These are red, orange, yellow, blue, green, indigo and violet colours of the rainbow.

It is by the aid of the prism that the chemical elements of any substance from the sun itself down to tobacco ash can be unfathomed. Long and patient labours by chemists have proved that all chemicals which burn give a characteristic colour or invariable breadth of line (when seen through the prism) on the spectrum. By careful observation of these lines, colour, breadth, and position the elements are found and named. As stated previously, the prism dissects the seven colours composing white light. Each colour shoots upward more or less, red least so, violet most, the others between. The red light is often seen at sunrise and set. Before the sun comes in view some few rays are striking the clouds which act like a prism, and red light suffuseth them, it being lowest in the order of refraction.

In explaining how flowers are coloured, Dr. Brewer states that according to the constitution of different petal surfaces divers lights are reflected, and give to our eyes the characteristic hues seen in flowers. A Rose was red because that ether—a subtle fluid supposed to permeate space—undulated so many millions of times per second on the surface exposed. Greater or less speed of undulation on various petal surfaces gave other colours. These colours were compared to a scale of music in which deep red or bright red might be likened to lower "C" or "E;" stringed or wired instruments to produce those sounds having to vibrate at the same rate as that which gave the red or other colour to the Rose.

In Professor McNab's small class-book of botany we find the statement, "In many of the higher plants a red sap exists in the epidermal cells, concealing the chlorophyll cells below." This shall, of course, refer to foliage. Coloured crystalloids are met with in petals. I have a book on "Gardening" written by a clergyman so long ago as 1714. In a chapter on "Budding" he relates "of a noble discovery by virtue of inoculation." He took a bud "from the yellow striped Jessamine," inoculating it "in a plain Jessamine tree," and states that every shoot gradually became yellow "by virtue of the circulation of the sap." (Sap circulation was at that time doubted by many.) One hundred and eighty-three years have passed since then, and do we yet know satisfactorily the causes of leaf variegation?

The grouping and harmonising of colour is a matter of importance among gardeners. Mr. Loudon, in his works, advocates for unity of expression massings, reasoning that mixed arrangements confuse the vision and disturb the sense of repose. On the other hand, William Wildsmith, Shirley Hibberd, and Charles St. J. Smith unite to praise the mixed style. For myself, I prefer the massing system, it being predominant in Nature, and most impressive and lasting. Linnæus, noble man, on seeing an English common all ablaze with yellow Gorse, was so affected that he fell on his knees with tearful eyes and thanked God for so glorious a sight.

Whatever laws apply to garden arrangements, different ones are practised in floral-work decorations. In Miss Malling's work on "Flowers, and how to arrange them," advice is given on colour choosing. "In floral groups there should be no conspicuous colour—nothing unduly prominent." Ground colours must be studied, and colours chosen which are proved to harmonise. "In all arrangements in which white comes in so suitably, a caution is very necessary against its too frequent use, though it is a tempting means of separating antagonistic colours. White is so poverising, that even brilliant colours are made poor and trivial by its superabundance." It is cold and chilling. "In groups of white a little colour gives tone and relief."

Harmonising colours are: "Rose with a *little* blue; blue with a little rose; white with mauve or lilac, and sometimes a little primrose; dark purple and primrose; cerise or scarlet and white; blue shaded, with a mixture of white and rose; rose shaded, also with blue and white;" brilliant yellow and deep black. These are charming.

The flowers themselves should be light and free, using heavy masses mainly for distant effects. Dark green is usually most appropriate with purely tinted heavy flowers. Grass green is superb in artificial light. It is worth one's while to note the changes wrought on colours by altered lights; some are brilliant, others soft, all are somewhat affected. I have been vainly trying to understand how "stained" glass sends forth a light coloured like itself. It must be by polarisation, and polarisation is a change produced on clear light by a series of reflections or transmission through crystals. (Crystals are bodies of any colour, generally angularly shaped.)

The colours of many flowers require to be peered into, studied, and reasoned. If we have a cross or union of two colours then at once—when describing—mentally reason whether this colour or that, united, would produce a hue like the one before you, and thus till satisfied. Practice alone will make perfect. If you wish to be a good gardener, and raise the profession, then you must consider the subject of "colour" in its many bearings. Write out the names of every colour you have heard or read of, and then, as "An Old Boy" says, "Be inspired to know" and remember their individuality and harmonious arrangement.—A YOUNG SCOT.

FRUIT FORCING.

Cucumbers.—Old plants, whether in houses, pits, or frames, which have been bearing from an early part of the season, produce fruit about this time, or soon afterwards, knobby ended, and essential as these are for seed, they are indifferent for use. Besides, seed bearing is fatal to the production in quantity of useful fruit. Old plants, however, may be kept in a bearing condition by cutting out the old growths and encouraging young, so as to insure a succession of bearing wood, yet the fruit is more or less liable to come knobbed. Train the young growths thinly, removing old leaves to afford room for new growths, and stop at one or two joints beyond the fruit. Remove the surface soil where it can be done without injury to the roots, and supply fresh lumpy loam. Plants in frames that have been bearing some time will be restored to vigour by a free thinning out of the old growths and the addition of a little fresh loam, giving a moderate watering and a sprinkling over the foliage on fine afternoons, closing at about 3 P.M. With linings to the beds, and the protection of mats over the lights, Cucumbers will be produced for a lengthened period.

Autumn-fruiting Plants.—When a supply of Cucumbers is wanted in late summer and autumn young plants afford them much better than old ones, either in frames or houses. Therefore, the plants raised some time ago and planted out should be encouraged to make a strong growth by earthing the roots betimes, applying enough soil each time to cover those protruding, and taking care to have the soil moist and warm. Supply water to the roots only when wanted, and give a thorough supply each time. Syringe about 3 P.M., damping in the morning, at noon and in the evening in bright weather. Maintain a night temperature of 65° to 70°, 70° to 75° by day artificially, 80° to 90° from sun heat, and close sufficiently early to rise to 90°, 95°, or even 100°. Train the growths rather thinly, allowing about 12 inches between the side growths, and stop them about every foot's growth to give the needful fruiting and furnishing shoots. Remove all fruits and male flowers as they show so as to induce a sturdy habit, the beginning of September being sufficiently early to allow fruit to show for cutting at the end of the month, then by cropping lightly fruit will be had in full supply later on, when it is most wanted; the plants, however, will give fruit from the early part of September if desired, and not being over-burdened, keep up a succession till the new year or longer. Avoid overfeeding, as it only induces fungoid diseases and favours root eelworm attack. Secure plenty of roots by sweet compost, and sturdy growth by top-dressing of fertilisers and judicious ventilation with full exposure of the foliage to the light.

Houses for Winter Fruit.—The structure must be light and efficiently heated both at top and bottom, and means of ventilation be provided so that air can be admitted when necessary without creating a prejudicial draught. The plants will have been raised from seed, say about the 10th of this month. Pot the plants as soon as ready, keep them near the glass, transfer into larger pots as they require more root space, and place a small stick to each for its support, growing the plants without stopping, but rubbing off side shoots as they appear to the height of the trellis. In the meanwhile the house should be cleansed and repaired or painting completed. Remove all the old soil, and make everything as sweet as possible, so that the plants may have a chance.

Winter Cucumber growing is much easier to write about than to practise successfully.

Figs.—*Earliest Forced Trees.*—For the earliest crops, trees in pots are the most suitable, and the most reliable varieties are Early Violet, St. John's, Pingo de Mel, and Brown Turkey, as they give the best returns and are surest in the first crop. The trees may now be planted outside if the wood be ripe; but if there is any doubt about it, continue them under glass with a free circulation of air. These are matters on which the cultivator will need to exercise judgment. In either case the trees must not suffer for water at the roots, and any of these extending beyond the pots should be cut off, affording water only to keep the foliage fresh.

The earliest forced planted-out trees will now be ripening the young wood, and air may be given very liberally, watering being confined to keeping the foliage from becoming limp. If, however, the second crop is not yet ripened, moderate in the soil, and even atmosphere will be necessary, with a free circulation of air to insure high quality in the fruit. When the fruit is all gathered, the wood not further required should be cut away in favour of the successional growths, and these being allowed to point towards the light will become well matured at their extremities, which is the chief thing to secure a full first crop another season.

Unsatisfactory Trees.—If any of those planted out in house grow too rampantly, root-pruning should be resorted to and the roots confined to a narrow border not more than half the width of the trellis, grand crops being had from trees in 3 to 4 feet width of border. But to secure a satisfactory first crop another season it is necessary to thoroughly ripen the wood. Trees, therefore, which are unsatisfactory in cropping should have a trench taken out as deeply as the roots, at a distance of 3 or 4 feet from the stem, and all the roots being detached the tendency to a late growth will be checked, and the wood will ripen if thinly disposed, and the points of the shoots allowed to grow up to the light instead of being closely tied down will form embryonic Figs. This should be attended to as soon as the fruit is gathered, and the trees may be lifted as soon as the leaves give indications of falling, replanting in fresh soil. If the drainage be defective, place in 12 inches of rather rough brick rubble, and 3 inches thickness of old mortar rubbish, using the finer parts to the extent of a fifth with the soil, which may consist of any good, rather strong, but porous loam with a fair amount of grit or small gravel in it. Incorporate thoroughly and ram the soil well in replanting the trees so as to secure short-jointed wood. A dip of 24 inches suffices, or if the border be somewhat wide, 18 inches. Where the drainage is efficient and the border in good order, it will only be necessary to confine the roots to the narrow border, removing some of the old soil from amongst them, relaying them in fresh soil, or even the old, with an addition of old mortar rubbish well solidified.

Late Houses.—In wall cases the fruit ripens about this time onwards into September. Brown Turkey stands unrivalled for general purposes, but Brunswick, where there is room, cannot well be beaten, and a similar remark applies to White Marseilles. The great point to aim at is sturdy growths, securing them by keeping thin and the roots restricted to a border of compact materials. Unless thoroughly solidified growths are made it is useless expecting abundant crops of fine fruit; it only comes on short-jointed, well-ripened wood. Keep up a circulation of air constantly, expose the fruit as much as possible to the sun, and afford no more water at the roots than sufficient to keep the foliage in health. If the trees are too luxuriant and the wood does not ripen, treat them as advised for unsatisfactory trees.

Melons in Houses.—The plants require less water as the days shorten, only giving sufficient to keep the foliage healthy and the fruit swelling. When this is completed afford no more than to keep the leaves from flagging. Stop laterals to one leaf on successional growths, rub off all superfluous shoots as they show, thin the laterals where crowded, not allowing them to interfere with the principal leaves or to retard the swelling of the fruit. Plants with fruit advanced for ripening should be kept drier at the roots and have air liberally, avoiding a close atmosphere, as that frequently results in the fruit cracking, and generally causes the flavour to be inferior. Keep the night temperature at 65° to 70°, 70° to 75° by day artificially, and 10° to 15° rise from sun heat. Place out the latest plants without delay, and give every encouragement.

Plants in Pits and Frames.—The latest Melons are set and swelling, and will be the better for good linings to the beds, so as to insure steady progress and the free admission of air. Those in hot-water heated pits will be the better for a gentle warmth in the pipes on cold nights and on dull days. Gentle warmth in the pipes affords facilities for ventilation, a little being given to insure elaboration of the juices. The plants may be sprinkled on fine afternoons, always early, avoiding the stems or collars, and closing before the temperature has receded to 80°, so as to raise the heat to 90° or 95°, or even 100°. Admit a little air at 75°, increase it with the advancing sun heat, and keep through the day at 85° or 90° by that means. Employ covering over the lights on cold nights, but remove early in the morning, so as to let the sun act on the frames or pots and thus secure a long day's work.

PLANT HOUSES.

French and Fancy Pelargoniums.—Plants that have hard, well-ripened wood may be pruned back closely, and stood in a frame until they commence growth. If they are syringed twice daily, and the frame closed early in the afternoon, they will soon start, and no water will be needed at their roots before they reach this stage. When they have well broken into growth the old soil may be shaken from amongst their roots and the plants repotted in a smaller size. The soil may consist of good loam three parts, one part leaf mould, one-seventh decayed manure and sand. Syringe lightly and water carefully until they commence rooting freely into the new soil. The frame may be kept moderately close at first, then admit air abundantly to insure sturdy growth. Young plants that are just rooted in small pots may be placed into 4½-inch pots. Give abundant air from the first, but water carefully, and they will soon commence rapid growth. Cold frames are the most suitable structures for them, so that the lights can be thrown off after active growth has commenced. Good cuttings may still be inserted in sandy soil, and stood in cold frames until they are rooted.

Roman Hyacinths.—For early flowering bulbs may be potted at once. They can be placed thickly together in pots, pans, or boxes, according to individual requirements. We have found them to succeed well in equal quantities of old refuse soil from the potting shed and good loam, to which is added leaf mould, sand, and a little decayed manure. The bulbs after they are potted should be placed outside and covered with ashes 4 inches deep. Select for them a position moderately sheltered from the sun, as when fully exposed the soil in the pots is liable to become too dry. Bulbs may be potted at intervals of three weeks until the end of October.

Snowdrops and Crocuses.—Where these are required to flower early they should be potted at once, and not delayed until October and then subjected to undue forcing in spring. Failure is certain to follow such a course of treatment. If home-grown bulbs are prepared for this purpose where they do well, and are potted now, it will be found that the pots are full of roots by the time imported roots can be obtained. These, if never removed from cold frames, will precede those outside in flowering.

Primulas.—All but the latest should be in their largest pots. Be careful to grow them on a cool moist base where they can be protected from strong sun, but where they can enjoy abundance of light. Provide ventilation most liberally to insure sturdy growth. These plants are frequently spoilt by keeping them too close; they draw up weakly, and are a prey to damp in autumn. Give the earliest plants soot water in a clear state, and a little artificial manure on the surface once a fortnight. Double varieties should also be in their largest pots. These do better close to the glass where they can be shaded from the sun provided they stand on a bed of ashes or gravel.

Petunias.—Plants for early flowering in 5-inch pots next season may be rooted at once and then transferred to 3-inch pots. After they are rooted pinch out the points to induce them to branch, and grow them as cool and sturdily as possible. Any good varieties from amongst the seedlings that were raised in spring may also be perpetuated by cuttings inserted at the present time. The cuttings of Petunias are liable to damp if they are placed in too warm and too close a structure. A cold frame, that can be kept shaded, will be found the best place for them.

Fuchsias.—Cuttings of these may also be inserted now, and they root freely in cool frames if dibbled thickly into boxes. They should be potted singly after they are rooted, and encouraged to make firm growth by potting them moderately firm and growing them as cool as possible.

THE BEE-KEEPER.

The Weather.

The bright weather experienced throughout the country during the whole of July and the first week in August has had the effect of drying the pastures, and little honey has been obtained from the second crop of white Clover. It is many years since the pastures in this locality (South Yorkshire) have been parched so badly as at the present time; nor is this to be wondered at when we take into consideration the deficiency in the rainfall. During the month of July less than three-quarters of an inch was registered, in marked contrast to what is usually our wettest month; the temperature, too, being much above the average. On several occasions the maximum shade thermometer registered 86°; but at noon on the 5th inst. the highest shade temperature recorded for many years was reached—namely, 91°. The heat was almost unbearable. Some combs that were exposed to the sun were quickly melted; hives were all shaded, and free ventilation was given at the entrances. It is during a spell of hot weather when the advantage of having loose floor boards to all the hives is fully appreciated, as the bee-keeper is then enabled to wedge up the front of all hives, and thus provide ample ventilation; but even with full air space and shade it is surprising the combs are not more often melted than they are. The bees, however, keep up a circulation of air by fanning at the entrance.

Since the above date there has been heavy thunder locally, but very little rain. The temperature is now lower, but the days are fine and bright. The bees are busy storing what the country people call honeydew, being mostly caused by the aphides, which at this season infest the foliage of many of our hardy

trees, and which is always worse after a few weeks of dry weather. Bee-keepers will now have removed the surplus from their hives, so no harm will be done in spoiling a good sample of honey, which it would do quickly. There is no means of preventing the bees from carrying this secretion into their hives, but if stored in large quantities I am inclined to think it will often cause dysentery.

Breeding Bees in the Autumn.

Bees that are properly attended to will derive much benefit from the continued fine weather, as they are well-supplied with stores for their present requirements. This will have the effect of keeping the queen laying throughout the autumn, or as long as the fine weather lasts. It is well for bee-keepers to bear in mind that the bees hatched now and onwards for the next two months are the worker bees that will be alive and doing the work of the hive next spring—not the bees that have been hard at work for the past six or eight weeks, and are now worn out. These may be found crawling in all directions in the neighbourhood of the hives, unable to rise on the wing, and so become a prey to the birds and toads and other enemies. It is easy to detect the old worn-out bees by their bright and polished appearance, and if steps are not taken to provide numerous young ones to take their place, a colony composed chiefly of old bees must end in disaster.

Owing to the excessively wet weather experienced last autumn very few young bees were hatched, as the queens stopped laying earlier than usual. The result was stocks gradually dwindled. The consequence was more dead stocks were chronicled last spring than has been the case for many years past. From observations made in years past I have always found the bees came out stronger in the spring after a fine dry autumn than a wet one, the winter being only a secondary consideration, as it is not the cold that kills the bees. If a stock is examined that has succumbed it will often be found to have been headed by an old queen, or the hive was damp, or insufficiency of stores was the cause of the disaster.

Whether bee-keepers use large or small hives they should bear in mind that colonies headed by young fertile queens, surrounded by numerous young bees, and well provided with stores in a damp-proof hive, is the most favourable condition for them to be in at this season.

Drones still in Hives.

When drones are observed in hives at this date it is a pretty sure sign that the stock is queenless, or that something is wrong with the queen, either from age or infirmity. When this is the case, steps should at once be taken to examine the stock, and if found to be queenless unite the bees to another colony, according to instructions given in previous notes. It is too late to rear young queens after this date—not that it is impossible, but there are so many chances against their doing well that it is much better to err on the side of safety, and unite the bees; or if it is a strong stock it may be requeened. Queens may be often obtained from driven stocks or other sources. A strong healthy colony which is headed by a prolific queen invariably kills the drones directly the honey flow is over.

If on examining a stock containing drones a queen is found and only a few eggs are being laid, if her wings are ragged and she is slow in her movements, she is an old queen, and should be superseded. When experimenting with queens of three or more years old I often found the worn out queen in the hive where drones were observed late in the autumn. I now rarely keep a queen more than two years, as the extra labour entailed in rearing young queens is well repaid; but it is as well to look on a hive containing drones at this season with suspicion.—An English Bee-keeper.

TRADE CATALOGUES RECEIVED.

J. Carter & Co., High Holborn.—*Bulbs.*
W. Clibran & Sons, Altrincham.—*Bulbs.*
Dickson, Brown, & Tait, Corporation Street, Manchester.—*Bulbs.*
Dickson & Co., Waterloo Place, Edinburgh.—*Bulbs.*
Dicksons, Ltd., Chester.—*Bulbs, Roses.*
E. P. Dixon & Sons, Hull.—*Bulbs.*
W. Paul & Son, Waltham Cross.—*Bulbs and Plants.*
J. Peed & Sons, West Norwood.—*Bulbs.*
Vilmorin, Andrieux, et Cie., 4, Quai de la Megisserie, Paris.—*Bulbs.*

Messrs. Clay & Son.—We have received a notification stating that the partnership heretofore subsisting between Mr. Samuel Clay and Mr. Samuel Charles Clay, at Temple Mill Lane, Stratford, as artificial manure manufacturers, bone crushers, &c., under the style or firm of Clay & Son, has been dissolved as from the thirtieth day of November, 1896, by mutual consent. All debts from or due to the late firm will be discharged or received by Mr. Samuel Charles Clay, who for the future will carry on the business on his own account without alteration in the title.

TO CORRESPONDENTS

*** All correspondence relating to editorial matters should, until further notice, be directed to "The Editor," *8, Rose Hill Road, Wandsworth, London, S.W.* It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects, through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Couplet (*Loveleia*).—We find you have not given the couplet quite correctly, as the second line should read, "Makes a barn fat and findy." From this it may be inferred that a cold and windy May will bring a full harvest. Whether this is borne out over a long series of years can only be ascertained by examination of the meteorological records, and the agricultural returns. We cannot inform you as to the origin of the saying, with which we were not previously to your letter familiar.

Colouring Gros Colman Grapes (*Cross*).—The Grapes will not colour so well without any heat in the pipes as with slight warmth in them, causing a gentle movement of the atmosphere, with sufficient warmth, to keep moisture from being deposited on the berries, and that, moreover, may save them from cracking and fungoid attacks. At night a temperature of 60° to 65° is necessary, and 70° to 75° by day, with the usual rise of 10° to 15° from sun heat. Air is a most important factor, with comparative coolness at night, especially when the Vines are heavily cropped. Sound health tells most, with judicious feeding, and too much stress cannot be laid on keeping the Vines free from red spider and thrips.

Cow and Horse Manure for Cucumbers (*C.*).—Horse manure is what is termed hot, cow manure cool, hence some cultivators prefer the former for strong and the latter for light soils. We prefer both together in farmyard manure, and in mixture about equal. There is little difference as regards "clubbing," but the cow manure containing more lime and less nitrogen is considered the least liable to favour eelworm in the soil. By mixing the two there is a better blend. We should mix the manure with the loam in the spring, having it in a thoroughly decayed state, and stack the loam with about 2½ per cent. of best freshly burned chalk lime and a sprinkling of kainit along with it, using about 7 lbs. per cubic yard.

Orange Tree Infested with Scale (*T. C. S.*).—The plant is infested with the scale insect (Lecanium hesperidium), and the sticky matter is its filth, which attracts ants. One of the best means of destroying the scale is to wash the tree with a solution formed as follows:—Dissolve 6 ozs. of softsoap in a quart of water by boiling, remove from the fire heat, and at once add a wineglassful of petroleum. Stir briskly with a switch or egg-whipper till thoroughly amalgamated, and place in a bottle or bottles. When required for use, shake well and add half a pint to half a gallon of water, and with that solution, using hot water, sponge the plant everywhere, when the solution is cooled to 100°. After sponging syringe with clear tepid water. The plant will require such treatment occasionally, as it is scarcely possible to grow Oranges without scale.

Diseased Outdoor Grapes (*Griffin*).—The Grapes sent for examination are severely affected by the so-called Vine mildew, an epiphytic fungus, named Oïdium Tuckeri, very common in dry seasons on Ranunculus acris and R. repens, also second crop Clover in late summer. The active stage of the parasite succumbs readily to sulphur. The first application should be made ten or twelve days before the flowers open, the second when in full bloom, and a third a fortnight or three weeks later. If the disease does not seem to be entirely subdued, another dressing may be applied about a fortnight after the third application. As regards the disease spreading to Vines near it, it is only a question of spores and moisture on the foliage, fruit, or shoots. The diseased Vine will furnish the spores. Neither sulphur nor anything else can repair seriously affected berries such as yours, but it may prevent the distribution of spores, especially if the sulphur is used when the sun shines powerfully on the Vine. By no means destroy the Vine. The procedure advised is founded on successful practice, and we have seen equally good results follow the timely application of anti-blight in the case of Vines which were for years white as millers, but now free from any speck of mildew.

Ismene calanthinum not Flowering (*T. C. S.*). — This Hymenocallis is not generally a free bloomer until it becomes large, and then requires to be kept dry during the resting period, or in winter. It is a warm greenhouse or cool stove species, requiring abundance of water during growth, but not making the soil sodden. The chief thing is to secure a good growth, and then mature it. Strong turfy loam is the most suitable soil, which must be well drained, and a rather liberal amount of pot room given. The bulbs should be buried just below the surface of the soil. Afford all the light practicable.

Colutea arborescens (*Inquirer*).—The shrub which you have seen in Battersea Park, "with leaves very much like an Acacia, yellow flowers something after the wild Broom, and pods like bladders" (a very good description) is no doubt the one above named, and, as you assume, belongs to the Nat. Ord. *Leguminosæ;* Tribe, *Galegeæ*. It is commonly called the Bladder Senna, in reference to the character of the pods, and because it is said that Senna (Cassia lanceolata) has been adulterated with its leaves. It is a native of Southern Europe, and is said to grow on the slopes of Mount Vesuvius, where no other plant exists. It is evidently a first-rate town shrub, at least in the South of England, for we know several examples of it growing and flowering freely in a small patch of a garden, enclosed on all sides by lofty buildings in the densely populated and smoke-enveloped "East End" of London.

Exhibiting Flowers (*Hamilton*). — In all questions of doubt relating to exhibiting flowers, or anything else, we have often stated that schedules should be sent with inquiries in order that the whole question and conditions may be understood. You say in your letter, "Of course there are the eight varieties, and they would be exhibited with the seedlings." This would no doubt be clear enough with the schedule before us, but it is not in the least elucidatory as it stands. We should regard your seedlings as half-hardy annuals, having regard to their origin; but if the Judges should rule otherwise, and their "decision is to be final," we suspect they would be the masters in this particular case. As to names, if the seedlings are distinct from all others, and, as you say, "splendid," you are at liberty to give them what names you like, which have not previously been given to other varieties of the genus to which the plants belong. If you like to send samples of the flowers we will tell you what we think about them. All letters and samples intended for the Editor should be sent to the address at the head of this column, not to Fleet Street.

Eucharis amazonica Infested with Mites (*Eucharis*).—It is generally advisable, when the plants become infested with this pest, to turn them out and cleanse the bulbs by means of some approved insecticide, there being few better than hot water, as hot as it can be borne by the hand for a minute (about 145°), letting the bulbs remain in it that time, rinsing or moving up and down so as to get the water into the scales or outer coating of the bulbs. They can then be potted in soil which has been scalded previously, so as to allow for draining and getting into good condition for potting. The plants should have bottom heat so as to accelerate root action, and get them soon re-established. This answers for a time, but in mite districts it seems to get on the plants again, when occasional applications of Clibran's Eucharis mite killer will keep it down, carefully following the instructions. You may use soluble phenyle, one part to ninety-six parts soft water, or 1 gill (¼ pint) to 3 gallons of water. Both may make the plants rather queer for a short time, but they recover, the substances then acting as manure.

Asters Dying (*A. W.*).—The plants are infested by a fungus in the stem (Botrytis cinerea var. sclerotiophila). Infection has probably been induced by an excessive use of enriching material, such as manure or leaf mould. It is a sort of "sickness," and by some considered due to a minute white worm, about an eighth of an inch long, which attacks the roots; there are some on your plants, and so there are on many other kinds of plants, especially Primulas, that die from the root upward both outdoors and under glass. It may be found in leaf mould and other decaying substances, and at most is semi-parasitic. It usually yields to dressings of basic slag phosphate, 14 lbs. per rod, and kainit, 7 lbs. per rod, applied in the autumn and dug in. The rains of winter will wash away the chlorine and leave the phosphoric acid, lime, potash, and magnesia in the soil. In the spring a dressing of freshly burned chalk lime makes assurance doubly sure, using ½ cwt. per rod, applying in dry weather, say in March, and pointing in with a fork, taking small spits so as to secure an even mixture. Manure can be given later, if necessary, always thoroughly decayed.

Caterpillar Found amongst Weeds (*W. Webb*).—The very fine specimen you have sent is the larva or caterpillar of the death's-head moth (Acherontia atropos, *Linn*). The caterpillar measures about 4 inches in length, thick, fleshy, with three pairs of feet. The fore legs are brown or black, head horny, and furnished with strong jaws. The colour of the caterpillar is greenish yellow, speckled with black on the back, with seven slanting stripes of lilac on each side, meeting along the back, and the lower ends pointing forwards white or bordered by a white line. The caterpillar turns to a lurid yellowish or reddish tint when about to change, then goes down into the ground, there throws off its skin, and turns to a large dark chestnut-coloured pupa with a tail, and though it lies in the ground all the winter has power of movement by means of the short tail and rings above it, always moving when handled, as if feeling the warmth of the fingers. The moth emerges from the pupa in the spring or early summer, and has a spread of wings of 4 to 6 inches, according to the size of the caterpillar in the preceding year. Fore wings rich brown, yellowish or rusty tinted, black lines waved and zig-zagged, with an ochre-coloured spot in the middle, and sprinkled with white spots. Hind wings bright orange, with two brown or black bands outermost broadest. Head black, with two horns (antennæ) rather stout and curved at the tips, and a curved proboscis for sucking the nectar of flowers, such as white Jasmine, and the moth is said to enter the hives of bees for the honey. The eggs are laid in hedges or amongst rubbish, and the caterpillars spread out for feeding, sometimes being found in Potato fields.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slight damp moss, soft green grass, or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*W. M. C.*).—1, Gypsophila paniculata; 2, Montbretia Pottsi; 3, Bambusa Fortunei. (*T. J. H.*).—1, Adiantum gracillimum; 2, Nephrolepis devallioides; 3, Davallia canariensis; 4, Adiantum grandiceps; 5, A. trapeziforme; 6, A. cuneatum. (*E. C.*).—1, Abelia rupestris; 2, Escallonia rubra; 3, Centranthus ruber. (*P. P.*).—Houlettia Brocklehurstiana. (*W., Reading*).—Through being in the post over Sunday the flowers were shrivelled beyond recognition.

COVENT GARDEN MARKET.—August 18th.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	1 3	to 3 0	Lemons, case	11 0	to 14 0
Filberts, 100 lbs.	25 0	0 0	St. Michael's Pines, each	3 0	8 0
Grapes, lb....	0 8	2 0			

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, ½ sieve	0 0	0 0	Onions, bushel	3 6	4 0
Beet, Red, doz	1 0	0 0	Parsley, doz. bnchs	2 0	3 0
Carrots, bunch	0 3	0 4	Parsnips, doz	1 0	0 0
Cauliflowers, doz.	2 0	3 0	Potatoes, cwt.	2 0	4 0
Celery, bundle	1 0	0 0	Salsafy, bundle	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Seakale, basket...	1 6	1 9
Cucumbers...	0 4	0 8	Scorzonera, bundle	1 6	0 0
Endive, doz.	1 3	1 6	Shallots, lb.	0 3	0 0
Herbs, bunch	0 3	0 0	Spinach, pad	0 0	0 4
Leeks, bunch	0 2	0 0	Sprouts, ½ sieve	1 6	1 9
Lettuce, doz.	1 3	0 0	Tomatoes, lb.	0 4	0 0
Mushrooms, lb.	0 6	0 8	Turnips, bunch	0 3	0 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var. doz. ...	6 0	to 36 0	Fuchsias, doz.	3 0	to 5 0
Aspidistra, doz....	18 0	36 0	Heliotropes, per doz. ...	3 0	5 0
Aspidistra, specimen ...	5 0	10 6	Hydrangeas, doz.	8 0	10 0
Campanula, per doz... ...	4 0	9 0	Lilium Harrisi, doz.... ...	12 0	18 0
Cockscombs, per doz... ...	2 0	4 0	Lycopodiums, doz.	3 0	4 0
Coleus, doz.	2 6	4 0	Marguerite Daisy, doz. ...	4 0	9 0
Dracæna, var., doz.	12 0	30 0	Mignonette, doz.	4 0	6 0
Dracæna, viridis, doz. ...	9 0	18 0	Myrtles, doz.	6 0	9 0
Euonymus, var., dozen ...	6 0	18 0	Palms, in var., each... ...	1 0	15 0
Evergreens, var., doz. ...	4 0	18 0	,, specimens	21 0	63 0
Ferns, var., doz.	4 0	18 0	Pelargoniums, doz.	8 0	9 0
Ferns, small, 100	4 0	6 0	,, Scarlet, doz.	2 0	4 0
Ficus elastica, each	1 0	7 0	Rhodanthe, doz.	4 0	6 0
Foliage plants, var., each	1 0	5 0			

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms ...	2 0	to 4 0	Marguerites, 12 bnchs. ...	2 0	to 3 0
Asparagus Fern, bunch ...	2 0	3 6	Maidenhair Fern, doz. bnchs.	4 0	8 0
Asters (French) per bunch.	0 6	1 0	Mignonette, doz. bnchs. ...	2 0	4 0
Bouvardias, bunch	0 4	0 6	Orchids, var. doz. blooms.	1 6	12 0
Carnations, 12 blooms ...	1 0	3 0	Pelargoniums, 12 bnchs. ...	4 0	6 0
,, doz. bnchs. ...	3 0	6 0	Pyrethrum, doz. bnchs	1 6	3 0
Cornflower, doz. bnchs. ...	1 0	2 0	Roses (indoor), doz.... ...	0 6	1 0
Eucharis, doz.	2 0	3 0	,, Tea, white, doz. ...	1 0	2 0
Gardenias, doz....	2 0	4 0	,, Yellow, doz. (Niels)	1 6	4 0
Geranium, scarlet, doz. bnchs.	3 0	4 0	,, Red, doz. blooms ...	1 0	2 0
Gladioli, doz. bnchs. ...	4 0	8 0	,, Safrano (English) doz.	1 0	2 0
Lavender, doz. buchs. ...	6 0	8 0	,, Pink, doz....	1 0	2 6
Lilium longiflorum, 12 blooms	2 0	4 0	,, outdoor, doz. bnchs.	2 0	6 0
Lily of the Valley, 12 sprays	1 0	2 0	Smilax, bunch	2 0	3 6
			Tuberoses, 12 blooms ...	0 3	0 4

THE STACKYARD.

There is to the uninstructed eye little difference between one stack and another, and to speak of stackyard scenery would, and will perhaps, provoke a smile; but the great variety of stacks that

may be seen in different parts—good, bad, and indifferent, large and small—are to the intelligent observer a very interesting study. Who can deny that a group of well-made stacks (or more particularly the round ones that in Yorkshire are called pikes) crowning the hill-top or peeping from behind the clump of Scotch Firs, does not add very materially to the picturesqueness of any landscape?

But stacks are made for use, not for ornament. Certainly; but it would be difficult, or impossible even, to make a handsome stack without at the same time making a good one. Of course the first object in building the stack is the safe preservation of the corn of which it is made, therefore the roof is the most important part; but the foundation must be well looked after. It is a good plan to build the stacks every year on the same places, and to have those places raised slightly higher than the rest of the stackyard.

We do not often vary the size of our stacks—at any rate, as regards length, and if the steddle or foundation slope gently from the middle the stack may be made smaller or narrower, as occasion requires. A raised steddle being used, not so much straw will be necessary as if the stackyard were all on a dead level; but in any case, dry straw or other similar material quite a foot thick (as thrown down) must be used to put the new grain upon. It is very annoying to find two courses of sheaves at the bottom of the stack mouldy and rotten, either from having been stacked in a low, badly drained place or from having been placed upon wet straw. Having a good dry foundation sloping from the middle we must take every care not only to preserve this slope, but to increase it. The first sheaves go into the middle, and the essential point in making a good stack is to have the outside sheaves sloping from the centre at such an angle that they are in danger of slipping off until an inner course has been placed upon them. If a stack be built on this principle, and carried out gently so that the eave overhangs the base by a foot all round, there is only the roof left to consider.

Rough timber, tree tops, and rough Thorns are often used to make stack bottoms, and very useful they are if there are no rats about, otherwise they are a great encouragement to the rat to make his abode in them; such a home, with plenty of food above, is just what Mr. Rat dearly loves. We should prefer a more solid bottom, such as is provided by broken stone or earth.

Now we come to the most important part of all, the roof. Having carried our stack to the square, that is the point from which we intend the roof to spring, we must begin to fill in, or in other words to increase the proportion of sheaves towards the middle so as to accentuate the outward slope. A stack when filled in ready for roofing presents rather the appearance of already possessing a flat roof, but much more is required. We proceed by laying an outside course 9 inches within the outer edge with other binding courses upon it and each other; the next outer course will be brought in again, and so on until the sheaves reach across the top, then a few sheaves may be laid lengthwise, and straw on the top to keep all snug. A good roof should have something of a shoulder, that is the pitch should not be uniform as in the roof of a building, but greater near the eaves, as it is that part which is the most likely to let in rain, if there is not sufficient slope.

The shape of the stack is either a matter of taste, or, as in some districts, one that leaves little or no choice to the farmer if he is to save his crops. In a fine harvest, when the grain is in the driest of conditions, we think there is nothing to beat the Yorkshire pike. We have seen them 10 yards in diameter at the base, and 12 yards at the square. A stack like that, proportionately high, will contain from 100 to 120 qrs. of Wheat, and very little of it is exposed to the birds and the weather; but with unfavourable conditions of weather, which is the annual occurrence in some northern localities, it would be almost impossible to secure the crops in such order as to make it safe to put them into such huge heaps—the stacks must be smaller or narrower. Barley and Oats especially, unless in the finest condition, must not be stacked so that any portion is 7 feet or more from the outside.

This, to stick to the round shape, would mean a large number of small stacks, and heavy expense in thatching. We, therefore, whilst using pikes for the Wheat in most years, find it safest to put the Barley and Oats into long narrow stacks about 4 yards wide and 12 long. These we build end on to each other in close contiguity, two, three, or four in a row. They can be all thatched as one roof, and thrashed one at a time if required. The extreme ends are made round, and the roofs the same, so that there is no gable end. A gable end is difficult to make waterproof without sacrificing appearances.

We are quite certain that for big heaps there is no shape to equal the pike, and they are quite as easy to build if people will but have a try.

WORK ON THE HOME FARM.

Work amongst the corn early and late occupies each and every day. We have had a nice rain, which has greatly benefited the root crops and pastures without materially injuring the grain; probably even the ripe Barley would be the better for it. Fortunately the rain fell on Sunday, so the harvest was not hindered.

Binders are making splendid work, and are almost universal. Shoals of men in vain seeking work are passing along the roads, and would, no donbt, be easy to treat with if anyone wanted them.

Grain crops on the whole are cutting up well, if anything better than our anticipations; the drought had given them an appearance of lightness which was more superficial than real. Barleys are a good colour, but will be very thin and steely. The kindest samples will come from the low-lying lands.

Most of the corn is cut about us but not much led. It is well to be careful and give the crops plenty of field room this season. They have finished off rapidly, and in many cases were much greener than they looked. The ears appeared ripe and the straw yellow, but the knots were very green when the corn was cut, and until the nature in the straw has had time to dry up it is dangerous to put it into a stack. There is generally more heated corn in a fine harvest than in a wet one, because farmers will not give the straw time to get properly made.

We are inclined to leave our Barley out a little longer on the chance of more rain falling. A good rain on the stooks would do the grain much more good than harm. One rain would not affect the colour much, and it would add much to its malting qualities.

Some people are anxious to be moving the Wheat stubbles as soon as the corn has been cleared away. This year they are so hard that even the spring-tooth cultivator will hardly face them. However, lamb meat is so scarce that perhaps few will attempt to work them, at any rate until the sheep have had a few days' run upon them.

Milch cows have fallen off much in the milk, and fat stock lately have hardly held their own.

SOUTH-EASTERN AGRICULTURAL COLLEGE.

THE South-Eastern Agricultural College at Wye, established and maintained by the County Councils of Kent and Surrey, was visited last week by a large gathering of representatives of the agricultural community in both counties, on the occasion of a distribution of prizes and diplomas by Earl Stanhope, the Lord Lieutenant of Kent. The Principal, Mr. A. D. Hall, referred to the highly encouraging examination results thus early in the career of the college. The Royal Agricultural Society had passed two men, awarding the gold medal and life membership to Mr. A. Holm, of Betchworth, Surrey. The Surveyors' Institution had passed all candidates presented for the first degree. Similar successes had attended the candidates for the Cambridge University Diploma of Agriculture, and for the British Dairy Farmers' Association.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

DATE.	9 A.M.					IN THE DAY.				
1897. August.	Barometer at 32° and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature.		Radiation Temperature		Rain.
		Dry.	Wet.			Max.	Min.	In Sun.	On Grass.	
	Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Inchs.
Snnday ... 8	29·604	65·2	61·0	E.	68·1	72·7	59·2	118·2	52·0	0·758
Monday 9	29·796	65·1	60·2	N.W.	66·0	75·4	58·6	122·2	57·1	—
Tuesday 10	29·953	65·3	60·1	N.	65·3	78·2	53·8	122·9	48·2	—
Wednesday 11	29·939	67·9	64·4	S.W.	66·1	75·7	60·4	120·4	53·6	—
Thursday .. 12	30·018	64·1	57·2	N.W.	65·1	73·0	51·1	126·9	46·6	—
Friday 13	30·093	61·7	57·1	S.W.	64·8	70·4	48·1	105·1	43·9	0·050
Saturday .. 14	29·997	63·2	57·9	W.	64·0	75·4	54·2	123·7	50·1	—
	29·914	64·6	59·7		65·6	74·4	55·1	119·9	50·2	0·808

REMARKS.

8th.—Heavy rain from 9.30 A.M. to 1 P.M., and showers after, but much bright sun in afternoon.

9th.—Overcast early; occasional sunshine in morning; bright afternoon.

10th.—Bright sunshine all day; overcast evening.

11th.—Generally overcast, with spots of rain, till 5 P.M.; bright evening.

12th.—Frequently cloudy in morning, but brilliant early and after 2 P.M.

13th.—Overcast with frequent spots of rain early; occasional faint sunshine after 11 A.M.; showers in evening, and rain at 11 P.M.

14th.—Alternate cloud and sunshine.

Another warm week, but not so much above the average as the previous ones.—G. J. SYMONS.

Journal of Horticulture.

THURSDAY, AUGUST 26, 1897.

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THE DECADENCE OF WALL-FRUIT CULTURE.

THIS is one side of a story of which, as with most, there are two. On the bright side—and it is but fair to turn to it for a moment, although it needs but little comment—we may see those intelligent expositions of gardening under which this subject receives that consideration it deserves, deriving from it corresponding good results. Yet I venture to assert, from personal observation, that for every good example to be found there are two the reverse—one showing sheer neglect, the other decided mediocrity: hence the conclusion is arrived at that in this matter at least we have fallen, and are still falling, away from the excellent practice of our forefathers. Corroborative evidence is afforded by more than one lament from high places over the disappearance of the luscious open-air Peach of boyhood days; and not that alone, for those magnificent dessert Plums, the pride of a past generation, are often, too, conspicuous by their absence.

The causes which have led to this are not far to seek. So far as Peaches are concerned, where the question of open-air culture crops up the matter is dismissed by saddling the deficiency upon that scapegoat, the weather. Indeed, the decadence of this phase of cultivation with Peaches is not rarely adduced as a proof of sufficient climatic change to have brought about the result. Granted what is proved by the ethics of geological and geographical science to be the case, such changes in the forces of Nature are spread over too large, too vast intervals of time to affect the question to any appreciable extent, and the impotency of any attempt to compute such changes from data as afforded by a few generations may be admitted. Doubtless many will say that with the great facilities now at hand in the way of glass protection, Peach growing in the open is practically unnecessary. That is another matter; but with those who have some lingering regard for the past, and attach any importance to its bearing on the present, then, given the same care and attention to the tree on the wall as is afforded to it under glass protection, excellent results are still to be obtained.

One notable instance *apropos* of the above may serve to illustrate the case. In a garden of moderate dimensions, where all things were well under control, were grown year after year, probably are still, some of the finest Peaches it is possible to see. The first time the trees came under notice the care and skilful treatment bestowed upon them was very evident. This was at that critical season, early spring, when the trees would have been tempted in blooming had not measures been taken to retard them as long as possible, to effect which they had been disengaged from the wall (a good red brick wall with a S.W. aspect), and the strong brown wood bristling with latent buds was secured in loose bundles to stakes firmly fixed as far from the wall, and consequent excitement, as possible. A little questioning upon the matter showed that the zealous gardener was an enthusiast in this phase of culture, and elicited the whole routine of operations. This amounted to no more than high-class treatment of trees as generally displayed and ungrudgingly given under glass, but no less, be it understood, comprising periodical lifting, strict attention to the border, which was wholly devoted to them, the same care with watering, all details pertaining to cleanliness, thinly disposed wood, and a vigorous thinning of the fruit. Under these conditions history, as far as successful outdoor Peach production is concerned, is well able to repeat itself.

With the employment of our walls for fruit culture generally, apart from the benefits derived from glass protection in whatever shape or form, the subject is of sufficient importance to claim more attention than often obtains and which is evidenced by the desultory, half-hearted way in which many of the trees are cared (?) for. It would, perhaps, be a bold thing to say that gardeners of to-day are warped to their glass houses, although, here and there, instances may be noted which tend to that conclusion. However that may be, the bedding craze which has had so many sins of omission to answer for generally, may bear much of the burden of this shortcoming in particular. Happily the extreme has long since been touched, and a healthy reaction has set in, to the end, probably, that our garden walls will no longer bear the evidence of neglect as seen in starved trees carrying their breastwood too late in the autumn, and receiving but little more attention than one gives to a hedge with the object of having it tidy, and that deferred to include all in the one operation. It is reasonable to suppose that we shall never return to those hard and fast lines as practised by our ancestors, of which the decaying monuments still bear witness of an untiring patience to attain the perfection of geometrical training; but rational freedom, not unbounded license, may give us lines of beauty more in harmony with the practical spirit of the age.

One would like to see the hands of our young gardeners afforded a little recreative play in this direction, for all have not in the ordinary routine of their work opportunities for it. As a suggestion to those whose crippled resources in coping with a season's work leave an opening for improving this phase of fruit culture, all-round good might result if each lad in the bothy was given the care of one or two trees, Peaches, Apricots, Plums, or Pears, in his leisure — after the orthodox working hours. This opinion and theirs are, doubtless, widely divergent now upon such matters, but later in life they will meet on common ground, and that is sufficient. As a young man nothing afforded me greater pleasure than the taking in hand of some neglected Plum trees on a wall, and the pinching, pruning, nailing, watering, washing and thinning gave such marvellous results in two short seasons that a lifetime will never obliterate the satisfaction derived from it.

There are essentially a few characteristic features prominent in the ordering of a well-kept garden, and these will strike the eye of an interested observer. They are, in fact, the keynote to a harmony of which all other cultural details are, without disparaging their importance, but minor notes. We enter some fine old garden, historical mayhap so far as gardening is concerned, and from the walks, which do so much to make or mar an agreeable impression, a searchlight of criticism sweeps the garden walls. Sentiment in a measure guides us to the surface of things, but all the profit and pleasure derived from sound gardening is speedily analysed and assimilated in one critical glance.

There is no square foot of a garden wall but what should contribute that quota to the credit side an intelligent workman is able to extract from it, and to me a good garden surrounded by a neglected wall is like a fine picture in a shabby frame.—INVICTA.

CHEMISTRY IN THE GARDEN.

(*Continued from page* 415, *last volume.*)

Relation of Soil to Water.—One of the most important physical properties of soils is their power of absorbing and retaining moisture. Gardeners who have been engaged in different part of the country know only too well how plants growing on some soils become wilted, stunted in growth, and assume a sickly yellow colour during a drought; while under the same conditions on other soils they appear quite fresh and green. The soils first referred to have not the power to absorb and retain moisture for any length of time, while the latter can, and are therefore able to supply crops with water for a longer or shorter period, which will naturally vary according to the nature of the soil. The absorption and retention of water by soils is greatly influenced by several important circumstances, the following being those of most importance, and consequently the only ones we need consider:—(1) The amount of clay, sand, carbonate of lime, and humus a soil contains; (2) the degree of fineness of the soil particles; and (3) the depth of the soil and nature of the subsoil.

In considering the influence which sand, clay, and humus exert upon the absorptive and retentive power of soils for water, we shall do well to make use of a few extracts from a table of experiments carried out by Schübler. He first of all obtained samples of different kinds of soil, and after drying them, saturated equal weights of each with water. The samples were then allowed to drain until all the superfluous water had passed away, when each lot of soil was again weighed, the difference in weight between the dried and wet soil being the amount of water each lot was capable of absorbing. Below are a few of the results thus obtained:

100 lbs. of sand	..	..	absorbed	25	lbs. of water.
100 ,, sandy clay	..		,,	40	,, ,,
100 ,, strong clay	..		,,	50	,, ,,
100 ,, garden soil	..		,,	89	,, ,,
100 ,, humus	..	..	,,	190	,, ,,

The above table shows us that sand is not able to absorb much water, but by the addition of a certain amount of clay greater absorptive power is given to a sandy soil. Humus, or decaying vegetable matter, is capable of absorbing a large amount of moisture, and it is owing to the presence of this substance in the garden soil that makes the latter able to absorb and retain so much moisture.

A good illustration of this is shown by some of the Rothamstead experiments. A sample of soil was taken from an unmanured plot, and on being saturated with water was found to be capable of absorbing 32·4 of water per 100 of dry soil. The same amount of a similar soil, which had received a dressing of 14 tons of farmyard per acre per annum for twenty-six years, was able to absorb 65·8 of water per 100 of soil. Stiff clays, although capable of absorbing a large amount of water when it is poured upon them, are not the soils which absorb the most moisture from the atmosphere, consequently in wet weather clays are very wet, but during a drought the surface dries quickly and becomes very hard, and large deep cracks radiate in all directions. Humus will improve the condition of such soils, making them mellow and easier to work. Carbonate of lime, if applied in a fine condition, will also improve the retentive power of soil, especially those of a sandy nature.

The degree of fineness of the soil particles has considerable influence on the retention of the soil water, for up to a certain point the finer the particles the more water will be absorbed. When the soil is saturated after heavy rains all the interstices will be filled with water, but if the soil be well drained all the water between the particles will drain away. If we pick up a stone which is lying on moist ground we find the under surface covered with a film of moisture. Every particle of soil is surrounded by a film of water which adheres to its outer surface, so it must naturally follow that the more particles of soil there are the more water will the soil retain.

One hundred pounds of a rather coarse chalky soil, when saturated, was found to be able to retain 29 lbs. of water, but when the same weight of soil was pulverised its retentive power was increased so much that it was found capable of holding 85 lbs. of water. Professor Wrightson has shown that while 100 lbs. of a very coarse sand could only retain 7·0 lbs. of water, the same weight of very fine sand would hold 44·6 lbs. We must also remember that chalk and humus are porous substances, therefore they can retain water in the same way as it is taken up and held by a sponge.

The depth of the soil and the nature of the subsoil are the next

points for our consideration. As many of us are aware, a shallow soil with a gravel subsoil is about the worst land it is possible to have, for such a soil allows the rain to pass through it freely, and there is no means of holding it at a depth which is of any value to plants. A light soil resting upon a clayey subsoil is a good combination, although the latter may require to be trenched and drained. The clay would retain plenty of moisture, which would be brought within the reach of the roots of plants by capillary attraction. It is very beneficial to plants to break up the subsoil, even if it is not suitable to bring or mix it with the surface soil. A deep soil and subsoil allows the roots of plants greater freedom and more root room, and crops are not so liable to feel the effect of drought, because the soil by its greater bulk is capable of retaining a large quantity of water.—W. Dyke.

(To be continued.)

HOME-MADE WINES.

Currant Wine.

To make 18 gallons of this wine take 28 gallons of fruit picked from the stalks and perfectly ripe. Let it be thoroughly bruised and put into the fermenting tub. Strain out a portion of the juice and test its gravity by the saccharometer. Allow the mass to remain until it is found that the gravity of the juice begins to decrease. Then let the juice be strained off and the skins of the fruit well pressed, and when pressed throw the skins into a tub and pour 2 gallons of cold water over them to extract the remaining good they may contain. Press them again, and what juice is obtained mix it with the other, which must be returned to the cask without a head.

The pure juice is now to be tested by the saccharometer, and if it stand at any degree above 30° it is to be reduced to that point by the addition of cold soft water. From the specific gravity of 30 it must now be raised to that of 120 by the addition of sugar, which will probably take about 2½ lbs. to every gallon of liquor. When the sugar has been dissolved fermentation will commence, and now a pound of powdered argol is to be added to the must.

Every day the must is to be tested by the saccharometer till it is found to have decreased to from 80 to 90. When it is at 80 it is to be drawn off from the tub into a cask, which has been previously well washed with boiling water, and while it is yet warm, as this tends to keep up the vinous fermentation in the cask. The bung-hole must be left open to enable the wine to throw off its yeast and impurities, and as it shrinks in the cask keep filling it up to the bunghole with that which has been reserved in the 2-gallon cask. Fermentation must be encouraged in every way until the gravity has been reduced to 30, when the cask may be bunged up. The wine ought to remain in cask till November twelve months before it is bottled.

Black Currant Wine.

The same directions for making Currant wine, which have already been described, will apply to making ordinary Black Currant wine; but when a very superior quality is required the following process must be adopted:—To two parts of fruit take one part of water—that is, to every 2 gallons of fruit take 1 gallon of water. Crush the fruit gently and put in a tub, then add the water. Stir them together, and then put them into a copper and boil them for ten minutes, after which draw off and strain. The berries are now to be pressed, and 2 additional gallons of water poured on them, and this also is to be strained from them and added to the original quantity.

When the liquor is cooled down to a temperature of 90°, which must be ascertained by the thermometer, it is to be tested by the saccharometer and enough lump sugar added to raise the gravity of the must to 125. One pound of powdered argol is now to be added to every 20 gallons of must, and when the temperature falls to 85° put in a pint of good fresh brewers' yeast. Fermentation is now to be encouraged till the specific gravity is reduced to 50, when the wine is to be put into well-cleansed casks, and the longer it is kept in the wood before bottling the better it will be.

Ripe Gooseberry Wine.

Take 10 gallons of ripe Gooseberries, bruise them and throw them into a tub, where they are to remain for twenty-four hours, and be afterwards pressed in a haircloth or canvas bag. Return the mass to the tub and pour 5 gallons of moderately warm water over it, mixing the whole well together. After remaining for about twelve hours take it out and press it again through a haireloth or canvas bag, the liquor from this second pressing being added to the original. Now test the gravity of the liquor by the saccharometer, and raise it by the addition of sugar to 120. As soon as fermentation begins add for each gallon of the liquor 1 oz. of powdered argol. When fermentation has nearly ceased draw it off into a cask, which must be kept constantly filled to the bung-hole from the reserve which has been kept for the purpose. The liquor is to be frequently tested by the saccharometer, and when it has been reduced to 25° or 30° it is to be bunged up and allowed to remain for twelve months, when it may be fined and bottled, or left in the cask to mature.

Cherry Wine.

(1). The best Cherries for this purpose are the Black Heart, Black Corone, Mazzards, Merries, or Geans.

Remove the stalks, then bruise the fruit thoroughly without crushing the stones, strain out the juice, and to every gallon of juice add a gallon of water. Put half the quantity of water already used over the fruit which has been strained. Stir all well up together, leave them for twenty-four hours, and then press the liquor from the fruit, and add it to the former quantity.

Test the liquor by the saccharometer, and add sufficient sugar to raise the gravity to 120. To every gallon of the juice add 1 oz. of powdered argol. Draw the liquor off into a cask filled to the bung; and as the bulk wastes by fermentation keep the cask filled from a reserve which has been kept. When the hissing has ceased, and the gravity has been reduced to 30, bung up the cask, and allow it to remain till November twelve months before bottling.

(2). This second recipe is for a wine of somewhat different character, and of very superior quality to the former, and may be preferred for the noyeau flavour supplied by the crushed kernels and the addition of the Raspberries.

To make a 9-gallon cask of wine will require 190 lbs. of fruit, allowing for the waste in the fermentation.

The Cherries to be used are the same as those already mentioned in the first recipe. They must be ripe and sound. After bruising them, remove the stones and allow the pulp to remain in the fermenting tub for twenty-four or twenty-six hours, so that the skin may during that time yield up all its colouring matter; then strain the whole through a cloth. Test the juice by the saccharometer, and add as much sugar as will raise its density to 120°. Put into a cask, reserving some to fill up what is lost by the fermentation. This will be at the rate of about 3 quarts per 5 gallons. Add 1 oz. of powdered argol to the gallon. When the fermentation, which will last fifteen or eighteen days, has ceased, bruise the stones, add them to the wine, and bung up the cask. Let it remain in the cellar for three or four months, and bottle it off. It will add to the flavour of the wine if a few pounds of Raspberry juice is added before fermentation has ceased.

Raspberry Wine.

To every gallon of ripe Raspberries picked from the stalks put half a gallon of water. Stir them well up together, and thoroughly bruise the fruit. Strain off the liquor, and squeeze all the juice from the fruit, adding it to the liquor which was previously drawn off. Test the weight of the liquor by the saccharometer, and make it up to 120 by the addition of sugar. To every gallon of liquor put 1 oz. of argol powdered and dissolved in a portion of the liquor. Put it all into a cask, and allow it to ferment till the gravity is reduced to 30, and keeping the cask full as the liquor shrinks by the fermentation. When fermentation is complete bung up the cask, and at the end of three months rack it either into a clean cask, or return it to the old one after it has been thoroughly rinsed and cleaned. In six months more it may be fined and then bottled.

Orange Wine.

Boil 20 gallons of water, and when nearly cold pour it upon 60 lbs. of raisins cut or chopped small. Let them work together in the fermenting tub for ten days, stirring them twice every day.

In the meantime procure 120 sweet Oranges, and pare them as thin as possible, preserving the skins. Cut the Oranges in two and squeeze out the juice, putting it and the pulp into a tub or other vessel.

As soon as the raisins have remained the required time in the fermenting tub strain off the liquor and press the raisins, extracting all the juice. Measure the liquor, and if it has lost in quantity add as much water as is deficient to the refuse of the raisins, which stir up in it, and after pressing add the liquor to the original quantity. Heat a quantity of the liquor to 170° and pour it on the peels of the Oranges; and when cooled down to 90° press them and mix with the raisin liquor, which must now be poured on the juice and pulps of the Oranges, there to remain for one night. Stir it up next day and strain it.

Now test the gravity by the saccharometer, and it will probably be about 45. Make it up to 120 with the addition of sugar, at the same time add three-quarters of a pound of argol, which must be previously dissolved in 2 quarts of the hot liquor. Leave it till it shows 90 gravity by the saccharometer, when it is to be put into an 18-gallon cask, reserving 2 quarts; in one of which dissolve half an ounce of cochineal previously well pounded, and in the other 1 oz. of isinglass, and when they are cold add them to the cask, stirring them well up together. Leave the barrel without bunging it for a fortnight, and then bung it up.

(To be continued.)

SHREWSBURY—ROYAL COMMEMORATIVE SHOW.

AUGUST 18TH AND 19TH.

NEITHER storms that blow down tents during the preparation of the Show, nor drenching rain that falls continually soon after the opening, seem to do little more than cause loss to the exhibitors who suffer, and extreme discomfort to thousands of visitors. The Society itself appears to flourish under all circumstances, and its triumphs only seem the greater in surmounting natural obstacles. The downpour towards the evening of the first day stopped the progress of everything outside the tents, and prevented the evening fireworks, but did not stop the visitors, and hence the marvellous result of a larger "gate" than on any first day over the whole long series.

Then came the second day, which was fortunately fine, and nearly a hundred trains brought in their living freights in scores of thousands, making this great commemorative exhibition, and appropriately so, a record one of attendance and financial results. We have not the exact figures, but suspect the income from all sources during this Royal Jubilee year will be well on the right side of £4000.

The meeting in the famous Quarry Grounds must be reported as a success in every way. The visit of the Royal Horticultural Society was very popular; the presentation to the indefatigable Secretaries met with unanimous approval; the splendid prizes and medals generously provided by the Society, and contributed from various sources, imparted interest and strength, in all cases being well and keenly contested for.

One of these medals demands a special line as being unique. Designed by the Countess Feodore Gleichen for Lord Kenyon, the President of the Shropshire Society, for presentation to the two gardeners taking the largest amount in prizes—one in the open, the other in the county classes, the die then to be destroyed. Thus these Victorian medals will remain the only two existing, and to be cherished the more by their recipients, Mr. James McIndoe, The Gardens, Hutton Hall, Guisborough; and Mr. C. Roberts, gardener to C. H. Wright, Esq., Halston, Whittington, Salop. The medals are of silver, antique in design, 4½ inches in diameter, very massive, and oxidised. We are indebted to practical gardeners for the following report of the chief exhibits in the different sections at this great Show. A large number of local classes, in which both amateurs and gardeners acquitted themselves well, could not be particularised, nor could the cottagers' products, which were of such remarkable excellence, and most creditable to the workers of the district.

GROUPS AND PLANTS.

Despite the disaster which occurred to the large marquee containing the chief miscellaneous groups of plants belonging to Mr. Cypher, as adverted to in our last issue, the redoubtable exhibitor secured the first honours in the two principal classes. His collection of twenty stove and greenhouse plants, which, to the casual observer, appeared to have suffered comparatively little, were in fact wrecked, the magnificent Cycas circinalis, which had not been exhibited since the last Shrewsbury Show, was ruined. Heaths of nearly twenty years' growth can never be themselves again, while Ixoras and others were smashed.

GROUPS.

Mr. Cypher's group of plants (fig. 27, page 197), in or out of bloom, arranged to produce the best effect, and occupying a space of 450 square feet, was indeed a splendid triumph of artistic plant association, and of which it may safely be said eclipsed either of his previous efforts. It was a replica, but on an extended scale, of his group exhibited at Wolverhampton in July last. There was, however, a greater profusion of Orchids and other suitable plants depending from the cork-bark covered alcove and arches. These, stretching over and between the tastefully disposed variegated Crotons and other foliage plants, formed the groundwork of the design, whilst such plants as Humeas, Palms, and the ever graceful Bamboo, Arundinaria falcata, served to form the highly effective background. In addition to the valuable first prize (£35) a silver-gilt Flora medal was bestowed upon Mr. Cypher for this splendid group.

Mr. Chas. T. Mee, Nottingham, was accorded the second honours (£27 10s.), with also a silver-gilt Flora medal, for a highly meritorious group. It contained a rich assortment of tall and finely coloured Crotons and other ornamental foliage plants, with Pitcher Plants (Nepenthes) and Orchids. The back of the group was centred with a massive cork bark arrangement, from which sprang tall plants of Palms, Bamboos, and other excellent plants, forming altogether a most effective design. Mr. W. Finch, Coventry, was awarded the third prize (£20) for also a telling arrangement.

In the class for a group of ornamental foliage plants, occupying a space of 250 square feet, Mr. C. H. Wright, Oswestry, won the premier position with a most effective arrangement of Crotons, Dracænas, Palms, Bamboos, and other appropriate plants; Mr. Cypher being a close second with a somewhat similar composition. The third prize was well won by Mr. J. McIntyre, gardener to Mrs. Gurney Pease, Woodside, Darlington; an extra prize being worthily adjudged to Mr. S. Bremmell, gardener to H. H. Hayhurst, Esq., Wellington. The groups last mentioned afforded a pleasing relief to the miscellaneous ones, and proved excellent examples of decoration, in which ornamental foliage plants alone so readily lend themselves.

SPECIMEN PLANTS.

Coming to the class for twenty stove and greenhouse specimen plants, Mr. Cypher was found occupying his old position—first. The following is a list of the collection:—Statice profusa (a fine large specimen), Allamandas nobilis and Hendersoni, Dipladenia Brearleyana, Clerodendron Balfourianum, Bougainvillea glabra. Ixoras salicifolia, Williamsi and Duffi, Erica obbata, E. Austiniana, and E. Eweriana, whilst a richly coloured specimen of Bougainvillea Cypheri completed the flowering section. This last specimen also gained a gold medal as the most meritorious flowering or foliage plant in the show. The foliage section comprised a grand specimen of Croton Thompsoni, with fine and large leaves, presenting a mass of yellow; C. Johannis, C. Baron James Rothschild, C. angustifolium, Latania borbonica, Kentia australis, and K. Fosteriana. Mr. W. Finch, who was the only other exhibitor, was awarded the second prize for also a good collection, though hardly attaining to some of his previous efforts. He was no doubt prejudiced by the accident of the previous day, for some of his plants were crushed by the falling marquee.

For six plants in flower, Mr. Cypher was deservedly awarded the first prize. The collection included fresh and neat medium-sized specimens of Phœnocoma prolifera Barnesi, Clerodendron Balfourianum, a profusely bloomed Rondeletia brilliantissima, Statice intermedia (very good), Bougainvillea glabra, and Erica Austiniana. The second prize was won by Mr. W. Finch with very good specimens of Ixora Fraseri, Erica retorta major, Allamanda grandiflora, Statice profusa, and Allamanda Williamsi as his best, the third prize falling to Mr. T. Lambert, gardener to Lord Harlech.

For six stove and greenhouse plants, open to the county of Salop, Mr. T. Lambert, Mr. C. Bremmell, and Mr. J. Farrant (gardener to Mrs. Juson, Monkland, Shrewsbury), were awarded the prizes as in the order named, with fairly good examples. For a single specimen stove or greenhouse plant in flower, confined to Shropshire, the first prize was adjudged to Mr. T. Lambert for a very good and profusely flowered example of Dipladenia amabilis. Second prize to Mr. J. Farrant for a large specimen of Ixora Fraseri, and the third was taken by Mr. A. Jones, gardener to G. Burr, Esq., Shrewsbury, with a fair example of Bougainvillea glabra.

VARIOUS PLANTS.

In the class for six Dracænas there were four competitors, Mr. T. Lambert taking the lead with fair examples, including the varieties Shepherdi, amabilis, Baptisti, Sunset, and Reginæ; the second position being secured by Mr. S. Bremmell for very good, but unnamed plants; while Mr. C. J. Mee, Notts, was placed third, there being four exhibits.

Caladiums were very well represented, and for six specimens Mr. R. Hawley, gardener to Mrs. R. Darley, Adcote, was placed first; Mr. W. Leith, gardener to J. R. Greatorex, Esq., second, and Mr. J. Farrant occupied the third position. Coleuses were also well shown as richly coloured pyramids. The first prize was accorded to Mr. J. Carter, gardener to W. J. Scott, Esq., Besford House, Shrewsbury; the second to Mr. A. Myers, Shrewsbury, and the third prize to Mr. S. Bremmell.

Fuchsias were a pleasing feature, inasmuch as they were not closely trained. The first prize was taken by Mr. A. Myers for three large, well flowered, and fresh examples. The second fell to Mr. J. Carter, and the third prize to Mr. T. Hughes, Shrewsbury. Begonias (tuberous-rooted) were fairly well shown by Mr. E. Jones, Wellington, and Mr. R. Taylor respectively; as were Zonal Pelargoniums. Mr. A. Myers and Mr. W. Clift, gardener to R. Taylor, Esq., secured the prizes both for six double and six single flowered varieties in the order named. Gloxinias were not a strong class, though some well grown plants were staged, Mr. J. Parson Smith, Abbotswood, being placed in the first, and Mr. W. Dawes, gardener to A. E. W. Darby, Esq., in the second position for twelve plants. Exotic Ferns were exhibited with much credit by Mr. E. Jones, gardener to A. M. Barber, Esq., Wellington, and Mrs. M. Slaney, Sunnycroft, Wellington.

An interesting and very well represented class was that of twelve plants suitable for table decoration, grown in pots not exceeding 6 inches in diameter. First honours were well won by Mr. J. McIndoe, gardener to Sir J. W. Pease, Bart., Hutton Hall, Guisboro', with elegant and neat examples of Crotons, Palms, and other plants usually employed for the purpose, the second prize falling to Mr. McIntyre, and the third to the gardener to the Hon. Mrs. E. Kenyon, Maesfew, Whitchurch.

For a collection of miscellaneous plants grown in pots not exceeding 5 inches in diameter, not less than twenty in bloom, the prizes were accorded to Mr. H. Jones, Mr. J. Carter, and Mr. J. Farrant respectively, for very good displays.

Orchids were sparsely represented, but a fairly good collection was shown from the gardens of Col. R. T. Lloyd, Aston Hall, Oswestry.

NON-COMPETITIVE EXHIBITS.

It was almost impossible to obtain particulars of these owing to the density of the crowd. Messrs. Richard Smith & Co., Worcester, were represented by a very fine collection of plants in variety, and for which a silver Flora medal was bestowed.

Messrs. James Veitch & Sons, Chelsea, made a magnificent display with numerous choice Caladiums, Nepenthes, and various other plants, besides bold masses of splendid Lilies of the Valley, well winning the gold Banksian medal of the Royal Horticultural Society. Awards of

merit were also granted to the same firm for Caladium Silver Queen and Dracæna Princess Charles of Denmark, both of them distinct and beautiful varieties.

The Royal Society's awards in this department of the Show were made as follows :—Mr. J. Cowan, of Garston, silver Banksian medal for group of Tea Roses, Lilies, and Orchids; Messrs. R. P. Ker & Sons, Liverpool, Royal Society's silver Flora medal for group of Crotons; Mr. H. H. France-Hayhurst, Overley, special commendation certificate for Rhododendron Princess Royal; Messrs. Veitch & Sons, London, gold Banksian medal for best representation of Victorian era group, also certificates of merit for Dracænas and Caladiums, as well as the Victorian award—a handsome dessert service; Messrs. R. Smith & Son, of Worcester, silver medal for group of plants; Mr. J. Cypher, gold medal for group and silver medal for stove and greenhouse plants; Mr. C. J. Mee, of Nottingham, silver Flora medal for group for effect; Mr. A. Myers, Shrewsbury, silver Banksian medal for Fuchsias.

The Shropshire Society's special awards in the large tent were :—Mr. J. Cowan, Garston, gold medal for groups of Orchids, Roses, and Lilies; Messrs. R. P. Ker & Sons, Liverpool, gold medal for Crotons; Messrs. R. Smith & Sons, Worcester, gold medal for collection of plants.

In the tent nearest to Quarry Place the Royal Societies' awards included the following:—Mr. W. J. Scott, Shrewsbury, special commendation certificate for Coleus; Mr. A. Myers, Shrewsbury, special certificate for Coleus, and the silver Banksian medal for Zonal Pelargoniums.

Another firm of local florists who were similarly honoured was Messrs. Jones & Sons. They had a most attractive stand of cut flowers of their own growing, and were presented with one of the Victorian awards for this exhibit. Messrs. Dicksons, Chester, made a grand display of flowers and plants, for which they received the silver-gilt Flora medal of the R.H.S. and the silver medal of the S.H.S.; and Messrs. Webb and Sons were awarded the silver medal of the S.H.S. for a grand collection of flowers, fruit, and vegetables. A like honour was bestowed upon Mr. Albert Myers, Shrewsbury, who showed a wonderfully fine lot of flowers. Messrs. Dobbie & Co., of Rothesay, exhibited a beautiful stand of Dahlias, for which they were awarded the Banksian medal of the R.H.S. and gold medal of the S.H.S.; Mr. B. R. Davies, of Yeovil, received the Flora medal of the R.H.S. and the gold medal of the S.H.S. for a fine lot of Begonias; Mr. J. Hudson (gardener to Mr. Leopold de Rothschild) was given the silver-gilt Flora medal of the R.H.S. and the gold medal of the S.H.S. for a collection of hardy Water Lilies; and Messrs. W. & J. Birkenhead the silver medal of the S.H.S. for a stand of Ferns. Mr. Campbell, High Blantyre, gained the silver Banksian medal for a collection of cut Carnations and Picotees; Messrs. Perkins a Flora medal for exhibits in classes 24, 25, and 31, and Messrs. Carter a gold medal for their fine stand at the entrance to the tent. Other exhibitors were Colonel R. T. Lloyd; Messrs. Eckford, Wem; R. W. Proctor & Son, Chesterfield; S. Mortimer, Farnham, Surrey; J. H. White, Worcester; James Backhouse & Son, York; W. F. Gunn, Olton; Jarman & Co., Chard, Somerset, &c.

In an extra tent Messrs. Pritchard & Sons, nurserymen, Shrewsbury, showed a fine collection of Potatoes, for which they received a Victorian award consisting of a handsome full dessert service of the value of £12 12s. The collection included 260 varieties collected from America, France, and Germany, in addition to British varieties of every known kind. There were black, red, blue, pink, white, round, kidneys, and flukes, occupying 180 square feet. Owing to the damage by the gale on Tuesday this firm were compelled to remove the greater portion of their plants.

A Banksian silver medal was awarded to Mr. Morgan Williams and the Earl of Carnarvon for groups of vegetables, while Sir Joseph Pease received a silver-gilt Knightian medal for his exhibits in classes 64 and 65.

FLORAL ARRANGEMENTS.

This was an important and beautiful feature of the Show—an exhibition in itself, such as has not elsewhere been seen. In Class 24, for a display of floral arrangements in a space 12 by 5 feet, any design in flowers being admissible, there were four extensive collections staged in almost every device imaginable, including bouquets, wreaths, crosses, anchors, harps, pincushions, lyres, buttonholes, and shoulder sprays. Messrs. Perkins & Sons, Coventry, well deserved the premier honours accorded. They arranged one of the most beautiful displays that has been seen at any exhibition. The centre figure was a tall basket with a hood magnificently furnished with Oncidiums, Dendrobium fimbriatum,

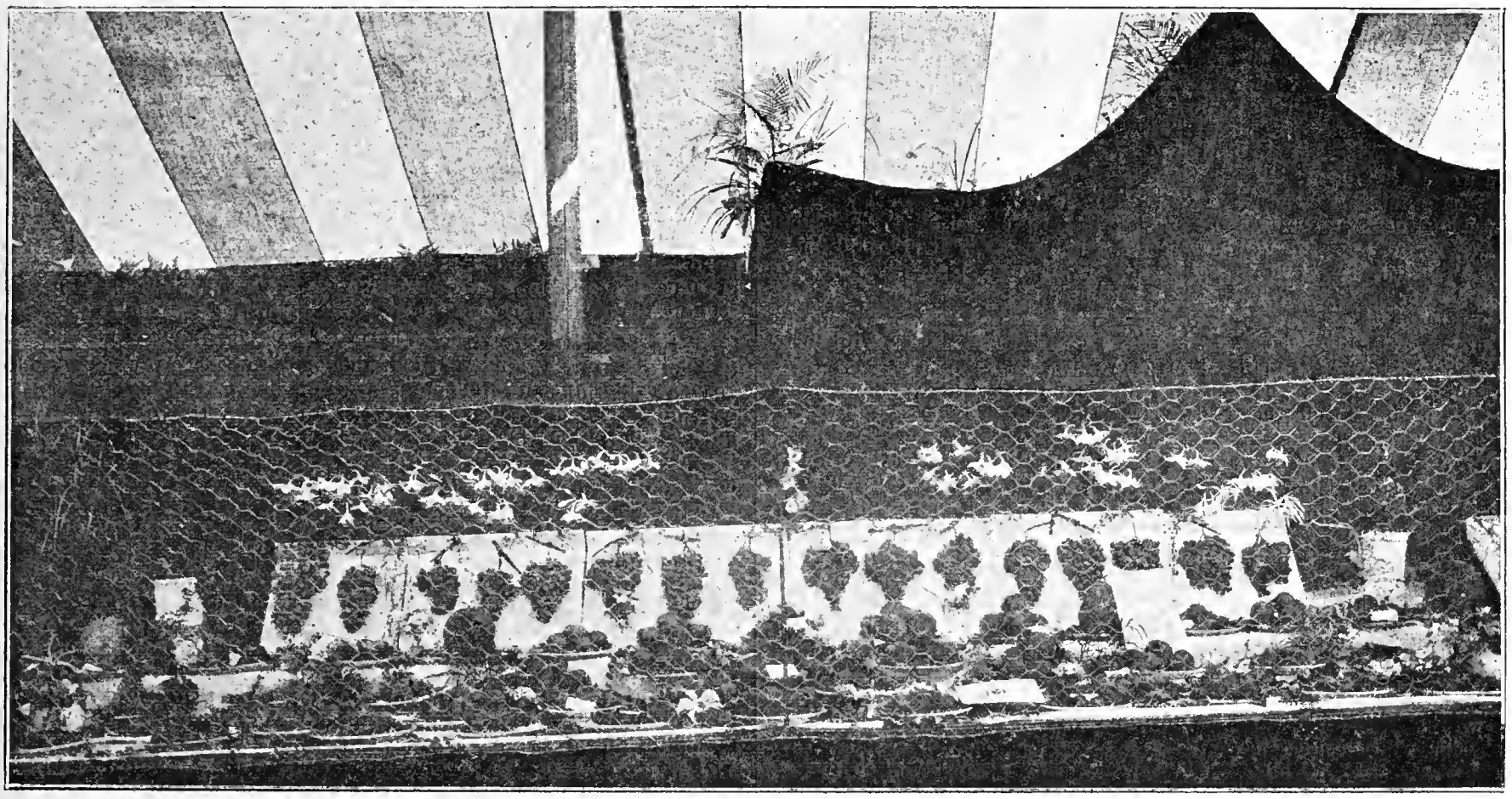

FIG. 26.—MR. J. McINDOE'S COLLECTION OF FRUIT. (*See page* 191.)

Lælias, Cattleyas, and Odontoglossums, associated with long trailing growths of Asparagus plumosus, delicate Ferns, and crowning the whole on the top were feathery sprays of Rhus Cotinus. On the back framework of the stand, which was draped with black velvet, were superb shower bouquets; these, with a huge harp, principally made from white Roses, Lilium Harrisi, white Bouvardias, and Tuberoses, the strings being ornamented with miniature Myosotis blooms, had a most pleasing effect. Further, a pincushion-like base, composed of Violas Countess of Kintore for the borderwork and Max Kolb (blue) for the groundwork, supported a couple of lovely sprays of Odontoglossum Alexandræ, while arranged around as a fringe to the flowers was a margin of Statice, representing a laced border. This was much admired. There were many other attractive features in this wonderful display, such as brackets and epergnes, charmingly arranged, and so graceful in effect as to almost baffle description. The second prize was awarded to Messrs. Jones & Sons, Shrewsbury, whose exhibit contained many highly effective designs. The whole arrangement was set up in the form of an arbour, the supports of which were clothed with Lichen—a novelty certainly, but which in the opinion of several persons did not contribute very much to the effect as a whole. A large harp occupied the centre of the background, while many tastefully arranged shower bouquets, baskets, shoulder sprays, and small epergnes were freely distributed within the allotted space. Miss H. M. Stevens, Great Western Arcade, Birmingham, received third honours, and though her collection had not the finish and lightness of the others, it included many splendid hand and shower bouquets, hearts, anchors, harps, crosses, and baskets of flowers. All four collections formed an extensive and unique display, well deserving of the excellent prizes offered by the Society—viz., £15 first, £12 10s. second, and £10 respectively.

Bouquets.

These were numerous and of a high order of excellence. For a ball bouquet and a bridal bouquet for which £5, £4, and £3 were offered as first, second, and third prizes, three sets of splendid examples were in competition, Messrs. Perkins & Son securing first, Messrs. Jones and Sons the second, and Messrs. Pope & Sons, King's Norton, the third honours. The first prize bridal bouquet was most judiciously arranged with Stephanotis, Eucharis, and long trailing growths of Asparagus plumosus, while in their example for a ball bouquet Oncidiums and Dendrobiums were plentifully yet tastefully used. The second prize display was very much of the same character, but not quite so pleasingly arranged towards the trailing points.

Exhibitors in the foregoing class were excluded from the next class for bouquets in which Orchids were not allowed to be used. Mr. J. R. Chard, Stoke Newington, secured the first prize in this class, his bridal bouquet being principally composed of Pancratiums, white Roses, and Carnations, while in the example for a ball coloured Roses and Carnations with Tuberoses and Pancratiums formed the chief components, assisted with a free use of Asparagus and Maidenhair Ferns. Mr. F. H. Norris, Handsworth, Birmingham, was placed second, and Mr. F. W. Seale, Sevenoaks, third.

It was a very happy idea of the executive to offer substantial prizes in the next three classes for shower bouquets, one composed of Cactus Dahlias, the second of Sweet Peas, and the third of Roses. Such selections teach what can be done with certain flowers unmixed with any others, as well as add a charm and impart variety to an exhibition. A shower bouquet of Cactus Dahlias with any foliage we fear would be considered by many as heavy and ungainly, but that exhibited by Messrs. Pope & Sons consisted of a rosy peach-coloured variety, Countess of Radnor, arranged with a plentiful use of Asparagus plumosus and Smilax, was most pleasing and effective. Mr. W. F. Seale and Mr. J. R. Chard were placed second and third respectively. Eight competitors there were.

Eight exhibitors also tried their skill in arranging Sweet Peas as shower bouquets, and with most creditable results. In that for which the first prize was awarded to Messrs. Pope & Sons lively pink and white varieties preponderated, the effect being very pleasing. Messrs. Proctor & Sons, Chesterfield, were placed second ; and Messrs. D. & W. Croll, Dundee, third.

Seven competitors produced bouquets composed of Roses, with their own foliage. Messrs. Pope & Sons were first for a bouquet of a pink Rose and pure white Tea Roses, a simple and attractive arrangement. Messrs. Perkins & Sons received the second award ; and Messrs. Proctor and Son third.

For a stand of cut flowers for table decoration Mr. R. Chard, Mr. Seale, and Miss F. Kettle, Market Drayton, were placed in the order of their names. Buttonholes and shoulder sprays, six of each, brought several competitors, Messrs. Perkins & Sons, Mr. Chard, and Sir C. E. Isham, Bart., Lamport Hall, Northampton, being placed first, second, and third respectively.

Collection of Flowers.

Collections of Gladioli in a space of 12 feet by 5, nurserymen only, brought two collections. The first prize was awarded to Messrs. Harkness and Son, Bedale, Yorks, for a brilliant display, the varieties being remarkable both for length of spike and breadth of flower. The second prize was withheld, the third being awarded to Messrs. Wallace & Co., Colchester, whose collection contained many of Lemoine's new varieties.

Messrs. D. & W. Croll made a very pleasing arrangement with cut Roses in a space 8 feet by 6 feet. The collection included Hybrid Perpetuals, Teas, Polyanthas, and Moss, the whole of excellent quality. They deservedly received the first prize, and Messrs. Pope & Sons the second.

Dahlias, exhibited in a space 10 feet by 6 feet, produced a brilliant effect. Mr. F. W. Seale took the lead among the other five competitors with a collection including representative varieties of Show, Fancy, Pompons, single, and Cactus effectively arranged. Messrs. Keynes, Williams, & Co., Salisbury, were placed second, and Messrs. Jones and Son third, both exhibiting well, as indeed did others in this fine class.

Seldom, if ever, has such a profusion of hardy herbaceous flowers been set up in competition in the classes confined to nurserymen only. So great was the display made that it almost filled one side of a very long tent. Mr. F. W. Gunn, Olton, Birmingham, was placed first with an admirably arranged collection of meritorious flowers, the absence of crowding enhancing their effect. Messrs. James Cocker & Sons received second honours with a grand lot, and Mr. M. Campbell, Blantyre, N.B., third, also with an imposing display.

For a collection of hardy bulbous and tuberous-rooted flowers in variety, to occupy 12 feet by 6 feet of space, Messrs. Harkness & Sons were placed first, and Messrs. Barr & Sons second. Massive bunches of Gladioli in variety, Liliums, Montbretias, Galtonias, and Alströmerias stood out prominently and attractively in both collections.

A space of 10 feet by 6 feet was allotted for collections of Carnations. Mr. W. Campbell obtained the first place with an excellent assortment of well-known named varieties, as well as several prominent seedlings. Messrs. Laing & Mather, Kelso-on-Tweed, followed very closely as second, and W. G. Philips, Esq., Berwick, Shrewsbury, was a creditable third.

Cut Blooms.

Substantial prizes were provided for forty-eight cut Roses (open) ; and for twenty-four blooms open to county of Salop. Messrs. Cocker and Sons, Messrs. D. & W. Croll, and Messrs. Harkness & Sons received the first, second, and third prizes in the open class with good fresh collections. T. B. Wood, Esq., Ludlow, was placed first in the county class ; Col. Kenyon second, and Lord Trevor third.

Mr. P. Mortimer, Farnham, staged a magnificent collection of twenty-four Dahlias, distinct, and was deservedly awarded the first prize. Mr. B. Brian, Langton, Staffordshire, was placed second, and Mr. Seale third, all having grand exhibits. The best twelve bunches of Cactus Dahlias were staged by Messrs. Keynes, Williams & Co., Mr. Seale being second, and W. E. King, Esq., Leominster, third. For nine Dahlias, amateurs, Mr. Thos. Ellis, Llamlaide, was first, Mr. Abel Lowe second, and Mr. W. E. King third.

Cut stove and greenhouse flowers were represented by numerous collections. For twelve varieties, G. H. Kenrick, Esq., Edgbaston, Birmingham, was placed first, Sir J. W. Pease, Bart., Hutton Hall, second, and Lord Harlech, Oswestry, third. Colonel R. T. Lloyd, Aston Hall, Shrewsbury, staged a splendid box of six varieties and received first honours, F. T. Kynnersly, Esq., Ironbridge, second, and T. B. Wood, Esq., third. Classes were liberally provided for Asters, hardy flowers, Carnations, Picotees, Gaillardias, and Gladioli, most of the classes being open to amateurs in the county. The several flowers well represented and the competition was great.

In the special prize class, offered by Mr. Henry Eckford, Wem, for eighteen varieties of Sweet Peas, there were six competitors, T. Aldersey, Esq., 125, Bellevue, being a good first with the most beautiful and newer varieties. Mr. W. E. Swan was placed second ; and R. L. Kenyon, Esq., Oswestry, third.

For the special prizes offered by Messrs. Jones & Sons for twelve bunches of Cactus Dahlias Mrs. Watkins, Shrewsbury ; W. E. King, Esq., and the Rev. T. M. Bulkeley Owen shared the honours in the order of their names. Other special prizes offered by Messrs. Clibran & Sons, Altrincham, and Mr. A. Myers, Shrewsbury, were also keenly contested.

Fruit.

The competition in the fruit classes is always remarkably keen at Shrewsbury. This year proved no exception to the rule, and many fine exhibits failed to secure a place ; indeed it may be truly said that to win in any of the classes was a great honour, to lose no disgrace. How close in point of merit some of the collections were to each other will be readily seen by the pointing given below.

Decorative Dessert Tables.

The conditions were that each table be decorated with plants in pots not exceeding 5 inches in diameter, and not more than sixteen dishes of fruit to be staged, these to be selected at the discretion of exhibitor from a list given in the schedule.

The premier award, after a close contest, was won by Mr. J. H. Goodacre, gardener to the Earl of Harrington, Elvaston Castle, Derby. His arrangement was light and well executed, and his fruit superb. The centre was formed of a circular piece of plate glass, surrounded with green Selaginella, from which Orchids, Grasses, and Asparagus plumosus sprung in a charmingly natural manner. Two other trumpet-shaped glasses were arranged, with Masdevallias and Asparagus deflexus trailed lightly upon the cloth. The Grapes were arranged on rustic stands at the four corners, but these were faulty, as their backs—which must of necessity face some of the guests at the table—were the reverse of ornamental. The whole forming a nicely balanced and suitable arrangement, and although the fruit was fine, and in every way worthy of its great exhibitor, a perusal of the pointing will show that it was in the artistic part of the work that he managed to turn the scales upon his opponent.

The second prize was well won by Mr. J. McIndoe, gardener to Sir J. W. Pease, Hutton Hall, Guisboro', with a somewhat taller arrangement. A fine Pine formed a centre, a tall trumpet glass being placed on either side ; eight small glasses were disposed round the sides of the table. The Grapes were arrranged in baskets at each end. The glasses were furnished with Asparagus deflexus and Montbretias. Every dish of fruit was of attractive appearance, the superb half dozen of Golden Eagle Peach being the most handsome in the whole Show.

Result of Judges' Awards.

	1st prize points.	2nd prize points.
Apples	—	6
Apricots	6	6
Figs	4	—
Grapes, black	7	6
,, ,,	5	5½
,, white	6	6½
,, ,,	4	5
Melons	6	4½
,,	4	4
,,	—	—
Nectarines	5	5
,,	5	4½
Peaches	6	6
,,	4	4½
Pears	—	5
,,	4	5½
Plums	5½	4
,,	4	—
Pine	6	5
Beauty of flowers and foliage	8	6
Harmonious blending of colours	8	6½
General arrangement for effect	8	9
Totals	105½	104½

The third position was secured by Mr. Harris, gardener to Lady Henry Somerset, Eastnor Castle, Ledbury, for fruit and an effective arrangement, which received 99½ points, Mr. Gleeson, Stanmore, coming fourth with 96½ points. Five exhibitors competed.

Victorian Fruit Class.

To illustrate the produce of British gardens three prizes were offered for sixty dishes of fruit arranged on side tables, in a space 16 feet by 4 feet 6 inches, artistically displayed with cut flowers, foliage, and not more than twelve plants in pots not exceeding 5 inches in diameter. The fruit had to be selected from a list given in the schedule, the whole to be judged by points up to the maximum for each kind in the R.H.S. Code, 1896, a maximum of twenty-four points allowed for decoration and artistic arrangement. The first prize was the handsome one of £30 and the gold medal of the Worshipful Company of Fruiterers; second, £25 and the silver-gilt Knightian medal of Royal Horticultural Society; third, £20 and the silver medal of the Shropshire Horticultural Society.

Three doughty champions entered the fray, and tough work the Judges must have had in deciding on the relative merits of the collections in this the greatest fruit class on record, the number of dishes stipulated for corresponding with the years of her Majesty's reign. Evidently no pains were spared by the adjudicators in scrutinising every dish, and the result of their decision met with general approval, which indeed it could scarcely fail to do, as it was arrived at by method and calculation as in the previous class, in other words, by scientific judging. The winners of the prizes were :—Mr. McIndoe, first (and a proud and happy man he seemed); Mr. R. Dawes, gardener to Mrs. Ingram, Temple Newsam, second, Mr. Goodacre being a close third. Below is given a detailed account of the "pointing," and a description of each collection separately.

	1st prize points.	2nd prize points.	3rd prize points.
Black Grapes	23	29	24
White ,,	21	23	26
Pines	12	20	16
Melons	25	24	26
Apples	35	18	26
Apricots	11	16	23
Cherries	3	5	4
Currants	6	4	—
Figs	15	12	13
Gooseberries	4	7	5
Nectarines	32	34	28
Peaches	27	32	24
Pears	33	25	28
Plums	38	26	20
Nuts	4	—	—
Strawberries	—	4	7
Tomatoes (red)	3	6	3
,, (yellow)	3	—	6
Oranges and Lemons	10	—	—
Decorative and artistic arrangements (24 points maximum)	12	6	15
Bananas	4	6	—
Totals	321	297	294

The style of arrangement adopted in Mr. McIndoe's collection was a fairly good one. Crotons and Palms were arranged at the back of the Grape stands, with bunch-like masses of Eucharis amazonica and Montbretia crocosmæflora springing up between; Orchids, light pieces of Ampelopsis Veitchi, and Maidenhair Fern being placed between the dishes.

The collection, on the whole, was a superb one, well worthy to win so unique and coveted a prize. If there were a weak feature about it, it was found in the white Grapes, which would have been better for a little more fulness of bunch and brightness of colour. Black Grapes were, however, good, so also were the Pines. The reason why only twelve points are recorded for the Pines in this collection is that it only contained two fruits, while in each of the other collections four were staged. Each one of the fruit dishes was, however, in grand condition, and fairly returned the exhibitor the winner by a good majority of points.

The Grapes were Bowood Muscat (two), bunches slightly loose; Duke of Buccleuch (two), good; Buckland Sweetwater, one large compact bunch, the other somewhat smaller, neither really well coloured; Muscat of Alexandria, one loose bunch, the other compact and well coloured; Black Hamburgh (two), very large and finely proportioned, but not quite perfect in colour; Gros Guillaume (two), medium size, shapely, beautifully coloured; Gros Maroc (two), grand in both bunch, berry, and colour; Alnwick Seedling (two), good size of bunches, perfectly finished. Melons (four): One variety being Magnum Bonum, 5 or 6 lbs. in weight, well netted; Scarlet Premier; Darwin, bright and good; and Scarlet Model.

Five dishes of Peaches were staged, the varieties being Violette Hâtive, good; Golden Eagle; good size, fine in colour; Exquisite, large, but not quite ripe; Stirling Castle, highly coloured, grand in every way; and Royal George, good in size and colour. Of Nectarines there were also five dishes, one a duplicate. The varieties were Stanwick Elruge, grand; Pitmaston Orange, large and good; Lord Napier, large; and Spencer, superb.

Pines were represented by a good and well ripened Smooth Cayenne and a Queen of fair size, beautiful shape, and colour. Of Apricots there were three varieties, Kaisha, Large Early, and Moor Park.

Plums were shown in exceptionally good condition, the varieties being July Green Gage; Golden Gage, grand; Boddaert's Green Gage; Decaisne, a fine variety not often seen in such good condition; and Burbank, a new Japanese variety of great promise, the fruits being large, highly coloured, and luscious looking.

Pears made a fine show, the varieties being Marguerite Marrillat (new), Souvenir du Congrès (two), Pitmaston Duchess (two dishes) grand; and Selous. Tomatoes Green Gage (yellow) and The Queen (red) were very large and showy. Of Figs there were three dishes, two being Brown Turkey, and the other Negro Largo.

Apples were numerously and grandly shown. The varieties were James Grieve, beautiful; Washington, grand; Gascoyne's Scarlet, superb, consisting of very large, brilliantly coloured fruits; and Duchess of Gloucester, wonderfully bright and good. The other dishes were Bigarreau Napoleon Cherry, Kentish Cob Nuts, Orange Exquisite, Lemons, Gooseberry Whinham's Industry, Currants White and Red Versailles, and a cluster of Musa Cavendishi. The photographic illustration (fig. 26, page 189) represents this exhibit.

The collection which won second honours was also a very fine one, although it did not run the premier exhibit particularly close. Its strong points were Grapes, Peaches, Nectarines, Pines, and Bananas, but only six points were awarded for decoration and artistic arrangement. The Pines were arranged on wire stands covered with moss and decorated with yellow flowers, Asparagus plumosus and Hollyhocks being arranged between the dishes. The effect was, however, altogether too stiff.

The kinds and varieties of fruits staged were—Grapes, Gros Maroc, two bunches, grand alike in bunch, berry, and colour; Foster's Seedling (two), of fair size and colour, berries rather small; Gros Guillaume (four), bunches large, perfect in shape and superbly coloured; Muscat of Alexandria (four), two of them were large and well shaped, the remaining two somewhat small, all wanted a little more colour; Madresfield Court (two), large, well shaped bunches, rather deficient in colour; Buckland Sweetwater (two), grand in both bunch, berry, and colour. Pines, one Smooth Cayenne of moderate size; three Queens, good. Melons, seedling, large, well netted and coloured, Reid's Scarlet-flesh; Temple Newsam Hybrid, beautifully netted; and Golden Gem.

Peaches, Goshawk, one dish, fair; Dymond, one, large and good; Bellegarde, even and well coloured; Barrington, fine colour, good size; Violette Hâtive, and Grosse Mignonne. Among Nectarines there were superb examples of Lord Napier, Spencer, and Humboldt. Pears were represented by good dishes of Souvenir du Congrès, Clapp's Favourite, Williams' Bon Chrêtien, and Jargonelle. Three dishes of Figs were staged, one being Negro Largo, the others fine examples of Signorina. Plums, Golden Gage (two), Early Prolific, Transparent Gage, of wonderful size, and Kirke's. The Apples were Red Astraehan, Thorpe's Pippin, and Irish Peach; the remaining dishes consisting of Moor Park and Large Early Apricots; Gooseberries, Dan's Mistake (red) and Plunder (green); Strawberry, Late Pine; Tomatoes (red), Challenger and Ruby; Cherry, Late Duke; Red Currants, and a grand cluster of Bananas. Mr. Goodacre was a dangerously close third. His collection was strong in Grapes, Melons, Apricots, and Pears; but many of his fruit dishes fell away considerably from the standard maintained in the collections of his successful opponents. For artistic arrangement, however, his exhibit secured the greatest number of points. In this instance light and graceful plants were arranged at the back of the Grape stands, Carnations being arranged in glasses between them and Orchids at intervals between the dishes of fruit. Tufts of Selaginella were also disposed at intervals along the front of the table, upon which Lapageria flowers were placed.

Some of the most noteworthy dishes in the collection were Grapes. Black Hamburgh (two bunches), beautifully coloured; Gros Maroc (two), superb in every way; Muscat Hamburgh (two), splendid in size and colour, for the variety; Gros Guillaume (two), large, shapely bunches, good in size, perfect in colour, but slightly rubbed; Duke of Buccleuch (two); Foster's Seedling (two); Muscat of Alexandria (two), large, full and shapely, slightly wanting in colour; two others of same variety being large, full, and well coloured. Melons were fine, Frogmore Scarlet was perhaps the finest specimen in the show. Countess and Hero of Lockinge were also good. A grand dish of Princess of Wales Peach should also be noted.

Collection of Fruit.

For nine dishes, not less than five kinds, nor more than two varieties of a kind, £5 and the silver medal of the Worshipful Company of Fruiterers was offered for the first prize, £3 for the second, £2 for the third, and £1 for the fourth. Seven good lots were staged. Mr. S. Bremmell, gardener to H. H. Francе Hayhurst, Esq., Overley, Wellington, Salop, was a good first, showing Muscat of Alexandria and Gros Maroc Grapes (the bunches of the former being large and fairly well coloured, the latter good in every way), a fine and well netted Melon, good Royal George Peaches, Williams' Bon Chrêtien Pear, Figs, Apricots, and Nectarines. The second prize went to Mr. G. Bible, gardener to Lord Trevor, Brynkinalt, Chirk, whose best dishes were well-coloured Black Hamburgh Grapes, a beautiful Melon The Countess, and grand Barrington Peaches; the third position being occupied by Mr. J. Langley, gardener to Rev. T. M. Bulkeley Owen, Tadsmore Hall, West Fenton; and the fourth to Mr. C. Roberts, gardener at Halston Hall, Oswestry.

Silver Medal Grape Classes.

The handsome prize of £6 and the silver medal of the Fruiterers' Company were offered for the best four bunches of black Grapes, to consist of two bunches of two varieties; other prizes of £4, £3, and £2 being also offered in the same class. The coveted award was secured by Mr. G. Davies, gardener to Rev. F. Anderson, Welsh Frankton,

Oswestry, who staged Black Hamburgh, in large clusters, quite black, and Gros Maroc, large in bunch and berry and good in colour. Mr. T. Lambert, gardener to Lord Harlech, Oswestry, came in second with Gros Maroc, in very fine condition, and Madresfield Court, large in bunch and berry, but wanting in colour; the third position being occupied by Rev. T. M. Bulkeley, who staged Madresfield Court and Black Hamburgh, both large in bunch but not well coloured. Fourth, Mr. J. Skitt, gardener to Mrs. Bright, Ashfield, Liverpool.

For four bunches of white Grapes, in two varieties, the prizes offered were of the same value as those in the preceding class. Seven good lots were staged, the first prize being deservedly awarded to Mr. J. Campbell, gardener to C. E. Newton, Esq., Mickleover Manor, Derby, who had well coloured examples of Muscat of Alexandria and Canon Hall Muscat. The second prize went to Mr. J. Lambert, who staged large bunches of Muscat, rather green; fine solid bunches of Buckland Sweetwater, fairly well coloured. Third, H. B. Marling, Esq., Clanna, Lydney, Glos., the varieties staged being Buckland Sweetwater, fine in bunch, deficient in colour; Muscat, compact in bunch, colour fair. Mr. Carr, gardener to Sir O. Wakeman, Yeaton, Salop, secured the remaining award.

Other Grape Classes.

Mr. Bremmell was first for two bunches of Black Hamburgh with compact beautifully finished examples, Mr. F. Harris being second, and Mr. F. Barnes, gardener to the Duke of Westminster, Eaton Hall, Chester, an extremely close third. Fifteen lots were staged. For two bunches of Madresfield Court, Messrs. Langley, Skitt, and Barnes secured the prizes in the order named, in each case with examples showing high culture. Mr. G. Davies secured the first prize for two bunches of Black Alicante with superbly coloured clusters; the second award going to Mr. Goodacre for shapely examples, and the third to Mr. A. H. Hall, gardener to J. E. Waterhouse, Esq., Macclesfield. Nine exhibits were tabled in the class for two bunches of Gros Colman or Gros Maroc. Mr. Goodacre was to the front with handsome and superbly finished bunches of Gros Maroc; second, Mr. T. Lambert; third, Mr. F. Jordan, gardener to J. Corbett, Esq., Impney Hall, Droitwich.

Ten lots of Muscats were tabled, the premier award going to Mr. W. Neild, Holmes Chapel, Cheshire, for full heavy bunches, not well coloured; the second to Mr. W. Fyfe, gardener to Lord Wantage, Lockinge Park, for large bunches, even in berry, but rather flat; and the third to Mr. J. Campbell, who had compact bunches, fairly good in colour. The class for two bunches of white Grapes, any other variety, was not a good one, want of colour being noticeable. The prizes in each instance were awarded to large bunches of Buckland Sweetwater, and were secured by Messrs. G. Davis, J. McDonald, and R. Lawley, in the order named.

Miscellaneous Fruits.

Sixteen fine dishes of Peaches were staged. A grand one of Sea Eagle won for Mr. J. Robinson, gardener to R. W. Harley, Esq., Herefordshire, the first prize. The second went to Mr. Tyler, gardener to C. A. Jones, Esq., Bron, Hendre, for fine Barrington; and the third to Mr. B. Ashton, gardener to Lord Lathom, Ormskirk, for Royal George. Of Nectarines there were twelve dishes. The best came from Mr. F. Harris – variety Pitmaston Orange; Mr. McDonald being second; and Mr. Wilkes, gardener to Mrs. Meakin, Cresswell Hall, Staffs, third.

For six Apricots Mr. F. Bible won, and for twelve Plums, green or yellow, Mr. Pope. Twenty-one green-fleshed Melons were staged. Mr. F. Tugwood was first with an unnamed seedling; Mr. Birch, gardener to Mrs. Watkins, Shotton Hall, second with Earl's Favourite; and Mr. C. Mee, Nottingham, third. In the class for scarlet-fleshed ones nineteen were set up, the premier award going to Mr. R. Townsend; the second to Mr. J. Durnell, gardener to R. Kenyon, Esq., Oswestry; and the third to Mr. C. Bellis. Mr. Bremmell won for a single dish of Cherries.

Local Classes, Open to the County of Salop.

Two bunches black Grapes.—First, Mr. Langley, shapely bunches, good colour. Any other variety, black, two bunches.—First, Mr. Carr The same exhibitor won for two bunches of Muscats, and for the same number of any other white Mr. R. Lawley was the winner. Mr. R. Townsend was first for six dishes of hardy fruits, being followed by J. Wood, Esq., Henley House, Ludlow; and Mr. E. Walker, in the order named.

VEGETABLES.

The display of vegetables at this exhibition was one of the most remarkable that has been seen both on account of the high quality and the quantity that were staged. Magnificent examples were shown in the several classes in which the leading seedsmen offered generous awards, and in some cases the merits of the different collections were very close indeed. Not only was this excellence noticeable in the stands of our leading growers but also in those of the cottagers of the district, who deserve the highest credit for the standard to which they have attained. All kinds of vegetables were exhibited in both sections, and there can be little doubt, that taken as a whole, it was one of the finest exhibitions that has ever been seen either at Shrewsbury or elsewhere.

In some former years it has been said, and justifiably, that size was thought too much of by growers and Judges. This show, however, brought a radical change in this respect, for quality was unquestionably to the front. Of course some few coarse specimens found a place on the tables, but this was rather an advantage than otherwise, as it served admirably to accentuate the excellence of the others. It was clearly apparent that the Judges had sought for quality and made size a secondary consideration only. This we were glad to see, as there can be no question that some of the vegetables shown here and elsewhere were very much too large for the purposes for which they were supposed to be grown. It was an impossibility to get the whole of the awards that were made, and we have given therefore the prizewinners in a few of the most important classes only.

The principal class was that for nine distinct kinds of vegetables grown from seeds supplied by Messrs. Sutton & Sons, Reading. In addition to the six money prizes there was a valuable silver Jubilee commemorative cup. So good were the examples staged that the Council of the R.H.S. adjudged a silver Banksian medal to the first prize stand. There were eleven exhibitors, and Mr. C. Foster, gardener to Morgan S. Williams, Esq., Aberpergwm, Glyn Neath, succeeded in carrying off first honours. As a whole, the stand (fig. 28, page 201) was clean and even, with no coarseness in the products. It was comprised of Solid White Celery, Autumn Mammoth Cauliflower, Prizetaker Leek, Selected Ailsa Craig Onion, New Red Intermediate Carrot, Blood Red Beet, Satisfaction Potato, Perfection Tomato, and Prizewinner Runner Bean. Mr. W. Pope, gardener to the Earl of Carnarvon, Highclere Castle, Newbury, was second with a stand almost equally as good as the preceding one. The best dishes were Sutton's Best of All Bean, Autumn Mammoth Cauliflower, Prizetaker Leek, and Satisfaction Potato. Mr. J. Bowerman, gardener to C. Hoare, Esq., Hackwood Park, Basingstoke, was third; Mr. C. J. Waite, gardener to the Hon. W. P. Talbot, Glenhurst, Esher, fourth; and Mr. T. Wilkins, gardener to Lady Theodora Guest, Inwood House, Henstridge, fifth.

In Messrs. Webb & Sons' class for eight distinct kinds there were six exhibitors, of whom Mr. Wm. Pope was awarded first position. A silver Banksian medal, in addition to the prize, was awarded. This exhibitor staged Early Mammoth Cauliflower, Improved Banbury Onion, Defiance Carrot, Jubilee Tomato, Satisfaction Potato, Pink Perfection Celery, Duke of Albany Pea, and Eclipse Bean, all in capital form. Mr. J. Bowerman was second, his best examples being Ailsa Craig Onions, Eclipse Beans, and Progress Potatoes. The third and fourth positions were taken by Messrs. T. Wilkins and C. J. Waite in the order of their names.

For the valuable prizes offered by Messrs. Carter & Co. to growers resident in certain English counties or in Wales there was keen competition, eight collections being staged. Mr. R. Milner, gardener to Miss Talbot, Penrice Castle, Swansea, was a highly creditable first with Model Leek, Solid Ivory Celery, Autumn Giant Cauliflower, Jersey Lily Turnip, Ailsa Craig Onion, Duke of Albany Pea, Supreme Potato, Intermediate Carrot, and Perfection Tomato. A bronze Banksian medal was also accorded this collection. Mr. R. C. Townsend, gardener to Colonel R. T. Lloyd, took second place with good Celery, Onions, Peas, Runner Beans, Tomatoes, and fair Leeks, Cauliflowers, and Potatoes. Mr. J. Birch was placed in the third position, Mr. H. Taylor in the fourth. Mr. W. Prior in the fifth, and Mr. S. Bremmell in the sixth.

Mr. E. Murrell offered prizes for twelve distinct vegetables grown from his seeds, these being taken by Messrs. J. Robinson, P. C. Townsend, and J. Birch in the order named. Mr. Birch succeeded in winning Messrs. Pritchard & Sons' special first prize, followed by Mr. Bellis and Mr. J. Delamere.

In the class for a collection of Potatoes, five dishes, there were fourteen exhibits staged, Mr. C. Foster winning with Windsor Castle, Boston Q. Q., Abundance White, Reading Russet, and Tennyson coloured. Mr. Aston was second with Goldfinder, Reliance, A1, Mr. Bruce, and Reading Russet. Mr. W. Pope took the third place. There were twenty stands of three dishes staged, Mr. Foster winning with Abundance, Satisfaction, and Windsor Castle, followed by Mr. W. Pope and Mr. T. Wilkins. For the single dish twenty-two staged, Mr. C. J. Waite taking first with nice tubers of Windsor Castle.

Tomatoes were good. Mr. A. H. Hall was first with Perfection, Mr. Foster and Mr. Risebrow following in the order named with the same variety. Cucumbers were not very good. Mr. Hall staged the best brace in Diamond Jubilee, Mr. Risebrow and Mr. Wilkins following. Peas were a good class, Mr. Cuckner and Mr. Bible being the winners. French dwarf and runner Beans were also staged in goodly numbers, Mr. G. Davies winning for dwarfs and Mr. Atkin for runners. Mr. Pope won for three Cauliflowers; Mr. Abbot for Celery with fine sticks of Solid White. Parsnips, Carrots, and Turnips were staged in large numbers. Mr. C. J. Waite took first for Parsnips with fine Student, Mr. Foster won for Carrots, while Mr. Townsend was first for Turnips. Onions were well staged, Mr. Foster and Mr. Waite winning in the respective classes for spring and autumn sown.

Mr. Sydenham offered special prizes in a number of classes. In that for four varieties of Peas Mr. T. Griffiths took first place with Autocrat, The Queen, Duke of Albany, and Prince of Wales. Mr. E. Walker was second, and Mr. Wm. Leath third. For two dishes of Onions, one Excelsior and one Tripoli, Mr. Wm. Leath was first, and Mr. W. Pope second. For two dishes of nine Tomatoes Mr. Leath was successful in winning, followed by Mr. Wilkins. Mr. Pope won for Cauliflowers and Beans, and Mr. Wilkins for Carrots.

LUNCHEON—PRESENTATION TO THE HON. SECRETARIES.

Shortly before two o'clock on Wednesday the visiting members of the Royal Horticultural Society, the Judges, the members of the Committee, and other officials assembled for lunch. Lord Kenyon, as President of the Shropshire Society, occupied the chair. The Royal

toasts having been duly honoured, the Chairman, in appropriate terms, proposed "The Royal Horticultural Society."

Sir TREVOR LAWRENCE, whose name was coupled with the toast, first mentioned with pleasure that Lord Kenyon had asked him to propose him as a member of the Royal Society. He proceeded that though the elements were to some extent in a conspiracy against the Show the previous day, they must agree that the efforts that had been made to overcome the disaster which took place had been crowned with success. The visits which the Royal Horticultural Society had made during the last two years to the provinces had been made with a view to drawing nearer the ties which bound the Society in London with the societies which existed all over the country. They felt that the parent Society should encourage horticulture all over the kingdom, and by visiting York, Shrewsbury, and other places they hoped to be able to do that. With regard to the Shrewsbury Show, he offered them his very sincere congratulations. (Applause.) He had heard a great deal about the splendour of the Shrewsbury Shows, but he did not believe till he saw it that they could have got together so fine an exhibition as they had that day. (Applause.) The Royal Horticultural Society which had had its ups and downs, was very near its centenary. If they looked back to the work it had done to advance horticulture in this kingdom—particularly in the introduction of new plants and in the instruction of gardeners—they must say it had done work of enduring excellence. (Applause.) He believed there was no part of the kingdom where they could walk more than a few yards without coming across plants which had been introduced through that Society. He acknowledged the support given them by the amateurs of the kingdom, and the gratuitous services of the best horticulturists throughout the length and breadth of the land, and took that opportunity of returning them grateful thanks. With her Majesty's permission, he added, they had established this year a Victoria medal, which they believed would be of considerable value. It might not perhaps be so valuable as the two medals given by Lord Kenyon that day, which he understood could not be reproduced, and which were of very beautiful design. He believed they were designed by a lady, as was also their Victoria medal. Having thanked the local Society for the kind reception they had given the Royal Society,

Sir TREVOR LAWRENCE, on behalf of the exhibitors at the Shrewsbury Show and friends, presented each of the Hon. Secretaries (Mr. W. W. Naunton and Mr. H. W. Adnitt) with a large and handsome silver and cut glass epergne. The epergnes bore inscriptions testifying that they were presented to Mr. W. W. Naunton and Mr. H. W. Adnitt by the exhibitors and friends attending the shows of the Shropshire Horticultural Society during the last twenty-two years in appreciation of their faithful services as Hon. Secretaries. Sir Trevor added that those who knew the trouble of arranging these exhibitions would feel that after twenty-two years' service not only should these epergnes be presented, but they should be full of sovereigns as well. (Applause.)

Messrs. ADNITT and NAUNTON both suitably responded, alluding to the pleasure with which they had worked for the Society for so many years, and thanking the Committee who had arranged the presentation, and the Hon. Treasurer (Mr. O. Thomas) and the Hon. Secretary (Mr. A. Outram) for the trouble they had taken in connection with it. Mr. Naunton mentioned that there had now been twenty-three shows, and neither he nor his colleague had ever been absent one hour.

Dean HOLE, addressing the company as his brethren and sisters in the most charming of all arts and the purest of human pleasures, said they must be few who could remember, as he did, the old times at the beginning of the Victorian era—the dismal trees in tubs and lanky plants, the stoves and greenhouses with long roofs and decaying rafters and tiny discoloured panes, and within and over all flies and red spiders and mealy bugs reigning in glory. (Laughter.) In one or two of their choicest collections there were half a dozen Orchids in their green and yellow melancholy, looking at one as the Roman gladiators looked at the Emperor when they presented the compliments of dying men. (Laughter.) The queen of flowers, like the Queen of England, was just stepping on the throne of her development in beauty. (Applause.) The gardener of sixty years ago was a superior sort of man, clever, shrewd, industrious, and honest as the day; but he was the biggest tyrant and the greatest autocrat that ever breathed. (Laughter.) The fact was that nobody knew anything about gardening, and they dared not contradict him. Worse than that, they were even proud of their ignorance, and they went and stopped the growth of his plants, and excited not only his compassion but his indignation. And when he found them out he had seen this—that man would stand in the presence of the proprietor and proprietress and their guests and let them have such a lecture as made their knees knock together. (Renewed laughter.) The gardener of the present day was, for his own and other people's happiness, a very different man, though there were some terrible exceptions. He was far more appreciated than ever he was. People had sympathy with his art; throughout England his power was recognised in the preparation of things pleasing to the eye and good for food. The time came, said the speaker, in conclusion, when other things failed, but the garden never failed them, and as they grew older it became more and more the consolation of their life. He hoped the show that day might induce others to interweave with their lives that golden thread of a love of horticulture, which added so much to its pure and permanent happiness. He then proposed "Success to the Shropshire Horticultural Society," to which the Mayor of Shrewsbury eloquently responded. The proceedings terminated with the "Health of the President," and Lord Kenyon, in replying, mentioned that his medal was designed by the Countess Feodore Gleichen.

COMMENTS ON THE SHREWSBURY SHOW.

I HAVE no intention whatever to intrude into the reporter's domain in connection with the products of this truly grand exhibition, but I do feel that there is space to make some general references that may merit notice. In your recent references to the Shropshire Society mention is made of the wonderful local benefits that have resulted from the shows, and the great surplus they have produced from time to time. With the recollection of that disaster to the great plant tent full upon us, a disaster so soon and so effectively recovered from by British pluck and activity, I can but think the Society would find an object worthy of its ambition in the erection on the site of the dismantled tent of a noble pavilion, which could be utilised in winter as a concert hall or musical promenade, being at the same time a sort of winter garden; and then might be available for the purposes of the flower show as a grand plant centre when needed. What fine effects could be obtained in such ease. If on either side there could run off a long broad covered promenade, which might also be utilised for show purposes, and from out of these could run tents for the remainder of the exhibits, thus bringing the entire show under one roof as it were, what a boon would it be, and how remarkably effective the result. Without exception the grandest of all provincial shows, that of Shrewsbury, loses so much by its wide distribution. Could the finest of the exhibits be more concentrated, how much would the show gain!

The decorative groups are there so beautiful and in design largely so original that they become veritable works of art, that are alone worth travelling long journeys to see. To numbers of gardeners a sight of these groups must come as revelations of what is possible with even comparatively ordinary exhibits. Arrangers now seem to find it difficult to excel themselves. But somehow, perhaps because they seem to belong to the exhibition ideas of a past age, the big specimen plants now attract little attention. If I were to ask, Are they worth preserving? I think the majority would answer No. For one visitor who stops to scrutinise them twenty stop to study the very beautiful groups, whether in or out of competition, with the greatest interest. Compared with what used to be seen in the palmy days of Baines and Cole the finest show plants of to-day seem poor. They may be good, but the old appreciation of them is gone. The public needs something more up-to-date now to satisfy its rather exacting requirements.

The introduction of the point system in awards, and their publication for the benefit of all concerned, if giving to the judges some additional trouble, yet cannot give much extra, seeing that in relation to the two great classes concerned it would not be possible to arrive at any correct conclusions except on a pointing basis. As an apostle of a just but hard to obtain regulation, very much indeed one crying in the wilderness, I could but think, seeing that in the dessert table class for instance the total ordinary prize money amounted to £38 17s., what a splendid opportunity was here offered to make the money prizes exactly commensurate with the actual point value of the exhibits. Mr. Goodacre comes with 105½ points, and besides the Veitch Memorial medal receives £17 12s. Mr. McIndoe is but one point behind, and he receives only 12 guineas. Had the whole of the cash inclusive of the Veitch Memorial £5 been pooled and then shared according to actual point merit the cash values would have been very different.

There is an impression that this method of prize-sharing would discourage competition. That is all nonsense. Rather it would tend to stimulate it. I should like to see the Shrewsbury executive, a body that can afford so well to lead, establishing just one class on this principle, and one of six vegetables, six outdoor fruits, and six bunches of garden flowers, all distinct, and in one group, would make a capital open one for a *corpus vile*. I noticed in the cottagers' tent a couple of wonderfully pretty objects of wild flowers on tripods shown as baskets that were disqualified, but which, if admitted, would have been well first. Baskets in the ordinary acceptation of the term they were not, but rather basket-trays. Could not the words "trays" or baskets be included in the conditions next year? As to the wild flower arrangements generally, they were the handsomest I have ever seen.—A. D.

STRAWBERRY LORD SUFFIELD.

I WAS much interested with the article on Strawberries by "A Young Scot" in the "Gardeners' Domain," in your issue of the 12th, but with the judgment pronounced on Lord Suffield by the writer I do not at all agree. In our light free soil I find it to be a first-class Strawberry in every respect. The size is all that could be desired, being quite as large as Royal Sovereign, and having very few small fruits. The colour is magnificent, bright red to the very tip. But one of the best features is firmness of flesh, and it therefore does not suffer from damp so readily as many other varieties. To be pronounced coarse by any grower astonishes me, but it may be the treatment of the plants that makes all the difference in quality.

Immediately the fruit is gathered we take a spade and run it up each side of the row to cut all runners, and also run the hoe through between the rows to clear off weeds. I find little more attention is needed until November, then we give them a heavy mulch of cow manure. About the beginning of April a dusting of soot is given to check slugs, straw is then laid in between the rows, and our plants never show any signs of suffering from drought.—R. K. PATERSON, *Linlithgow*.

Notes & Gleanings

Weather in London.—Rain has fallen at frequent intervals on almost every day of the past week, and at times the showers have been very heavy indeed. Tuesday was perhaps the worst day, as it rained almost without cessation from eight o'clock in the morning until after midday. Wednesday morning was cool and dry, rain falling heavily later.

—— Gardening Appointments.—Mr. Geo. Hollingworth, for some time gardener to Lord Tredegar, Tredegar Park, Newport, Mon., has been appointed in a similar capacity to Miss Talbot, Margam Park, Port Talbot, Glamorgan, in succession to Mr. J. Muir, who, we believe, has been made assistant agent. Mr. J. Bannerman has been appointed gardener to J. Lawrence, Esq., Oakland, Kenley, Surrey.

—— Shirley, Millbrook, and Freemantle Horticultural Society. The thirty-second annual Exhibition of the above Society was held on the 18th inst. in Whithedwood Park, Shirley, Southampton, kindly lent by W. Perkins, Esq., J.P. The entries were over 600, and the exhibits were staged in two large marquees. The quality of the exhibits was high, and the attendance a record one.

—— Outdoor Tomatoes.—When visiting the well-kept gardens of R. Wingfield, Esq, Ampthill House, Bedfordshire, I was much struck with the Tomatoes Mr. Empson had planted round the outside of the several houses in a southern aspect. The plants have made splendid growth and are carrying superb crops of fruit, especially good being Chiswick Red, Polegate, Hackwood Park, and last but not least Viceroy, a variety which should be much more largely grown. In one of the houses a plant of Stephanotis floribunda was one sheet of bloom.—J. H. L.

—— National Chrysanthemum Society.—A meeting of the General Committee of this Society was held on Monday evening last at Anderton's Hotel, Fleet Street, when Mr. T. W. Sanders occupied the chair. The minutes of the previous meeting having been read and confirmed, and various correspondence disposed of, it was announced by the Secretary that a vote of condolence had been forwarded to the family of the late Mr. Robert Owen, who it will be remembered died suddenly somewhat early in the year. Owing to this sad event a vacancy on the Floral Committee was created, and it was resolved that Mr. Gleeson be apppointed to fill the vacancy. The Secretary reported as to the annual outing last month, which was described as a successful and interesting excursion. Respecting the early show of Chrysanthemums, Dahlias, and Gladioli, to be held next month, it was resolved that medals of the Society be awarded to miscellaneous exhibits in the same way as at the other shows. Twenty-five new members were elected, and the Higham Hill and Walthamstow and the Barnstaple Societies were admitted in affiliation. There was a fair attendance of members for the time of year.

—— Portulacas at Reading.—The most brilliant display of these truly lovely flowering summer annuals I have ever seen is now open to view to anyone in Messrs. Sutton & Sons' London Road Nursery, Reading. Hitherto their show of these flowers has been restricted to an 18-inch margin, just within the nursery. This year they have a border 6 feet wide and some 120 feet long farther into the nursery, literally covered with single and double varieties, and when I saw the mass on a bright sunny day recently it presented the loveliest of floral beds that could anywhere be seen. Those who know Portulacas, know also what singularly beautiful hues are found in the flowers. No matter whether double or single, although I prefer the singles, there are the whites, creams, yellows, apricots, roses, carmines, magentas, scarlets, crimsons, and others not easy to describe. Then, too, it was always a traditional aspect of the raising of Portulacas that seed be sown in shallow pans in warmth under glass, the little plants later being pricked out into other pans to give growing room, then finally transplanted into the open ground. A maximum of trouble was thus given, and oftentimes with great damping off as a result. The Messrs. Sutton & Sons have practically killed that objectionable tradition, for they sow seed in shallow drills on a warm border at the end of April, keep the surface clean and moist. If the plants be too thick they may be somewhat thinned, but if sown with care no trouble on that head will be given, and very soon one of the loveliest conceivable of floral carpets will be found.—D.

—— Veitch's Main Crop Pea.—This splendid midseason Pea has undoubtedly come to stay, and should speedily secure a place in many gardens. The plant is of robust constitution, produces heavy crops of large pods, and only attains a height of 3 feet. In fact, it supplies what we have long required—viz., a main crop Pea of dwarf habit, possessing at the same time all the good qualities of the taller growing varieties. In addition, Veitch's Main Crop withstands drought better than any variety I am acquainted with, notwithstanding the fact that the present season has put it to a severe test.—H. D.

—— Shirley Gardeners' Association.—The monthly meeting was held at the Parish Room, Shirley, on Monday, the 16th inst., when Mr. B. Ladhams, F.R.H.S., presided. Mr. S. Heaton, F.R.H.S., lecturer for the Isle of Wight County Council, gave an address on the diseases of plants. The lecturer dealt with the subject under three headings—namely, parasitic and insect attacks; second, deleterious gases in the air or otherwise produced so as to affect nutrition; and third, a redundancy or deficiency of air, light, moisture, and warmth.

—— Big Gooseberry Competition.—A novel competition, which may be regarded as an appropriate incident in this the "Big Gooseberry" season, was held last week by Messrs. Stuart & Mein, seed merchants and nurserymen, Kelso, when they awarded a handsome gold medal to the one of their customers who sent them the heaviest and biggest Gooseberry. The firm, who make a speciality of Gooseberries, invited their customers to forward the largest berries they had, a large and highly successful exhibition being the result. The champion Gooseberry was a specimen of Ringer, a deep olive-green skinned variety, weighing 22 dwt. The grower was Mr. T. E. Middleton, Radcliffe-on-Trent. Numerous specimens, weighing 17 to 20 dwt., came from the well-known prize Gooseberry growers' districts in Lancashire and Cheshire, several from Yorkshire, Nottinghamshire, Staffordshire, and one from Macduff in the north of Scotland. The heaviest berries were Ringer, Bobby, London, Lord Derby, and Queen of Trumps. Growers complain that owing to the dryness of the season berries in size and quality are hardly up to the average this year.—("Kelso Mail.")

—— Renovating Herbaceous Beds.—Many plants have such a tendency to increase by suckers from the roots and form dense mats or clumps, that the soil is often overtaxed to supply sufficient nourishment. In most cases it is best to dig up the beds, divide and replant them, selecting the younger and healthy divisions. The writer has in mind, in this connection, instances of beds of Achillea millefolium rubrum, Aster tataricus, Helianthus Maximiliani and mollis. In some cases of the larger growing kinds it was found satisfactory, says "Meehan's Monthly," to hoe out the plants in 10 to 12 inch paths through the bed, early in the summer. This relieves the plants, and the growth generally will fill out in a short time, so that the mass effect will be undisturbed. The Sempervivum, or House-leek, is a frequent example of this overcrowding. Each mature plant produces several offsets on comparatively short stems each season. As these offsets mature and develop their offsets, all parts being thick and fleshy, there is but one natural consequence. Replanting of these may be done at any time, using large or small shoots. Although having little root, the succulent leaves and stems make the transplanting perfectly sure. Thinning them out will, in most cases, answer as well as taking up the bed.

—— Securing Fruit.—I read with much interest your article on "Fruit Growing and Selling," page 164, but, to my mind, such a season as the present, of far greater importance would it be to tell your readers how to secure a crop of fruit. Personally, I am only an amateur with a comparatively small walled-in town garden, but I have within the past few months been about pretty much, not only in Ireland, but in England, and my position of almost fruitless Pears, Plums, Cherries, Nectarines, and Apricots in the open air is almost the rule wherever I went in some of the best managed gardens in Great Britain. I and many others would therefore thank you or any of your numerous readers and correspondents who could give any practical hints for securing better crops. It is not the soil, for other years my trees had heavy crops. It is not the varieties, for I have about twenty varieties of Pears, and a dozen of Plums, equally deficient, and so of Cherries. I can hardly admit it is mismanagement, for I have had good crops other years, as already stated, but I am always glad to learn. I cannot say precisely what the immediate cause of failure has been this year, but I think here there have been two main causes, if not more. 1, Root drought and imperfect nutrition last year; and 2, an unfortunate spell of frost at night, just as most of the aforesaid fruit trees were in blossom, with the result of destruction of the organs of fructification.—W. J. Murphy, *Clonmel*.

— Carriage of Produce.—Speaking at the annual meeting of the Great Eastern Railway Company, Colonel Makins, deputy chairman, said, in the course of the proceedings, that the box system for placing consumers in direct communication with the small producers of fruit, vegetables, flowers, poultry, eggs, and minor products of the farm generally, was succeeding very well. The amount of money it yields directly is comparatively small, not exceeding at present £2000; but it has the great advantage of attracting from London direct to the pockets of the small farmers and market gardeners, allotment holders, and cottagers in East Anglia a considerable sum of money. The average value of the contents of each box is about 7s. 6d., and as the number of boxes carried during the year 1896 was 60,034, the aggregate value of the produce sent to the metropolis under the box system was £22,500. During the first half of the current year the number of boxes of produce sent over the system was 55,159.

— Flora of Santa Clara.—The flora of this province of Cuba was recently dealt with in a paper contributed by Mr. Robert Combs to a recent meeting of the St. Louis Academy of Science. The author described the results of his explorations, extending from the commencement of the rainy season of one year until the close of the dry season the following spring, the territory covered lying between the entrance of the bay of Cienfugos, on the south coast of Cuba, up the bay and the river Damuji to Rodas, and extending back from the river to Yaguaramos, and almost to the Cienega de Zapato, a region including nearly all kinds of soil and condition found upon the island, except those of the mountain regions and the mud swamps. A brief statement was made concerning the origin of the Cuban flora and its affinities with that of continental Central America, rather than the geographically nearer Florida region. The paper, says a contemporary, comprised a full catalogue of the collections made, which had been determined at the herbarium of Harvard University, and of which several sets had been distributed to the larger herbaria.

— Spraying Potatoes.—During the past fortnight many fields of Potatoes have shown unmistakeable signs of blight, by the spotting of the leaves and the peculiar odour always present when attacked by this insidious disease. There has seldom been a year when timely warning was so strikingly given as the present, the earlier sorts in gardens having been severely hit as early as the 1st July; and although the later varieties remained perfectly healthy for several weeks after, it was hardly to be expected but that they also would be attacked when they reached the same stage. That was the time to spray, as prevention is better than cure; and many fields have been saved by growers having profited by this timely warning and sprayed extensively, large growers using the horse machine, and still keep going on. It is not too late to save a considerable portion of the crop by careful spraying on those fields where the disease has not caught hold of the stem, although it may be perfectly distinct on the foliage. In Yorkshire and the great Potato growing districts of the south-east coast of Scotland—about Dunbar, notably—spraying has been largely carried out—in face of the adverse decision of the Highland Society; and many fields, strongly touched, have been brought back to a healthy condition.—("Irish Farmers' Gazette.")

— Fertilisers and Feeding-stuffs Act, 1893.—The Board of Agriculture has issued a leaflet giving publicity to the provisions of the Fertilisers and Feeding-stuffs Act, which came into force on and after January 1st, 1894. The provisions of the Act, which applies to wholesale as well as retail sales, may be classified as follows:—1, Provisions relating to the warranty to be implied on the sale of a fertiliser or feeding-stuff; 2, Provisions relating to taking samples and obtaining analyses; and 3, Provisions relating to offences, penalties, and legal proceedings. *Provisions relating to the Warranty to be implied on the Sale of a Fertiliser or Feeding-stuff.*—Every person who sells a fertiliser —*i.e.*, any article sold as a fertiliser of the soil—which has been manufactured or subjected to any artificial process in the United Kingdom, or imported from abroad, is required to give to the purchaser an invoice stating the name of the fertiliser, and whether it is artificially compounded or not, and what is, at least, the percentage of the nitrogen, phosphates soluble and insoluble—*i.e.*, in water—and potash, if any contained in the fertiliser, and this invoice is to have effect as a warranty by the seller of the statements contained therein. This provision does not apply to a sale where the whole amount sold at the same time weighs less than half a hundredweight. The fuller details are comprised in a leaflet, to be had, free of charge, from the Secretary of the Board of Agriculture, 4, Whitehall Place, S.W.

— Exacum macranthum.—Mr. W. Watson, in the "Garden and Forest," says, "For many years this beautiful tropical Gentianad has been successfully cultivated at Kew, but it has not yet become a popular garden plant, although several market growers near London have essayed its cultivation. It has numerous erect stems, from 1 to 2 feet high, clothed with rich green elliptic-lanceolate leaves 3 inches long and bearing terminal many-flowered corymbs of rotate deep blue flowers nearly 2 inches across. It is a biennial and requires the conditions of an intermediate house. This year the plants at Kew are exceptionally vigorous, and this is due to their having been planted out in beds of loam in the newly erected Mexican house. I have also seen beautiful pot specimens grown along with Begonias. The plant is a native of Ceylon, where it is said to be common up to 5000 feet elevation. It is the only one of the twenty species known that possesses any merit as a garden plant."

— Wireworms.—The Zoologist of the Royal Agricultural Society has been engaged in conducting a series of "pot experiments" to ascertain the efficacy of "mustard dross" as an antidote to wireworms, and has arrived at the following general conclusions:—(1) The dross is obnoxious to the wireworms, and fatal to them if they remain in it; (2) sown with the seed it keeps off the worm in the earliest and most vulnerable stage of the plant's growth; (3) if used too plentifully it delays the germination of the seed, but there would be no likelihood of this with the quantities which the cultivator would probably use; (4) experiments on the small scale do not indicate that it would be of any use as a top-dressing when the crop is up, as it has a burning effect on the plants themselves; (5) it seems eminently likely to be useful, if drilled with the seed, in cases where wireworm is to be anticipated, as after grass or Clover in land much subject to wireworm; (6) it is very light, and would have to be mixed with ashes or drilled on a calm day; (7) quantities equivalent to 2½ cwt. per acre have given distinctly beneficial results in the pot experiments.

— American Peaches.—The Maryland Peach crop, especially that on the eastern shore, was seriously injured by a frost on the 20th of April, which killed a large portion of the fruit buds in the tidewater section of the State. But it is true also that the curculio has done an uncommon amount of injury, as the great number of specked Peaches in the New York market indicates. Peach growers have never felt the necessity of combating the curculio, as Plum growers are compelled to do. And certainly they have not yet taken ordinary precautions against this danger. Last year, says an American contemporary, the Peach crop was unusually large, and the overloaded trees produced much small and inferior fruit, which was allowed to remain in the orchard. This gave the curculio an unusual opportunity, and Professor W. G. Johnson, the State entomologist, suggested to the growers last autumn that it would be wise policy to destroy as many of the small Peaches as possible, so as to prevent the larvæ of the curculio from entering the ground for pupation. There is no doubt that if this had been done the crop would have been less seriously injured. The fact that Professor Johnson predicted this danger ought to lead Peach growers to listen more carefully to expert counsel in the future.

— A Beautiful Cemetery.—The pretty little cemetery at Harton is now looking its best, and every evening during the past month the grounds have been crowded with visitors, who have not been backward in expressing their appreciation and admiration of the happy results achieved by the superintendent, Mr. B. Cowan. It is barely seven years since the cemetery was opened, and the transformation brought about is really wonderful. During that short space of time the trees have grown prodigiously. There is not a weed to be seen anywhere, the paths are the picture of tidiness, and the whole place gives evidence of the amount of care bestowed upon its welfare. The collection of alpine and herbaceous plants is considered by connoisseurs to be one of the best in the district, while the display of East Lothian Stocks is very fine. The carpet bedding has never looked better; the summer bedding is beautiful; and the likeness of her Majesty designed on a carpet bed is a strong feature of the place. It is an artistic combination of hardy dwarf plants, shaded to show a very pleasing contour of the face; it is easily perceptible, and has attracted during the summer thousands of admirers. To the ordinary visitor the place has more the appearance of a gentleman's private park in design, the trees being so arranged round the burial plots as to shut out the sight of the graves. Mr. Cowan's arrangements, from an educational point of view, must be of immense advantage, for every tree, plant, shrub, and flower is correctly labelled in English and Latin.—("Newcastle Daily Chronicle.")

HARDY FLOWER NOTES.

Autumn is with us as we write—a time of grain and fruit and flowers—Dame Nature's season of bounty. In the fields the ripe corn is falling before the reaper. In the orchards the Apples wax ruddy in the autumn sun. In the gardens we rejoice in the colouring of the showy flowers of the time. We need this bright colouring now. The leaves have put off the bright green of their youth, and have assumed a deeper tint; a more sober hue. Many of our flowers have gone, but welcome successors have come. We miss the flowers which, from their supporting arch behind the house, reminded us of the passage in "The Garden That I Love," in which the Poet Laureate tells us:—

> "Those clustering Roses fancy hath baptised
> Maids-of-the-Village; and adown they hang,
> Like to a waterfall you see far off,
> That foams, but moves not."

Its "daily litter of fallen petals" has ceased, and we have lost its beauty for the year. Other and more frequent-flowering Roses we have still, but the "Maids-of-the-Village" will smile upon the year no more. The Ayrshire Roses on the house front are over, too, but from among their leaves the deep purple flowers of Jackman's Clematis present themselves—scentless, but beautiful companions. The Delphiniums are over for the time, but the Phloxes delight us with their bright flowers. Some of the Sea Hollies are past their best, but Eryngium planum stands conspicuous in the border pleasing all with its blue-tinted globes and stems.

The Orange Lilies no longer show us that the perennial Sunflowers cannot rival the depth of their colouring, but the Tiger Lilies proclaim a combination the Helianthuses do not possess. Dahlias are aglow; needing all the rich variety shown by the autumnal annuals to counterbalance the effect of their formal globes or pointed petals. Besides the Tiger Lilies there are not many other bulbous plants yet in bloom. Chief among them is the Gladiolus, although, strictly speaking, its root-stock is not a bulb but a corm. Is there any flower more beautiful in its season? Does any other flower owe more to the hybridiser's art? As we look upon those stately spikes with their noble flowers of the most exquisite colours, shades, and markings we are more than pleased—are delighted—with the combination of beauties they give.

Veronicas with flowers of blue, purple, white or pink raise their clustered spires among the other border flowers, and the Sweet Peas—dwarfer than usual this year—please us with their sweet-odoured bright or soft tinted blooms. Tall Globe Thistles lure to their pearly-white balls the honey and humble bee.

Yet with all this variety there is a warning signal upraised. It comes from the earlier Starworts or perennial Asters whose first blooms give us a feeling of regret. They tell us of the wane of the days, though even now the little Anomatheca or Lapeyrousia cruenta displays its carmine flowers with their blood red spots not far away, as if telling us to beware of dwelling too long upon those premonitors of decay.

These Asters have some allies less known and comparatively little seen. Some of these are almost or quite worthless in the garden, and others have merits which give them value. Among the latter is Boltonia asteroides of L'Heritier, a plant of rather tall, but not ungainly, growth. Works of reference tell us that it was introduced in 1758, and that it comes from North America—a vague localisation, which, unfortunately, I cannot make more definite. In this light soil Boltonia asteroides grows about 4½ feet high, but this height is exceeded in some gardens. I cannot say that I regret this shortcoming in height, as it is unaccompanied by any loss of beauty. Unless "cabin'd, cribb'd, confined" by undue tying this Boltonia is a rather elegant plant. The entire, lanceolate leaves are of a pretty shade of green, and the plant possesses a light and informal appearance. This is heightened by the character of the flowers, which are what is called "flesh-coloured," and are freely produced in a panicle.

It is one of the numerous Daisy-like autumn flowers so plentiful later on, but not as yet so numerous as to make it unwelcome. B. asteroides is readily increased by division in spring or autumn, and will grow well in almost any soil or position. It appears to take kindly to a little shade, and its flowering is thus prolonged.

Among the Bellflowers now in bloom are two of the Symphyandras. These are allied to the Campanulas, but differ from the true Bellflowers by their anthers being connate. S. pendula, which grows freely on the rockwork here, is a troublesome plant with many. It thrives well with a little shade, and, although not showy, is generally appreciated. It is a true perennial in my garden. Another species grown for some years is S. Hoffmanni, a native of Bosnia. So far as my observation goes this is of biennial habit, but it produces and ripens seed so freely that there is never any want of self-sown seedlings to keep up the succession. I have met with it under the name of S. Kaufmanni, but this is an obvious error, and the name of Hofmanni is that recognised at Kew. Like S. pendula, it is not a showy plant. It is of erect habit, and here only grows about 1 foot high. It forms a neat, bushy plant, producing a considerable number of drooping, white, rather funnel-shaped flowers. It can be raised from seed, which is obtainable from some seedsmen.

On former occasions I have referred to Olearia stellulata, the Starry Daisy Bush. Less seldom seen, although scarcely so pretty, is O. Haasti, which forms a desirable dwarf shrub for the rock-garden or border. Haast's Daisy Bush comes into bloom later than the Starry one, and looks very different with its glossy leaves with whitish under surfaces, and its smaller flowers. It is hardier than O. stellulata, and forms a very neat bush, freely covered in the end of July and beginning of August with cymes of white flowers. It is not difficult to grow in light soil and with a south or west exposure, and is easily propagated from cuttings.

It is raining heavily as these lines are written, and the brilliance of the flowers is dimmed by the rain and chastened by the clouded skies. Yet these cannot deprive us of the pleasures of the flowers. The Montbretias, with their crimson or golden flowers, seem as oblivious of the unpropitious elements. The Water Lilies on the pool are nearly all closed, but a flower of Nymphæa carnea is open far enough to show its exquisite colouring. With the flowers mentioned before, and with others which are in bloom, we can content ourselves till the dark clouds roll away and the sun comes out to give fresh beauty to the flowers and new pleasure to their owner.—S. Arnott.

EXHIBITING GRAPES—The SPLICING SYSTEM.

Various methods are resorted to in growing Grapes, in these days of keen rivalry, with the object of producing the best and most imposing results. There is the extension system, the spur system, the grafting system, the express system, but there is nothing like the splicing system for producing "big" bunches quickly. Talk about the decadence of gardening, your "Traveller" is quite behind the times. We have in these days youths so ardent that they can do in an hour or two what the "old" gardeners took years to accomplish—*i.e.*, get a first prize card attached to their exhibits at a great national show, but only by recourse to this system. This feat was accomplished last week at the Crystal Palace, and in a manner that surpassed most previous efforts. The artist, however, unlike most artists who accomplish something out of the ordinary way, did not seem anxious to receive credit for his skill. He not only made no complaint about his work being imperfectly displayed, but his modesty was so great as to impel him to hide it. Its true character had to be "dragged out," so to say, and so far as can be learned the honour of the discovery rests with Mr. James Hudson of Gunnersbury.

Mr. Hudson is a very observant man, and if he find anything unusual he generally also finds a way of getting to the bottom of it. During a quiet stroll round, and with more time at his disposal than the judges had, he observed a barrel-shaped bunch of Grapes in the Palace Show. This striking him as abnormal, his curiosity was so far incited as to tempt him to look behind the curtain. This was formed of a little wadding for the preservation of the stem of the bunch, and a covering of tissue paper for the sake of appearance.

Drawing aside the curtain with a tenderness that may be imagined, he found the stem well secured to the stand—a bit of thoroughly good workmanship in that respect. There was no loose looping about it, such as a coil or two of tape, but it was more after the binding of the handle of a cricket bat or a fractured limb. It almost suggested, in fact, that the operator might have been attending ambulance classes conducted under the auspices of some technical education committee.

But the bandages did not look quite right to the inspector, and he seems to have fingered them till he found an "end." Pursuing his investigations he discovered another, and still another. These proved to be the stalk ends of "shoulders," which in the course of nature had issued from other bunches of Grapes, and hence, from the operator's point of view, had grown in the wrong place. A transference was therefore effected, with the result that the bunches on the Vines were made smaller, while those off them, and for the "boards" were made larger. One little addition appeared to suffice for one bunch, but another needed two, and a third even three, extra shoulders to give it the desired size. The judges, upright honourable men, thinking no evil, and pressed for time, attached to the collection which contained these imposing Grapes the "first prize."

So well had the splicing been accomplished that even the exhibitor of the collection did not discover what his young man had done till the mechanism was pointed out to him in the show the next morning. He was naturally much annoyed. If all had gone well with the Grapes he would, no doubt, have found out the handiwork on their arrival home, when, it may be expected, he would have returned the prize, which, under the circumstances, he did not receive.

Such instances as this are rare. It is a case of zeal overcoming discretion, and it is hoped that the ardent youth will have gained a lesson that will deter him from again indulging in the splicing system for the quick production of barrelled shaped bunches of prize Grapes.—On-looker.

SEASONABLE HINTS ON FLORISTS' FLOWERS.

As the summer draws towards its close, and the shortening days tell us that autumn is upon us, there are many things which call for the gardener's thought and care, no matter what may be the special portion of horticulture to which he directs his attention. Some are now thinking about bulbs—what blanks have been made, and what bulbs will be required to make up the deficiency; others are bent upon propagating, and are cutting their "Geraniums" and other plants, so as to have them ready for the ensuing spring; but perhaps no one is more deeply interested than the grower of what are popularly known as florists' flowers, nor does it at all follow that the directions for one season are applicable to another. The weather changes so much in our fickle climate, that the conditions of the plants and the operations necessary for keeping them in good health vary from year to year.

We have no doubt had a very strange season, the cold drying winds of May and the drought time which we have experienced have told upon some plants, but as the flowers of which I write are mostly grown under protection many of these adverse circumstances can be guarded against; the plants can be protected from rough winds and drenching rains, and without being coddled can be preserved from evil influences. As in duty bound, whether as regards alphabetical order or the charms it exercises over those who grow it, I take first

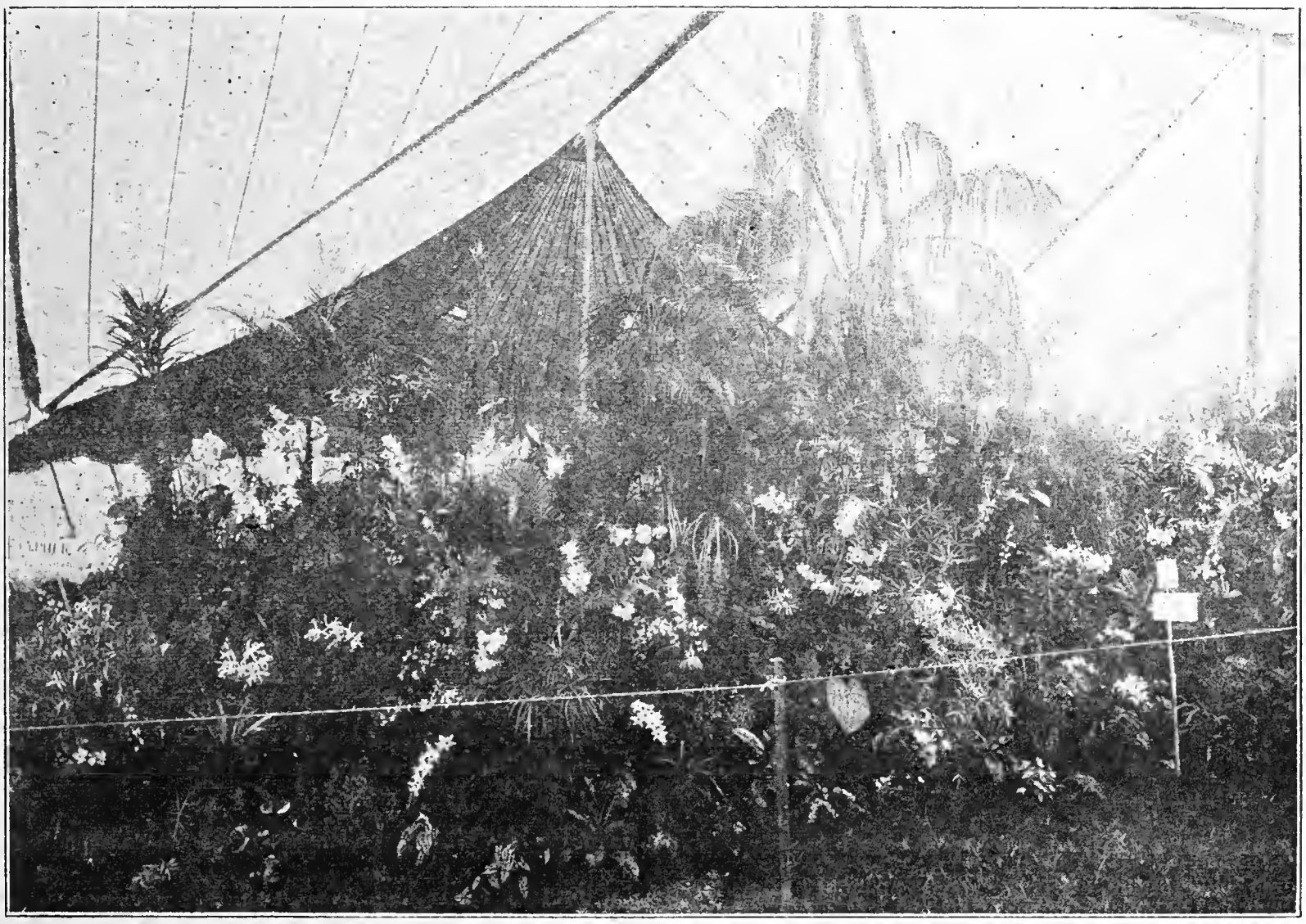

FIG. 27.—MR. J. CYPHER'S GROUP OF PLANTS. (*See page* 188.)

THE AURICULA.

I think, upon the whole, the summer has been favourable for these plants; it is true we have had some hot days, but the hot weather has not been continuous, and consequently I think the plants, at least as far as my own are concerned, look very well, are free from aphis, and few of them have perished during the summer, as they often do. It will be necessary soon to see that they are placed in their winter quarters; some have houses, other frames, and others pits in which to keep them. Wherever they are placed care must be taken that the lights are sound and free from drip. The Auricula will stand a good deal even of frost, provided the soil is dry, and nothing is so injurious to them as a drip, and, of course, if frost enters the place where they are housed it lays hold much sooner of a sodden soil.

The plants ought now to be carefully looked over, all dead foliage removed, and the plants brushed with a camel's-hair pencil if there be any signs of aphis; but when they are housed in their winter quarters it would be well to give them fumigations, so as to kill any that might be left. I do not think we need be so much afraid of the woolly aphis, which gave us such a scare a few years ago; in fact, I take little notice of it now, except it be round the collar of the plant, whence I am careful to remove it. I used at one time to take it away from the fleshy roots by turning the pot upside down on the hand; but this I have long since ceased to do, and I do not find that the plants show any sickly appearance. It used to be said that they turned their heads on one side, as if they were suffering; but I do not see this even in plants which are very full of it. I have, therefore, of late contented myself with getting as free of it as I can at the potting time, and not troubling myself afterwards.

The Auricula in one respect is unique; while other florists' flowers increase their numbers of varieties yearly, it is only now and then that an Auricula comes into commerce of sufficient merit to replace the older kinds, and so if one is asked, "What variety shall I add to my collection?" it is very difficult to name any. Thus if we take green-edged, perhaps the following may be regarded the best grown, bearing in mind that it is always a very limited class:—Prince of Greens, Rev. F. D. Horner, and Colonel Taylor, to which perhaps may be added Abbé Lizst, raised by Mr. James Douglas, although this is at present expensive. Monarch I thought would have taken a leading position, but it has deteriorated since it was exhibited as a seedling. Two of these are poor growers, Prince of Greens and Colonel Taylor, the most useful of the section being undoubtedly Rev. F. D. Horner. When we come to grey-edges there is a greater choice, and although George Lightbody was raised many years ago by Mr. Headly of Cambridge, there is not one variety raised since which can compare with it. Richard Headly, Lancashire's Hero, George Rudd, Conservative, and Traill's Beauty (sometimes), are all good and useful flowers. Then in white edges we have Acme, Heep's Smiling Beauty, Mrs. Dodwell, and John Simonite, the last scarce and difficult to grow. Selfs.—A more prolific class than any other, and if seed be sown a greater number of seedlings may be selfs, although the seed may have been saved from edged flowers, yet after all very few first-rate kinds have been added of late years; Heroine, Mrs. Potts, Black Bess, and Sapphire being, however, all first-rate varieties. Of the older ones Lord of Lorne, C. J. Perry, Mrs. Douglas, and Mrs. Sturrock are serviceable both for exhibition and stage.

This will now be a good time to add to the collection any varieties that may be desired, as they need not be sent in pots, but if turned out and put into paper envelopes without disturbing the soil and potted on arrival, will have time to recover themselves before the winter begins. I have said nothing about the Alpine section because I do not grow them. There are some very handsome flowers amongst them, but somehow or other I never took to them, and "I am too old a dog to learn new tricks." And so with regard to Fancies, I was very much taken with some that I saw exhibited at the Drill Hall last spring, and almost decided to have some, but on thinking it over my conservative instincts were too strong,

and I came to the conclusion it was better to continue the old ways and not have anything to do with them, however varied and pretty they might be.

Carnations and Picotees.

The exertions of Mr. Martin R. Smith have led to a great change in the cultivation of these plants. The success of his cross fertilisation has been very manifest. Though it has somewhat tended to lessen the estimation in which the old florist varieties were held, they have never lost their charm to me, although I quite agree that as far as the decoration of the garden is concerned these new and varied forms with their wonderful shades of colouring are more effective. The autumn of 1896 was an unfavourable one for them, and it was difficult to obtain good layers. Many, perhaps, are independent of these and raise their seedlings year by year, while others have probably by this time completed their layering. As soon as they are rooted they should be potted off, if possible, singly in small pots, so as to be ready to put in the frames for the winter, for I do not advocate the plan of planting them out in the autumn. It may succeed, but a severe or very wet winter is likely to do them much injury. and I would always advise they should be kept under cover for the winter. One of the most remarkable things about the new race is the number of yellow varieties which are produced. Formerly we had only two or three worth growing, but now with every collection of seedlings we get some. Since the rains which we have lately had I find the grass much better fitted for layering ; it was very harsh and wiry before, but it is now soft and pliable, and I do not think any time has been lost by putting the operation off.

Gladiolus.

There is not much to be done now beyond securing the blooms and enjoying their beauty, but those who wish to grow from seeds should take the opportunity of cross fertilising the blooms, selecting for that purpose the best flowers that they have, but also those that form the greatest contrast. There is no flower more easy to hybridise, and I may add there is no flower the humble bee delights more in rolling in, therefore a careful hybridiser will strive to be beforehand with him. At the same time he must remember that some of the finest flowers that we have have come from natural and not artificial fertilisation. On the whole I think the season has been a favourable one for these flowers.

Pansies.

The droughty seasons which we have lately experienced in the south have not been favourable to the growth of these plants, for they much delight in moisture and cloudy skies. The few that I can grow are in pots ; the plants have been cut down, and have now to be divided and placed in small pots for the winter. I know that it will be said this is a lazy plan, and I plead guilty to the charge ; but then I do not grow for exhibition, nor can I house a large number, so that this is sufficient for my wants.

Roses.

I think that it is a very good plan, instead of leaving all the pruning for the spring, to cut out those growths which have flowered, and from which nothing is to be expected next year, as it gives freer scope for light and air, and the plants are not so liable to be injured by high winds, and for this reason very long shoots ought to be partially shortened and have a stake put to them.—D., *Deal.*

IXORA NOTES.

Few stove plants are more valuable both for exhibition and decorative purposes than Ixoras. As large specimens with rich deep green foliage and noble heads of flowers they have an imposing effect, while as smaller plants with from one to half a dozen trusses few plants can excel them during their period of flowering. Ixoras are purely tropical plants, and the imported species are almost exclusively from tropical Asia. An Asiatic name has, therefore, been appropriately given to the genus, Ixora being a Malabar idol, to which the flowers of Ixora stricta (as it was originally named, but now known as coccinea) are offered by the natives.

Ixoras can be easily propagated by cuttings. Take a short-jointed half-ripened cutting about 6 inches long and insert it firmly in a small thumb pot in a compost of peat, leaf soil, a little fibrous loam, and a good admixture of silver sand. Plunge the cutting pots in bottom heat in a moist well-heated stove or propagating house, and not many days will elapse before roots are emitted. When these reach the sides of the pots transfer them to pots a little larger, and eventually into 5-inch pots, using the same sort of soil as described for the cuttings. Healthy plants in 5-inch pots are of great use for table decoration while medium-sized plants with six or seven trusses of flowers on them are very valuable for many purposes of decoration. The next shift should be into a 6-inch pot. Future shifts must be at the discretion of the grower, according to what size plants are required, but large shifts should never be given, which often result in sour soil and unhealthy plants. A little liquid manure may be given occasionally when the plants are established. Do not give the plants too much water in the winter time, and avoid drip from the roof, which is fatal to good foliage. During the growing season afford plenty of heat and syringe twice a day, the pots if possible being half plunged in a hotbed. Any shoots threatening to steal strength from the others should also be stopped to give two or three shoots instead of one. If fly, or thrips, or mealy bug appear there must be smoking and sponging at once.

This treatment should continue, with a little shade from very bright sun, until September. The pots should then be raised out of the hotbed, the plants placed near the glass and in full light ; and though syringing may be resorted to at times, it should gradually be discontinued, and water at the roots also lessened, but never so as to cause the plants to flag. The object is to ripen the shoots formed. During October and November the water must be lessened, and the temperature may fall then and on to February to 60° and 55°, the roots just kept healthy and no more, and care taken of the leaves by syringing and sponging on a fine bright day. The rest is thus given at the dull season, as the flowers are much more pale when produced in winter. About March, or earlier, the plants may be moved into a higher temperature by degrees, and at first the pots partially and ultimately three-parts plunged in a sweet hotbed, with openings below the pot to secure drainage. The temperature may be gradually raised to 75° and 80° with air, and of course waterings at the root will be more needed as the temperature rises, and the syringe must be pretty well used before the bloom trusses show. Then a drier atmosphere should be given and the plants be lifted out of the bed as the flowers open and kept cooler and drier to preserve the bloom.

Ixoras cannot be grown in a low temperature. On this point a good authority has written as follows :—"I would particularly allude to this high temperature and moist atmosphere in summer as essential to success, as I have had several complaints that the Ixoras cannot be managed in a warm greenhouse temperature—about 50° in winter, and very airy in summer. It is waste of time attempting such plants under such circumstances. I have given them up for a time because I have not enough heat for them. Those who can command a rather dry atmosphere of from 55° to 65° in winter and a fermenting bed in spring and summer, securing a bottom heat of from 80° to 85° and 90°, and a top temperature of from 70° to 85°, and 5° to 10° more in sunshine, with abundance of atmospheric moisture, will no doubt succeed with these lovely plants, which are well deserving all such attention."—L.

ISLE OF WIGHT.

The monthly meeting of the Isle of Wight Horticultural Improvement Association was held at Ventnor on August 7th. Dr. Groves presided over a fair attendance of members and friends. Mr. C. Orchard, F.R.H.S., read an excellent paper on "The Progress of Horticulture in England During her Majesty's Reign." The subsequent discussion proved interesting and profitable. Mr. W. W. Sheath, Macrocarpa Gardens, Ventnor, was awarded the Association certificate for an excellent group of miscellaneous plants. Ten new members were enrolled.

Shanklin.

The eighteenth annual summer Show of the Shanklin Horticultural Society was held by permission of Mr. Spartali in the beautiful grounds of Rylstone, which overlook the far-famed Shanklin Chine, on August 18th. The quantity and quality of exhibits exceeded and surpassed those of any previous year. The meteorological conditions were favourable, and the attendance was very large. This is unquestionably the largest and best Show in the Garden Isle. The Judges had a difficult task to perform, the competition being very keen. Dr. Dobbs judged the honey, and expressed a wish that it were possible to give every exhibitor a prize, as all were really worthy of something. There was an excellent show of Lord Suffield Apples. The Shanklin Society again won the sash and counties' championship, offered by Messrs. Cannell, for an exhibit of fruit, flowers, and vegetables.

Mr. W. H. Geddes secured the I.W. Horticultural Improvement Association certificate for a good collection of Sweet Peas. The floral decorations were very fine. The principal exhibitors at the Show were Messrs. F. A. Hill, S. Banks, A. Richards, C. H. Snook, W. A. Kent, F. Bastiani, B. Roach, G. H. Kent, and G. Witty.

Niton.

The third annual summer Show of the Niton Society was held on August 18th, in the charming grounds of The Orchard, by permission of Lady Mary Gordon. Many of the exhibits staged showed high-class culture. The I.W. Horticultural Improvement Association certificate was awarded to Mr. H. Jacobs for a collection of vegetables. The principal exhibitors were Messrs. G. W. Creeth, W. Cotton, H. Jacobs, A. Humber, F. Niblett, A. Salter, C. Long, W. Hayles, and J. Niblett.

Freshwater.

This show was held on August 18th in Farringford Park by permission of Lord Tennyson. The exhibits were not so numerous as in previous years ; but all round the standard of excellence had improved, and with care in staging and labelling the Show could be made still more interesting and profitable to those attending. The I.W. Horticultural Improvement Association's certificate was awarded Mr. A. W. Kime, F.R.H.S., gardener to Colonel Crozier, J.P., Westhill, Freshwater, for three bunches of Grapes. Amongst the principal exhibitors were Messrs. J. Martin, F. Banham, B. Grist, W. Morey, J. Covey, H. Fry, G. Wheeler, J. Collis, and W. Stephens. The bee tent proved a great acquisition to the Show, and much interest was taken in the lectures and practical demonstrations conducted by the Rev. Mr. Medlicott, Swanmore Vicarage, Bishop's Waltham, and his assistants. It is certainly greatly to be regretted that in a small place like the Isle of Wight there should be three shows held on the same day. It is to be hoped that next year this will be avoided. - S. H.

ROYAL HORTICULTURAL SOCIETY.

DRILL HALL.—AUGUST 24TH.

THE meeting at the Drill Hall on the above date was a very small one indeed, neither the floral, Orchid, nor the fruit section being largely represented. The superb spike of Grammatophyllum from Burford Lodge attracted almost as much attention as the remainder of the exhibits put together.

FRUIT COMMITTEE.—Present: P. Crowley, Esq. (in the chair); with Messrs. G. Bunyard, J. H. Veitch, A. F. Barron, W. Pope, A. H. Pearson, A. Dean, G. Miles, H. Balderson, G. Norman, R. Fife, and F. Q. Lane.

Mr. O. Thomas, Royal Gardens, Frogmore, staged a handsome new seedling Melon, which resulted from a cross between Duchess and Beechwood. It was named Frogmore Scarlet. It resembles the old Beechwood somewhat closely. Mr. Corbett, gardener to the Rev. Marquis of Normanby, Mulgrave Castle, staged Tomatoes Mulgrave Castle and Royal Sovereign. Mr. J. McIndoe, gardener to Sir J. W. Pease, Hutton Hall, Guisborough, sent Japanese Plum Burbank; and Mr. W. Kemp, Barnes, Cucumber Covent Garden Favourite.

Upwards of two dozen fruits of Melon Middlesex Hero were exhibited by Mr. G. Wythes, gardener to Earl Percy, Syon House, Brentford, who also showed a new variety named Thames Bank. Mr. J. Robinson, gardener to W. Lawrence, Esq., Elsfield House, Hollingbourne, arranged a collection of vegetables, comprising highly creditable examples of Onions, Savoys, Carrots, Tomatoes, Potatoes, Beet, Cabbages and Beans (silver Banksian medal).

Mr. A. H. Rickwood, gardener to the Dowager Lady Freake, Fulwell Park, was represented by a good collection of fruits. Amongst others were noticed Peaches Goshawk, Grosse Mignonne, Early Louise, Barrington, Dr. Hogg, and Hale's Early; Apples Lord Suffield, Lord Grosvenor, and Keswick Codlin, with Plums, Morello Cherries, Currants, Pears, and three bunches of Black Hamburgh Grapes (silver Banksian medal).

Messrs. G. Bunyard & Co., Maidstone, sent a large collection of Nuts, comprising twenty dishes of obs and Filberts. There were, besides others, Garibaldi, Dawson's Prolific, Géant des Halles, Cosford, Bergeri. White Filbert, Webb's Prize ob, Purple Filbert, Kent Cob, Atlas, and Frizzled Prolific Filbert. Mr. G. Elliott, gardener to Captain McDonald, Hurst Side, West Molesey, exhibited fifteen bunches of Grapes, all in capital condition (silver Knightian medal). Messrs. T. Rivers & Son, Sawbridgeworth, sent boxes of Plum Monarch, Green Gages, Golden Transparent, and Late Transparent, with two bunches each of Gradiska and Directeur Tisserand Grapes.

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair), with Messrs. O. Thomas, C. T. Druery, H. B. May, R. Dean, G. Stevens, J. F. McLeod, C. Jeffries, J. D. Pawle, J. Walker, G. Nicholson, J. Fraser, H. J. Jones, R. M. Hogg, and J. Fraser.

The most conspicuous exhibit in the floral section was an immense group of Caladiums arranged by Messrs. J. Laing & Sons, Forest Hill. The plants included well-grown examples of Michel Buchner, Louis Van Houtte, Baron Adolph de Rothschild, Flammant Rose, Princess of Teck, B. S. Williams, Ibis Rose, George Berger, and many others. The same firm also had a handsome exhibit of beautifully coloured Crotons (silver-gilt Flora medal).

Messrs. R. Wallace & Co., Colchester, exhibited a large collection of hardy flowers of fine quality. Liliums, Gladioli, Montbretias, Watsonia Ardernei, and many others (silver Flora medal). P. Purnell, Esq., Woodlands, Streatham, staged a group of miscellaneous foliage and flowering plants, comprising Ferns, Crotons, Hydrangeas, Begonias, Fuchsias, and others (silver Flora medal). Messrs. J. Veitch & Sons, Ltd., Chelsea, sent an interesting collection of Ericas, including E. vulgaris Alport, cinerea alba, vulgaris monstrosa, v. cuprea, v. florepleno, v. Hammondi, v. aurea, and others (silver Banksian medal).

ORCHID COMMITTEE.—Present: H. J. Veitch, Esq. (in the chair); with Messrs. De B. Crawshay, H. J. Chapman, W. H. White, J. T. Gabriel, W. H. Young, E. Hill, T. W. Bond, W. Cobb, A. H. Smee, A. Mason, and H. M. Pollett.

Messrs. F. Sander & Co., St. Albans, exhibited a few Orchids, comprising Lælio-Cattleya Sanderæ, L.-C. Rose Measures, Cattleya Gaskelliana, and one or two others. A silver Banksian medal was given to Messrs. J. Veitch & Sons, Ltd., for a small group, including several Cattleyas, Lælio-Cattleyas, and Cypripediums Janet and Melanthus. Mr. W. H. White, Orchid grower to Sir Trevor Lawrence, Bart., Burford Lodge, Dorking, sent Lælio-Cattleya Janet, Cymbidium species, and a spike of Grammatophyllum speciosum. For this plant the Orchid Committee gave a gold medal and a first-class certificate.

CERTIFICATES AND AWARDS OF MERIT.

Dahlia Marjorie (C. Turner).—The form of this Show Dahlia is excellent. The colour is yellowish buff, shaded with rose (award of merit).

Dahlia Hypatia (C. Turner).—If rather dull in colour this Pompon is of splendid shape. The shade is dull terra-cotta (award of merit).

Dahlia Vesta (C. Turner).—A pure white Pompon of good quality (award of merit).

Dahlia Phryne (C. Turner).—A charming Pompon of which the yellow petals are edged with bright red (award of merit).

Dahlia Night (J. Stredwick).—This is an intensely dark variety of good form (award of merit).

Dahlia Amber (J. Stredwick).—A beautiful variety of the Cactus section. The colour is yellow, the other petals being flushed with rose (award of merit).

Ficus radicans variegata (W. Bull).—A handsomely silver-variegated form of the type (first-class certificate).

Goodyera Rollisoni (W. Bull).—The foliage of this plant is very handsome. The central portion of the leaf is dull velvety green, and the edging is yellow (award of merit).

Grammatophyllum speciosum (W. H. White).—Flowering for the first time for upwards of forty years, the spike of this plant attracted attention from everyone. The spike is about 7 feet high and the flowers very numerous. The colour of the flowers is brown and gold (first-class certificate).

Lælio-Cattleya Andreana (H. J. Chapman).—A beautiful hybrid, with narrow white petals and sepals delicately flushed with rose. The lip is long, narrow, and of a rich maroon colour (award of merit).

Lælio-Cattleya Juno (N. C. Cookson). A lovely bigeneric hybrid. The sepals and petals are delicate rose, the former being delicately suffused with yellow at the tips. The lip is crimson purple (award of merit).

Melon Frogmore Scarlet (O. Thomas).—This Melon is not only handsome in appearance, but of splendid flavour. It has a great depth of luscious flesh (award of merit).

REMINISCENCES OF BODORGAN.

ON the main line from Chester to Holyhead, about fourteen miles distant from the latter station, lies the ancient village of Bodorgan, where we alighted on our way to visit the Welsh seat of Sir George Meyrick, Bart. On the high road leading from Bodorgan Station we called to inspect the ancient church of Llangadwaladr, the present vicar of which told us the structure was originally built in 508. Since then this ancient edifice has, however, been several times restored, and a few of the historic features carefully preserved, including a notably inscribed stone of the seventh century, as well as a beautiful seventeenth-century window, the rich colours in same being beautifully blended and striking in appearance.

The gardens, were, however, our *rendezvous*, and under the guidance of Mr. Gray, Sir George's head gardener, we hastened on over a distance of some two miles to what proved to be a veritable paradise. No less an area than 8 acres are devoted to the cultivation of flowers, fruits, and vegetables; and everywhere evidence of skilful and successful culture was to be seen. In the extensive vegetable quarters, which were clean and tidy throughout, we noticed, in addition to many of the old standard varieties, several novelties under trial, the rule evidently being to have the best of everything.

Summer bedding is not carried out on an extensive scale, owing to the bleak and exposed position of many of the flower beds, the majority of which were filled with a choice collection of dwarf Conifers, the appearance of these showing that the soil and situation suit their culture admirably.

Old-fashioned herbaceous flowers are, however, extensively grown, and we noticed with pleasure that an additional large border, running the whole length of the garden, had recently been planted with a choice collection of these from the famous nurseries at Chester. The garden walls are well covered with a general collection of hardy fruits, as well as some healthy-looking specimens of evergreen shrubs, including a particularly well-furnished example of the Maidenhair Tree (Salisburia adiantifolia). The glass houses, thirty in number, contain carefully selected collections of Orchids, Crotons, Coleus, Begonias, and other plants, including a large number of Adiantums, all in the picture of good health.

The vineries and Peach houses are, however, the chief attraction in the way of "glass," and these contained some beautifully finished bunches of Madresfield Court, Lady Downe's, and Muscat of Alexandria, several of which have since figured in the prize lists at Liverpool, Chester, and other shows. At the time of our visit a long range of Ewing's, now old-fashioned, wall glass protector was being converted into Peach houses, which will give Mr. Gray still further scope in this direction.

The pleasure grounds abound in fine collections of Cedars, Pines, evergreen and flowering shrubs, and nowhere have we seen any of these make such rapid growth as they do in this genial Anglesey soil. Particularly worthy of notice are the Araucarias, several of which have attained a large size, and are at present bearing cones. This is not altogether a rare occurrence here, as Mr. Gray pointed out, with some amount of pride, to several healthy young specimens which had been "bred and born" in these beautiful grounds. Fine examples of Photinia serrulata, Forsythia viridissima, Garrya elliptica, Weeping Hollies, and Rhododendrons, the latter showing enormous yearling growths, all call for special mention. Splendid deciduous trees are also plentiful, many of which, even to the Hawthorn, being thickly covered with long-bearded species of grey lichen, giving them a somewhat weird-looking appearance.

The mansion, which is approached by a carriage drive nearly a mile in length, is substantially built on an elevated spot overlooking Maltreath Bay, on the coast of the Irish Sea. The interior is furnished in excellent taste, and contains several valuable family paintings, by eminent artists, as well as ancient historic relics. From the terrace commanding views of Snowdon, Llanfairfechan, Carnarvon Bay, and other popular resorts in North Wales are to be seen, the whole outlook being one of striking grandeur.

A hurried visit to the seashore brought a most enjoyable and profitable day much too suddenly to a close; but pleasant reminiscences of this beautiful Anglesey home still linger with us.—GEORGE PAXTON.

MEDEA AND MARÉCHAL NIEL.

I AM gratified to find my estimate of Medea supported by such authorities as Mr. A. Piper and Mr. W. Easlea on page 151 of the *Journal of Horticulture*. Judging from what he says of it in his catalogue (in which he does not always follow the raisers' descriptions), Mr. Frank Cant, who grows it magnificently, has an equally high opinion of the value of this Rose. This rosarian describes it as follows, "Lemon yellow, with canary yellow centre; large, very double, and perfect globular form; a good grower and free bloomer; it promises to be first-class." And I think that the promise of what Mr. Cant writes at the end of his estimate has been amply redeemed. I recently showed a superb bloom of Medea to a successful cultivator of Maréchal Niel, and while he insisted on the greater depth of colour possessed by the queen of Noisettes, he admitted that Medea "had a more vigorous constitution; firmer and stronger petals, and greater substance."

It is, as "D., *Deal*," very clearly indicates, its delicacy of petal and peculiarly pendulous habit that impose on Maréchal Niel when grown in the open garden, its greatest limitations. I have invariably discovered that of all existing Roses of its special character it is the most susceptible to the influence of rain. Only in a very exceptional season is it capable of unfolding its marvellous capabilities. What "W. R. Raillem" has said regarding its so-called perpetuality is very interesting as indicating that, with adequate protection during the winter season and careful, judicious pruning, its period of bloom may be considerably prolonged. Nevertheless, I still venture to question if it can expressively be termed a perpetual bloomer, like Madame Hoste, Medea, or Marie Van Houtte.

Unlike Mr. A. Piper, I am disposed to give Medea a higher place in my estimation than Perle des Jardins. The latter is, of course, a deeper yellow, if that is any merit from an artistic point of view. For my own part I much prefer the complexion of Medea, deepening as it does from pale lemon in the outer petals to the richest canary yellow in the centre, with a most exquisite external suggestion of carmine. It has also a much finer form and habit than Perles des Jardins, and rarely appears, like that variety, with divided blooms.

In the special contribution which created this controversy I made no comparison of Medea with Maréchal Niel, no allusion whatever having been made to the latter variety, which I have never regarded, by reason of the limitations to which I have alluded, as adapted for the special purpose of garden cultivation.—DAVID R. WILLIAMSON.

NOTES FROM STONELEIGH ABBEY.

A RECENT call on Mr. H. T. Martin, who took charge of these gardens about six months ago, found him comfortably settled in his pleasant home among the sylvan scenes of "leafy Warwickshire." The garden is a good one, and has long been noted for the extensive and successful culture of fruit and vegetables. These things Mr. Martin continues to maintain in good condition, as well as to make steady improvements in other directions. Two new features introduced are a couple of hundred Chrysanthemums grown on the large bloom principle, and the modern method of growing Onions, a grand bed resulting. They were planted about a foot apart, and the large shapely bulbs show that their wants have been well attended to.

Now for a word about the Chrysanthemums. They are certainly the tallest plants that I have met with this season, and have evidently been grown throughout without a check. Both wood and leaves are wonderfully strong, yet apparently hard, and likely to ripen well. This will, of course, depend to a great extent upon the weather we experience from the present time till November. There is just a doubt in my mind as to their ripening properly, for the situation at Stoneleigh is not an ideal one for Chrysanthemum growing, lying somewhat too low to secure the necessary exposure. Of this, however, we may be certain, that Mr. Martin's past experience with "the queen of autumn flowers" will enable him to handle them in a skilful manner.

Vine-growing is at present conducted under considerable difficulties, but it is probable that in the near future matters may be improved by a re-arrangement of the borders, and the system of planting. A promising stock of decorative plants is being worked up, and I noticed among them some of the best varieties of Crotons and Draæenas, all looking clean, healthy, and colouring well. Gooseberries grown as cordons are one of the features of Stoneleigh, and are alone worth going a long journey to see; from top to bottom they are loaded with fruit, and I am told that the crop seldom if ever fails when grown on this system.

We should, no doubt, have spent much more time in examining various crops, debating methods of culture, and having generally a good time of it, but for the fact that we were reminded we had yet to partake of the cup of tea which Mrs. Martin had so thoughtfully provided. This and many other kindnesses we thoroughly enjoyed, and then set out for a pleasant homeward drive towards the stately towers of Warwick Castle.—H. D.

MUSCAT OF ALEXANDRIA GRAPES SHANKING.

INFORMATION WANTED.

I HAVE a small house of Muscats under my charge which were planted six years ago, after being fruited one year in pots. On my taking charge two years later I found them in a very unsatisfactory condition. The leaves were thin, pale in colour, and sickly looking, while the few bunches that were on them had shanked badly.

Having ascertained that they were planted in an old border, which is an outside one (and which was originally occupied by Roses, drawn through under the sill and trained to the roof the same way as the Vines), I decided to lift them the following autumn and re-make the border. In doing this I found the site properly drained, and after wheeling all the old soil out, its place was taken by new compost—a mixture of one part turf cut off the limestone, one part sandy loam, and one part horse and pig manure, to which was added some old mortar, burnt earth, and wood ashes. After being made firm the roots were laid out and covered about 6 inches deep with soil; the next year the Vines were much improved in health, and good crops of Grapes followed, but this year the berries have shanked almost wholesale.

An examination of the border revealed the fact that the soil is full of Elm roots, which come under the garden wall from some trees growing outside. Would it be that these hungry feeding roots have impoverished the soil, thus causing the Grapes to shank? I am anxious to find the cause, also a remedy. There is a Lady Downe's about one-third of the way along the house, and this never loses a berry by shanking, yet the Muscats on each side of it are as bad as they can be.—R. M.

BRAMLEY PARK.

THIS, the charming estate of Colonel Ricardo, is situate in the pretty and quaint village of Bramley, which is about four miles below Guildford. The house, which is of the Italian order, lies somewhat low relatively, as much of the surrounding ground runs high. It is a handsome structure, approached by a broad serpentine drive, and has at one end a very fine span conservatory that is always kept wonderfully gay with flowers. But the other day when seen the dominating feature was Campanula pyramidalis, huge plants splendidly grown, both white and blue. Fuchsias also were plentiful and good, and numerous other plants, flowering and foliage. The lawns have several flower beds filled with the usual summer plants, all looking exceedingly gay, and there are plenty of fine trees and clumps of shrubs, Rhododendrons growing most luxuriantly.

But the great floral feature of the place is the herbaceous garden. This was some years since, when Mr. H. Paddon, the present gardener, came to Bramley, little better than a swamp. Getting permission to convert it into a garden the large lakes near the house were cleaned out, and the sediment used to fill the hollow. Gradually large borders, paths, and grassy glades were formed and planted, and nearer the lower half is full to the utmost of hardy herbaceous and bulbous plants in rich profusion, and in huge clumps, furnishing a wonderful wealth of bloom, whilst the upper half is planted with Dahlias, Stocks, Fuchsias, Cannas, Asters, and other similar tender or half-hardy flowers.

This garden was completed in 1887, hence it is known as the Jubilee Garden. On its north and east sides Cupressus Lawsoniana was planted to form a dense shelter, as also a blind to houses beyond, and these have grown so well that they tower up 18 and 20 feet in height, making a very perfect as well as a pleasing break. This garden, thus evolved from a piece of very unsightly waste, is indeed a fine feature at this place. In the kitchen garden hardy flowers are grown in great abundance, and they lend much of beauty to the surroundings.

In one greenhouse, some 28 feet long, Allamanda Hendersoni, trained 5 feet wide all along the roof, is a marvellous sight, being literally a mass of bloom. It flowers for some eight months, furnishing many thousands of blooms in the time. Fuchsias are in this house blooming with exceeding profuseness. It was quite a treat to see these plants so freely used, as in so many gardens gaudy Begonias and similar things have elbowed them out. Outside fruit on Apple, Pear, and Plum trees is rather scarce, but some Apples are very fine, and it is easy to understand that when springs are favourable in this low-lying, moist situation the fruits must be fine indeed. Grapes are good generally—so, indeed, is everything else.

The great glass house feature is the Peach house, a lean-to 52 feet by 15 feet. This house has the front border planted with trees on the cross method. There are twelve of them at about 4 feet apart, each old tree being some 12 feet long by 5 feet high. On several the fruit crops are wonderful, notably on Royal George, at each end, the crops being astonishing, the fruits fine and richly coloured. This is, indeed, one of the best general Peaches in cultivation. Besides these there are Barrington, Crimson Galande, Walburton Admirable, Salwey, Noblesse, Prince of Wales, Alexandra Noblesse, and Dymond; and Violet Hâtive Nectarine. Then on the back wall, furnishing it fully from top to bottom, are Royal George Peach, again a splendid crop; Elruge Nectarine, also a great crop, the fruits of intense colour; Gros Mignonne and Noblesse Peaches. A couple of old riders will be removed in the winter.

Mr. Paddon thinks that while fruits grown on cross-trained trees may not always colour so well as on trees trained close under the glass, yet more fruits are obtained in this way, and it is possible to have greater succession in variety, which where there is but one house is very important. This Peach house would do credit to any garden in the kingdom.—A. D.

HORTICULTURAL SHOWS.

BOSCOMBE.—August 17th and 18th.

This, the second exhibition held in connection with the Boscombe Carnival in Lady Shelley's Park, was a great success. Those interested in horticulture are greatly indebted to A. Beckett, Esq., of Boscombe, to whose spirit and enterprise they have been privileged to witness the best summer exhibition ever held in this neighbourhood. Summer shows have never been a great success in Bournemouth, but this, in connection with a four-days carnival and other attractions, helped to draw an immense concourse of people, estimated to number about 30,000 on Wednesday, the second day of the show.

The Park offers every facility for such a gathering. It is situated in the centre of Boscombe, the eastern portion of Bournemouth, close to the main thoroughfare, and surrounded with Pine and other trees, with ample room for everyone. Mr. Beckett invited a committee of nurserymen and gardeners to manage the horticultural department of the carnival (of whom Mr. J. Spong, gardener to the Dowager Countess Cairns, was the secretary) and gave them a free hand to offer such prizes as would insure some good exhibits. The result was very satisfactory, as good entries were received for the majority of the classes.

£45 was offered for a group of plants arranged for effect—£20, £15, and £10. Seven exhibits were arranged down the centre of a large marquee, 200 by 40 feet, each exhibitor being allowed a space of 15 feet square, with ample room between each group, and in every case they filled the space of 225 feet. The Judges were some time in coming to a decision, but eventually Mr. J. Cypher secured the premier position. All the seven groups were of excellent merit, and the Judges were empowered to award two extra prizes. For twelve stove or greenhouse plants, not less than six in bloom, there were five noble exhibits. Here again Mr. Cypher secured the first prize, and all being of exceptional merit two extra prizes were awarded.

In the fruit classes were some good exhibits, but unfortunately some were damaged in transit, and only second and third prizes were awarded in the collection of nine varieties. Nine collections of vegetables were staged for the three prizes offered in the open division for nine varieties, and an extra prize was given, Lady Theodora Guest being first, and Sir J. W. Kelk second with grand exhibits.

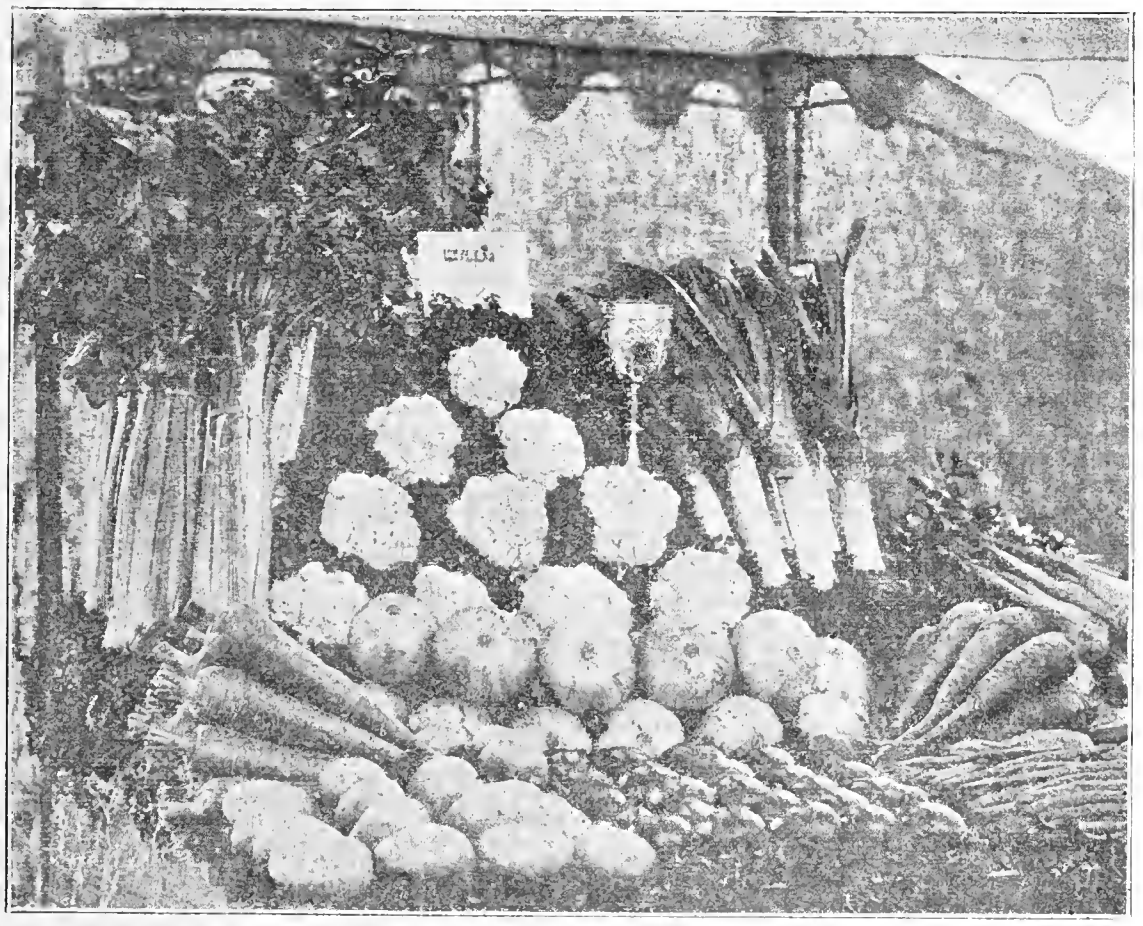

Fig. 28.—Mr. Foster's Collection of Vegetables. (*See page* 192.)

For a collection of Dahlias, with any foliage, arranged for effect on a table space of 10 by 4 feet, only two stands were staged, Messrs. Keynes, Williams & Co., Salisbury, being an easy first. For the time of the year they were a splendid exhibit, his four stands of doubles, twelve each, were simply perfect. Between each stand of doubles were Pompon and Cactus varieties, arranged with their own foliage, rising from the tables to a height of about 2½ feet. The centre stand contained some new varieties, to be sent out in 1898—viz., Britannia, Keynes' White, Mary Service, and Primrose Dame. Varieties, 1897—viz., Bridesmaid, Cycle, Ensign, Starfish, and The Queen, with Fusilier, Harmony, Earl of Pembroke, all the above being Cactus varieties. The other two central stands containing Pompons and Cactus in mixture. Shower bouquets were a fine exhibit, there being nine exhibitors of two, one bridal and one ball, Mr. F. Bailey of Southampton securing the first prize.

In the non-competitive exhibits, Mr. M. Prichard, of Christchurch, had a fresh exhibit of herbaceous flowers of the newest and best. Amongst them were noticed the new double Rudbeckia Golden Glow, and a new decorative Perennial Grass, Stipa gigantea, and Eryngium alpinum, a fine Sea Holly with soft spines. He had also a rather large arrangement of rockwork, representing an Alpine garden, containing about 100 kinds of suitable alpines and perennials, the whole being greatly admired. Mr. C. H. Ratsch, of Christchurch and Bournemouth, had also a stand and group of plants, the most noticeable being a French basket, with large handle, mounted and tastefully arranged, and two specimen Palms, Mr. Tidy, of the Victoria Nurseries, Mr. J. J. Swaffield, the Exotic Nursery, Messrs. G. Watts & Sons, the Palace Nurseries, Bournemouth, and Mr. T. K. Ingram, the Parkstone Nurseries, had each stands and groups of plants. Mr. J. Hobbs, gardener to Lady Shelley, also had a group of miscellaneous plants, the most noticeable amongst them being some extremely fine Cockscombs, and also two fine dishes of Prince of Wales Peaches. In the classes open to those within an area of twenty miles from Boscombe, some capital examples of cultivation were shown, and with thirty-eight classes for cottagers they occupied three other marquees, which were connected together, and of a total length of 180 feet.

A slight mishap occurred on Thursday evening, the large horticultural tent being blown down, but, fortunately, all the exhibits were cleared except two groups belonging to local exhibitors, and they were rather badly damaged. The following prizes were awarded in a few of the open classes:—

Group of miscellaneous plants for effect.—First, Mr. J. Cypher, Cheltenham; second, Mr. T. Wilkins, gardener to Lady Theodora Guest; third, Mr. W. Vause, Leamington Spa; fourth, Mr. W. Peel, gardener to Miss Todd, Sidford Lodge, Shirley, Southampton; and fifth, Mr. E. Wills, Shirley, Southampton. For twelve stove or greenhouse plants, not less than six in bloom, Orchids excluded, Mr. J. Cypher was first, showing Latania borbonica, Cycas circinalis, Kentias Belmoreana and Fosteriana Crotons Chelsoni and montefontainensis, Statice intermedia (a cross between profusa and Holfordi, not yet in commerce) Ixora Prince of Orange, Phœnocoma prolifera Barnesi, Erica Marnoekiana, Stephanotis floribunda, and Rondeletia speciosa. Mr. T. Wilkins was second, Mr. W. Vause third, Mr. E. Wills fourth, and Mr. W. Peel fifth. The successful competitors in the class for one stove or greenhouse plant in bloom were Messrs. J. Cypher, W. Vause, and W. Peel. One stove or greenhouse foliage plant.—First, Mr. W. Peel; second, Mr. Wilkins; and third, Mr. J. Cypher.

For six Caladiums Mr. Wilkins was a splendid first with C. Luddemanni, C. Automne, C. Aida, C. Mdlle. A. Bleu, C. Dr. Lindley and C. Chantini. Mr. W. Mitchell, gardener to J. W. Fleming, Esq., Chilworth Manor, Romsey, was second, and Messrs. G. Watts and Sons, Bournemouth, third. Mr. J. Cypher was first for four Crotons, distinct, with beautifully coloured plants of gloriosa, Flambeau, augustifolius, and Chelsoni. Mr. T. Wilkins was second, and Mr. W. Vause third. In the class for twenty-four table plants, in or out of bloom, pots not to exceed 6 inches diameter.—First, Mr. E. Wills; second, Mr. T. Wilkins; third Messrs. G. Watts & Sons.

Cut flowers were well shown. For twenty-four bunches of cut flowers, stove or greenhouse, separately staged in glasses, with Fern or other foliage, on a table space 15 square feet, Mr. T. Wilkins was first with a bright and light arrangement; Mr. G. Hall, gardener to Lady Ashburton, Melchet Court, Romsey, second, and Mr. W. Vause third.

There was only one collection of hardy flowers, annuals and shrubs excluded, this being sent by Mr. M. Pritchard, who took the first prize. Collections of Dahlias with any foliage, arranged for effect in a table space 10 by 4 feet.—First, Messrs. Keynes, Williams & Co., Salisbury; third, Messrs. G. Watts & Sons, Bournemouth. For two shower bouquets, one ball and one bridal, Mr. F. Bailey was first, Mr. St. Julian Arabin, Southampton, second, and Mr. C. H. Ratsch, Bournemouth, third.

In the class for fruit for a collection of nine kinds, Pines excluded, Mr. H. Higgs, gardener to G. H. M. Ricketts, Esq., Crommore Lodge, Christchurch, took the second prize; and Mr. G. A. Inglefield, gardener to Sir J. W. Kelk, Bart., the third. For three bunches black Grapes J. W. Fleming, Esq., was first with Black Hamburgh, splendid in bunch and finish, but not thinned enough. Mr. T. Boote, gardener to Mrs. F. Ricardo, Burchommage, Christchurch, was second: and Mr. W. Cheater, gardener to Sir Wm. Pink, Shrover Hall, Cosham, third. Three bunches white Grapes.—First, J. W. Fleming, Esq.; second, Mr. G. A. Inglefield: and third, Mr. G. Hall. Mr. H. J. Harvey, gardener to A. B. Sheridan, Esq., Frampton Court, Dorchester, was first for six Peaches, followed by J. W. Fleming, Esq., and Mr. G. A. Inglefield. One Melon.—First, Mr. H. J. Harvey; second, Mr. W. George, gardener to Canon Twells, Bournemouth: and third, Mr. J. Hayes.

For a collection of nine distinct kinds of vegetables Mr. T. Wilkins was first with a splendid exhibit, containing Autumn Giant Cauliflower,

Lyon Leek, and Ailsa Craig Onion, New Intermediate Carrot, Giant White Celery (grand), Perfection Tomato, Windsor Castle Potato, Ne Plus Ultra Runner Bean, and Autocrat Pea. Mr. G. A. Inglefield was second, and Mr. J. Hayes third. For twelve Tomatoes first, Messrs. G. Watts & Sons second, Mr. T. K. Ingram; and third, Mr. C. H. Ratsch.

EASTBOURNE.—August 18th.

Compton Place is an ideal spot for a flower show. This season it was an immense success both as regards exhibitors and attendance. Mr. J. Warren, Handcross Park, Crawley, was well to the fore in stove and greenhouse plants, all being good specimens, and a few of extra merit. He was in front of Mr. T. Portnell, gardener to Sir A. Lamb, Bart., Battle, for eight stove and greenhouse plants, Lapageria rosea splendens and Allamanda Hendersoni being extra good. Mr. Portnell turned the tables in a class for six plants, but was again forced into second position for eight variegated and ornamental foliaged plants. Mr. Warren was well ahead of Mr. Tugwell, gardener to Miss Swift, Beechwood, for eight exotic Ferns, but Mr. Tugwell won for six of the same. The brightest coloured Croton (Sunset) we have seen was in Mr. J. Warren's lot of eight, who also had some good Crotons in his winning exhibit of six ornamental foliaged plants.

Groups of Ferns were numerous and good, Mr. A. McBean, gardener to Miss Wragg, Bracmer, winning from Mr. T. Fuller, gardener to J. Hooke, Esq., Arundel House, Eastbourne. Mr. J. Warren won for six table plants, Mr. Portnell for six pyramidal Fuchsias, and Mr. G. Holding, gardener to Rev. H. V. Shorcland, Eastbourne, for good Zonal Pelargoniums and Coleus.

Fruit was good, especially Grapes and collections. Mr. Tugwell, gardener to Miss Swift, was well ahead in a class for three bunches of blacks with Black Hamburgh. Eight competed here. He also won for three of any white with Muscat of Alexandria, and with Black Hamburgh in the class for a single bunch of any variety. Mr. W. F. Thomas, Wannock, Polegate, was first for collections both of indoor and outdoor grown fruit.

Mr. J. Warren again led Mr. T. Portnell for twelve varieties of stove and greenhouse cut flowers. Roses were fairly good, Mr. Will Taylor, Hampton, winning for thirty-six varieties. Mr. T. D. Young, Eastbourne, followed. In the amateur division R. E. West, Esq., Wray Park, Reigate, was ahead for twenty-four and for twelve varieties. Seven competed in the class for three stands of table decorations, Mr. Sherrard, Hailsham, just beating Miss Smith, St. Leonards-on-Sea. Mr. T. D. Young was successful in floral designs, winning for a superb anchor lying upon a large mirror, for both bridal and ballroom bouquets, and for shoulder sprays and buttonholes.

The chief non-competitive exhibits were from Messrs. J. Cheal and Son, Crawley, Dahlias; Mr. J. Charlton, Tunbridge Wells, Dahlias and herbaceous cut flowers; Mr. F. W. Thomas, Polegate, fruit; and groups from Mr. H. May, Compton Place Gardens, and Messrs. G. F. Scott and Co., Ceylon Nursery, Eastbourne.

DUBLIN.—August 19th.

The Royal Horticultural Society of Ireland contributed, by the autumn Show, held on this date, amongst the greenery of Merrion Square, their quota to the gaieties now dominant in the Milesian Metropolis. Comparatively small as was this Exhibition, it was decidedly fresh and bright; well arranged, too, as far as the limits of one day allowed for staging, judging, clearing up, and clearing away; and last, not least, that capricious gentleman—the clerk of the weather acted exceedingly well as against some very bad behaviour indulged in for the ten days previous.

Probably no prettier scene, in its way, was ever witnessed in Dublin than the decorations provided in compliment to the Royal visitors, and from Merrion Square, looking citywards down Nassau Street, where a thousand flags, banners, and bunting fluttered bravely in the breeze, a charming *coup d'œil* was afforded. The remark made that Dublin had for the nonce outdone itself in the decorative way elicited the information that the citizens instead of carrying out individual notions had put all these arrangements into the hands of a London firm, hence the continuity of effect and harmony of design. However, the "London firm" had naught to do with supplying the hearty cheers of welcome accorded to their Royal Highnesses the Duke and Duchess of York, who, preceded by a prancing cavalcade of Hussars, drove up to the north entrance, with the Viceregal party strong in numbers and happy looking at the loyal greetings they shared with their distinguished guests.

One may be pardoned, surely, for digressing somewhat from the direct subject, such visits to our flower shows, as well as to our shores, being all too few and far between; and although another public function in the way of opening the Countess Cadogan's Textile Exhibition delayed the horticultural visit to a late hour, the Royal visit was, undoubtedly, the attraction which thronged the greensward of the Square with a patient multitude, which 3s. admission (unless furnished with a ticket) was no preventive. Flora and Pomona must, however, have their turn, and they were in some ways worthily represented.

Looking round the plants non-competitive groups were as usual a feature, Glasnevin Botanic Gardens contributing a good lot of plants, some handsome, others curious, and all interesting, including such things as a superb Croton Reidi, to my mind the king of its kind; a flourishing plant of the distinct Nepenthes Burkei excellens, and some of the most curious of the Cacti being dispersed through a well arranged stand of the "rich and rare." Various trade groups comprising small, fresh, decorative plants also helped to furnish the large marquee, in which the competing exhibits were not strong in numbers. Amongst the latter, for twelve foliage and flowering plants Mrs. McComas was awarded the first prize, L. G. Watson, Esq., an old exhibitor, being placed second. For six similar plants, Mr. Colohan, gardener to F. Millar, Esq., led, and for exotic Ferns, Mr. Watson's grand plants, including a fine Todea superba, as usual triumphed; Miss Wallis (gardener, Mr. Kenny) following Mr. Millar, who took second. For Tuberous Begonias (plants), six doubles, the prizes were taken by the enthusiast, Mr. O'Connor, gardener to R. H. McComas, Esq.; the veteran, Mr. Mackenzie, gardener to Mrs. Pease, and Miss Wallis respectively; the prizes for single varieties being competed for and won by the same exhibitors in the same order. Mrs. Pease, Mrs. McCann, and J. Millar, Esq., took first, second and third for six Zonal Pelargoniums. Ivy-leaved varieties were best from Mrs. Pease, and second best from J. Millar, Esq. Sir Roger Palmer showed the best specimens exotic; Mr. T. Byrne, gardener to Geo. Drimmie, Esq., having the best specimen Orchid. Mr. T. Goff, Mrs. McCann's gardener, in a well-filled class for six Coleus in variety, had six matchless beauties which captivated the eye of the most critical of the critics; the Right Hon. J. Meade, LL.D., and Mrs. Pease being second and third.

Stands of cut blooms bring one first to the Dahlias, of which the Show and Fancy section was probably not so strong a feature as usual in Dublin. In the class for thirty-six, in twenty-four varieties, Lord Ashbrook, The Castle, Durrow (gardener, Mr. McKellar), was first; Mr. McLennan, for Lord Carew, Castleborough, being second. Mr. Rigg showing the best twenty-four in twelve varieties for Lord Cloncurry; Mr. McKenna, gardener to the Lady Emily Howard, Bury, second; third, W. F. Darley, Esq. (Mr. Leonard, gardener). Cactus Dahlias were well shown, noticeable among the stands being Gloriosa, and the rich, dark satiny Matchless; Lord Carew, Lord Cloncurry, and Lady E. H. Bury taking the honours respectively. Lord Cloncurry had the best stand of twenty-four Roses in twelve varieties, and also the best stand of twelve; E. D'Olier, Esq., sending from Knocklin, Bray, the best stand of twelve Teas. Gladioli were sparsely shown, H. Jervis-White, Esq., having the first prize stand of twelve spikes. Twelve varieties of Zonal Pelargoniums were awarded first, second, and third to Lord Ashbrook, Geo. Drimmie, Esq., and Mrs. Pease.

A challenge cup, value 10 guineas, presented by Lady Ashtown, to be won three times before finally claimed, for forty-eight blooms of Begonias, half double, half single, went to Lord Ashbrook, Mrs. Pease being second; leading honours in a smaller class of double varieties going to the same exhibitors, also for a similar class of single varieties. Passing over some few classes for Asters and Marigolds, that enthusiastic amateur, H. A. Smallman, Esq., came second to Lord Cloncurry for six bunches of Carnations, who took the lead in the larger class of the same popular flower, Surgeon-General Beaumont being second here, with B. Philipson, Esq., of Dalkey, third. The prize for twelve bunches of Eckford's Sweet Peas, presented by the eminent raisers, was carried off by Mr. Mitchison, gardener to the Hon. Col. Crichton. Nurserymen's classes for Dahlias and Roses were led off by Messrs. Campbell of Blantyre, N.B., and Dicksons of Newtownards, the first having the best Dahlias, whilst, it goes without saying, that the great Irish Rose growers held front rank on their own ground among the Roses, their forty-eight being in fine form for the season.

Some few classes are unavoidably passed over, though a passing notice must be given to the fine stands of Begonia blooms and the grand display of Carnations not for competition. The Begonias from Cork, 400 blooms being staged by Hartlands, were a marvel of size, colour, and freshness; and from Mr. Watson of the Clontarf Nurseries came a goodly array of his grand Carnations, which were well represented and took honours at Chester previously. Mr. R. Jameson of the Sandymount Nurseries was a bit squeezed at one end of a tent with a good group of miscellaneous plants, and Mr. Ramsay's portly manager looked well satisfied in showing off his well-grown plants from the Ball's Bridge Nurseries.

Fruit must be briefly surveyed. Lord Holmpatrick's prize for six bunches of Grapes in three varieties went to the Lady E. H. Bury; Robt. Tedcastle, Esq., of Marlay, second; third, T. Bradshaw, gardener to the Marquis of Downshire. In the first and second prize stands Cooper's Black was conspicuous by superbly coloured high-finished bunches, being far and away the best black Grape shown. Other classes in the Grapes were fairly well filled, Muscat of Alexandria generally lacking colour. First for a collection of twelve dishes of fruit was taken by the Lady E. H. Bury; Mr. W. Bradshaw, gardener to Sir David Harrell, K.C.B., coming second, the Marlay collection third. Good Peaches from E. D'Olier, Esq., gained him first prize. Good-looking specimens filled the Melon classes, the best green-fleshed coming from the Marquis of Downshire; scarlet, Lady Bury.

For the best twelve varieties of vegetables Lord Carew staged a fine tray, which included samples of Carrots and Parsnips as seldom seen on this side. Potatoes were not a strong feature, Sir James Mackey's prize for twenty kidneys and twenty rounds going to the Right Hon. I. M. Meade. Doubtless the indefatigable Secretary, G. M. Ross, Esq., concluded his hard day's work with the satisfied feeling that "all's well that ends well," for ere another day had dawned came a deluge, and one regretfully appends to the recent satisfactory notes sent from here upon things generally a qualification proceeding from inclement weather which, unless a change comes quickly, cannot but be regarded as serious.—K., *Dublin.*

CRYSTAL PALACE.—AUGUST 20TH AND 21ST.

THE twelfth great National Co-operative Flower Show, under the auspiees of the Agricultural and Horticultural Association, was held in the Crystal Palace on the above dates. This exhibition has usually been favoured with fine weather, but this year, during the opening day, rain fell almost incessantly. This was unfortunate, as it would doubtless militate against a very large coneourse of visitors. We shall deal in our report with Section II., which was confined to members or eustomers of the Assoeiation or their gardeners and employés, the exhibits being staged and adjudicated upon on Friday ; Seetion I., for amateurs and eottagers, being staged on Saturday. This year there was a notable departure in the plaee of staging, this having hitherto been done in the centre transept, whereas this season it was in a splendid marquee that had been ereeted on the terrace. It was the more unfortunate that rain should fall, as many people who entered the Palace would not venture even such a short distance to see the show.

So far as numbers were concerned there was an appreciable falling off ; indeed, in some of the classes there were no entries at all. This was especially noticeable in the classes for collections of vegetables, which, as a rule, make a very fine display. Only in one class were there any exhibits. While quantity was less, we are inclined to the opinion that amongst the fruit and vegetables, especially the latter, the quality was decidedly higher. There has often been at these shows a coarseness that ought not to be seen ; but on this occasion size had not apparently been such a desideratum with the growers. All the green Cabbages, however, were far too large for the table, and it is hoped that next year these will have come down to reasonable dimensions, when the table qualities will be decidedly enhanced. The display of Potatoes was magnificent, and we doubt if a finer collection has ever been seen at one of these shows. Plants were not of particular merit, but some charming flowers were noticed.

The class for a collection of vegetables in ten distinct kinds grown in the Southern district was won by Mr. C. J. Waite, gardener to the Hon. W. P. Talbot, Glenhurst, Esher. The produce represented included Leek Giant, Carrot New Red Intermediate, Cauliflower, Beet Blood Red, Celery Mammoth White, Onion Ailsa Craig, Searlet Runners, Tomato Perfection, Cucumber Telegraph, and Potato Satisfaction. Mr. A. Basile, gardener to O. L. Powells, Esq., Woburn Park, was second. His Potatoes, Peas, Marrows, and Celery were good. Mr. R. Wadham, Steeple Aston, was third ; and Mr. J. Holton, Oxford, fourth.

The competition in the Onion classes was keen, and some splendid bulbs were staged. Mr. R. Chamberlain, Reading, was first for spring sown with fine Ailsa Craig ; Mr. A. Basile for White Spanish ; and Mr. C. J. Waite for winter Onions. In each class nine bulbs had to be shown. The last named exhibitor staged grand Parsnips, the roots being clean and straight. Peas were not particularly well staged, almost all being old, and many of the pods not filled. Mr. C. J. Waite won the single dish of One and All Exhibition Marrows, and Mr. A. Basile for a dish of any other variety.

The dishes of Runner, French, and Longpod Beans were very numerous and excellent in quality. The first prizewinners in the respective classes were Messrs. J. Holton, who was to the front in the Runner and French Bean classes ; Mr. R. Chamberlain in the Longpod ; and Mr. G. Palmer, Oxford, for Broad Windsor. There were fourteen exhibits of Tap-rooted Beets, Mr. C. J. Waite winning. For Turnip-rooted, in which there were about eighteen exhibitors, Mr. R. Wadham took the premier award. Green Cabbages were far too large throughout. Mr. A. Basile won with three immense heads, which, however, were clean and fresh. Nearly all others were coarse. Mr. J. Martin, Horsham, had three grand Red Cabbages, as had Mr. C. J. Waite, who took second place.

Potatoes were excellent, and made one of the best features of the Show. There were eight exhibitors of six varieties, the first prize going to Mr. A. Basile, who showed Satisfaction, Supreme, Up to Date, Flour Ball, Windsor Castle, and International. Mr. J. Holton was a fair second, and Mr. R. Webster, Bromley, third. Mr. J. Holton took first for a single dish of white kidney, while for coloured kidneys Mr. R. Wadhams was first. The best white rounds came from Mr. C. J. Waite, and Mr. J. Holton the best coloured rounds.

Mr. J. Holton staged superb One and All Intermediate Carrots, as did Mr. R. Wadham the ordinary Intermediate. Mr. J. Holton's Long Red Surrey Carrots were splendid. Cauliflowers were not very grand. Mr. A. Basile was first for three with nice heads. Mr. J. Holton staged fine Red and White Celery, taking first in each case. Herbs were numerously and well staged by several competitors.

Culinary Apples were largely shown. For three dishes Mr. A. Basile was first with splendid specimens ; Mr. A. Galvin, Sittingbourne, having the best dessert varieties. Mr. T. Osman secured the first prize for a collection of open air fruit, and was closely followed by Mr. R. Wadhams.

Mr. C. J. Waite had the best black Grapes, and Mr. Taylor the best white. Peaches and Nectarines, Pears, Plums, Gooseberries and Currants were largely staged. Amongst the prizewinners were Messrs. C. J. Waite, A. Basile, A. Galvin, W. Taylor, R. Wadham, J. Humphrey, and J. Holton.

The second day was the industrial day, the products representing the devotion and skill of the wage-earning community in various parts of the country. The display, as a whole, was altogether creditable and commendable. Vegetables, with the exception of one or two kinds, were splendid, and competition great in most of the classes. Potatoes, Carrots, Parsnips, Shallots, Onions, Peas, Beans, and Celery, in fact nearly all kinds, would be hard to surpass. Turnips were, perhaps, a little weak, and Cabbages too large and coarse, but taking the display as a whole it was decidedly meritorious.

Plants and flowers were never so well represented at these Shows before, and marked improvement was apparent in the arrangement of flowers. Still there were many examples of close packing, as if some of the earnest competitors had tried to crowd the greatest possible number into the smallest possible space. When they find, however, that this is not the way to win prizes improvement will follow, as it has done in numbers of instances.

An effort is being made to encourage flower culture among children attending schools. During the past spring the Council of the Association commenced by offering prizes for the culture of pot plants to the children in twenty-seven London schools. No less than 1627 competitors entered, and the results were exhibited before the recent breaking up for the holidays. So much interest and enthusiasm was shown that Mr. Edward Owen Greening, at whose instance the experiment was made this year, hopes to see a great development of the movement in future years.

The exhibition, which filled a marquee 500 feet long by 40 feet wide, on the Terrace, was highly successful, and the courtesy of the several officials beyond praise.

NATIONAL CARNATION AND PICOTEE SOCIETY

(NORTHERN SECTION).

THE annual exhibition of the above Society was held at the Royal Botanical Gardens, Old Trafford, Manchester, on Saturday, August 14th. Considering the excessive heat which prevailed a few weeks ago the blooms were remarkably good, and taken altogether the exhibition was a grand success, comparing favourably with those held in previous years.

For twelve flakes and bizarres, dissimilar, Mr. T. Lord, Todmorden, was first with fine flowers of George, Master Fred, Gordon Lewis, J. S. Hedderley, Bruce Findlay, Magpie, Mrs. Rowan, Robt. Houlgrave, Admiral Curzon, Mrs. T. Lord, Guardsman, and Thaddeus. Mr. J. Edwards second ; Mr. Geo. Thornley third ; and Mr. H. Geggie fourth.

For six bizarres and flakes, dissimilar, Mr. C. Head, Hebden Bridge, was first ; Mr. C. F. Thurstan, Wolverhampton, second ; third, Mr. J. Lees ; fourth, Mr. J. Whittaker. In the class for twelve selfs, not more than two flowers of any one variety, Mr. T. Lord, Todmorden, was first with Germania, Nero, Mrs. T. Helliwell (a grand new coral pink self), Germania, Albino, Ruby, Mrs. Fred, Joe Willet, Topsy, Lady Agnes, Vesuvius, and Mr. T. Helliwell ; second, Mr. Joe Edwards, Blackley ; third, Mr. Wm. Kenyon ; fourth, Mr. L. B. Bleackley. Six self Carnations, not more than two flowers of any one variety, Mr. C. F. Thurstan, Wolverhampton, was first ; Mr. E. Shaw, Moston, second ; Mr. A. R. Brown, third ; Mr. D. Walker, fourth ; and Mr. Ed. Kenyon, fifth.

In the class for twelve Fancy or yellow ground Carnations, not more than two flowers of any one variety, Mr. A. R. Brown, Birmingham, was first with grand flowers of Voltaire, Mrs. A. Tate, Voltaire, Stadtrath Bail, The Gift, Eunomia, Monarch, Virgo, Janira, The Dey, Virgo, and Mr. Nigel ; Mr. C. F. Thurstan, Wolverhampton, second ; third, Mr. D. Walker, Kilmarnock ; fourth, Mr. T. Lord ; fifth, Mr. J. Edwards. Six Fancy or yellow ground Carnations and Picotees, with not more than two flowers of any one variety.—First, Mr. F. Steele, Hanley, with Monarch, President Carnot, Ladas, Monarch, Stadtrath Bail, and Ladas ; second, Mr. J. Brocklehurst ; third, Mr. W. Kenyon ; fourth, Mr. J. Lees, Premier Carnation, Mr. J. Whittaker, Royton, with Robt. Houlgrave, S.B.

Single blooms were admirably shown, and the awards were made as follows :—Searlet bizarres.—First, Mr. T. Lord, with Robt. Houlgrave ; second, Mr. L. B. Bleackley, with Robt. Houlgrave ; third, Mr. Geo. Thornley, with Robt. Houlgrave ; fourth, Mr. Jas. Turner, with George ; and fifth, Mr. H. Geggie, with seedling. Crimson bizarres. First, Mr. T. Lord, with Master Fred ; second, Mr. J. Edwards, with Jos. Lakin ; third, Mr. T. Lord, with Master Fred ; fourth, Mr. J. Edwards, with J. S. Hedderley ; fifth, Mr. Geo. Thornley, with Edith Annie. Pink and purple bizarres.—First, Mr. T. Lord, with Edith Annie ; second, Mr. Jas. Etherington, with Mrs. Barlow ; third, Mr. T. Lord, with Sarah Payne ; fourth, Mr. Jas. Etherington, with Mrs. Barlow ; fifth, Mr. Joe Edwards, with Ellis Crossley, Scarlet flake.—First and second, Mr. T. Lord, with Sportsman ; third, Mr. Ed. Kenyon with Guardsman ; fourth, Mr. Jas. Turner, and fifth, Mr. Joe Edwards, both with Sportsman. Rose flake.—First and second, Mr. Joe Edwards, with Mrs. Rowan and Mrs. Gunn ; third, Mr. A. R. Brown, with Tudor ; fourth, Mr. T. Lord, with Mrs. T. Lord ; fifth, Mr. J. Whittaker, with Cristagalli. Purple flake.—First and second, Mr. T. Lord, and third, Mr. Joe Edwards, with Gordon Lewis ; fourth, Mr. J. Edwards, with Jas. Douglas ; fifth, Mr. J. Lees, with Billy Henderson.

In the important class for twelve blooms, distinct, Mr. T. Lord, Todmorden, was first with finely developed blooms of Mrs. Sharp, Lena, Mrs. Coldridge, Brunette, Amy Robsart, Nellie, Somerhill, Little Phil, John Smith, Muriel, Thomas William, and Morna ; Mr. W. Kenyon, Bury, second ; third, Mr. Joe Edwards ; fourth, Mr. E. Shaw ; fifth, Mr. Jas. Turner. For six blooms, distinct, Mr. C. Head was first, with Brunette, Mrs. Sharp, Thomas William, Muriel, Nellie, and Mrs. Wilson ; Mr. C. F. Thurstan, second ; Mr. J. Lees, third ; Mr. Ed. Kenyon, fourth ; Mr. F. Steele, fifth ; Mr. J. Whitaker, sixth.

In the classes for single blooms there were some fine flowers shown. For heavy edged red, Mr. T. Lord was first and second with John Smith and Brunette ; Mr. E. Shaw, third and fifth, with Morna, and Mr. W. Kenyon fourth, with Mrs. Wilson. Light edged red.—First and fifth

Mr. J. Edwards, with Thomas William; second, Mr. C. F. Thurstan, with Mrs. Gorton; third and fourth, Mr. T. Lord, with Thomas William and Mrs. Gorton. Heavy-edged purple.—First and second, Mr. J. Edwards with Polly Brazil; third and fourth, Mr. T. Lord, with Muriel, and fifth, Mr. C. F. Thurstan, with Amy Robsart. Light-edged purple.—First, Mr. T. Lord, with Somerhill; second, Mr. C. F. Thurstan; third and fifth, Mr. J. Edwards; fourth, Mr. E. Shaw, all with Mary. Heavy-edged rose, scarlet, or salmon.—First and fifth, Mr. T. Lord, with Mrs. Sharp; second, Mr. C. Head, with Mrs. Sharp; third and fourth, Mr. W. Kenyon, with Mrs. Sharp and seedling. Light-edged rose, scarlet or salmon.—First and fourth, Mr. T. Lord, with Favourite and Nellie; second, Mr. J. Edwards, with Nellie; third, Mr. C. F. Thurstan, with Nellie, and fifth, Mr. W. Kenyon, with Favourite. Premier Picotee, Mr. C. Head, Hebden Bridge, with Nellie, light scarlet edge.

THE YOUNG GARDENERS' DOMAIN.

Strawberries.

With reference to "A Young Scot's" article on page 155 I notice he does not mention Elton Pine, a late Strawberry, that does remarkably well with us, it being loaded with a large crop of bright coloured fruit.

Our soil is of a clayey nature, which seems to suit it admirably, some of the beds having been planted four years, and are still bearing large crops of fruits. The fruit is rather acid for table use, although excellent for preserving. We commenced picking from the plants during the last week in July, and are still gathering large quantities from August 14th.

Speaking to a large grower of Strawberries in this locality he said Elton Pine was a failure with him, his soil being much lighter. Royal Sovereign did well, especially after the first year,

Some gardeners say it goes patchy or blind in Scotland; it did with us, but I cannot say if all the layers were taken from fruiting plants, which may account for some of the blindness. Vicomtesse Hericart de Thury does remarkably well, bearing heavy crops of large fine-flavoured fruit.

We commenced to pick on early borders from John Ruskin on July 8th, followed by Noble and Royal Sovereign. The nights have been very cold all the season, even after hot days, and made everything very late.—A. C. W., *Balcarres.*

The Means and Modes of Propagating Plants.

(*Continued from page* 107.)

Mention has been made of bulbs, tubers, and tuberous roots, but their nature has not been exactly explained. A bulb may best be described as an underground bud, which it is in point of fact. Its name is obtained from the Greek *bolbos*, meaning a globular root. The coronal of fibrous roots by which the bulb derives its nourishment from the soil are produced annually, dying with the leaves when the year's work is done, and the bulb takes its period of rest. While in activity the bulb takes in a store of sap, which has been elaborated in the leaves, and after the resting period leaves and blossoms are produced under favourable conditions.

Bulbs are not all alike in form. Some, like the White Lily (Lilium candidum) and many others of the tribe, are formed of scales that loosely overlap each other, and are easily detached. In Hyacinths and Onions they are in closely packed layers. In other plants, such as the Crocus and Gladiolus, the corm is neither in layers nor scales, but solid. The Cyclamen is another familiar example of this kind of corm. All these different forms vary in their mode of reproduction. In the Gladiolus cormlets form round the base, and may be grown into perfect plants. The scales of bulbs will also produce bulblets. In the Crocus a new corm forms on the top of the old one when its flowers have perished and its long grass-like leaves decayed.

Bulbous-rooted plants may be propagated by seeds as well as by offsets and bulblets; tuberous plants also are propagated by seeds as well as by means of their tubers. With such plants, however, propagation by seed leads to the production of new varieties, while propagation by bulb or tuber must of necessity be resorted to in order to insure the maintenance of the same variety. Thus new varieties of the Potato are produced from seeds, the result of cross fertilisation, but if any variety raised from seed exhibits qualities which render its preservation and increase desirable, this must be effected by buds from its tubers. Tubers are expansions of underground stems studded with eyes or buds, and stored with starchy or feculent matter, which affords nourishment to the buds until their root growth is sufficiently advanced to admit of their deriving support direct from the soil.

The Turnip, Parsnip, Carrot, Beetroot, and Radish should be termed tuberoids rather than tuberous roots; they resemble tubers in many points, but they are not reproduced from offsets cut from them, but wholly from seed. Propagation by natural methods are six in number—namely, (1) by seed; (2) by germs or offsets; (3) by slips; (4) by division of the plant; (5) by runners; (6) by suckers; and under each method a special mode of treatment is necessary. Thus in propagation by seed it is requisite to use seed the vitality of which is unimpaired. Seeds retain vitality for one or two years only under ordinary circumstances. It is better to sow seed saved during the previous season, or at the utmost not more than two seasons old. If it be desired to preserve the vitality of seed for a longer period than two years, it is necessary to keep it in airtight receptacles. In addition to age, due regard must be had to soil, season, and other circumstances.—C. W. M.

(To be continued.)

HARDY FRUIT GARDEN.

Destroying American Blight.—The white cottony substance now evident on Apple trees infested with this pest encloses the living insects which work so much damage to the stems, branches, and young shoots Persistent effort is required in order to exterminate the pest. Its presence now being easily detected, it is a suitable time to go over the trees and endeavour to destroy as many of the insects as possible. They are very active now, and most probably increasing rapidly before resting for the winter, during which time they are very inconspicuous; but the damage committed remains visible in the form of excrescences and swellings round the wounds or cracks. It is there that the insects secrete themselves.

Dress the trees only at the parts infested, using methylated spirit or petroleum. Dip an old half-worn painter's brush in the oil, shaking it partly dry so that the oil does not run down the bark when applied. Brush well into the crevices so as to reach as many insects as possible. Slender shoots in the upper parts of trees infested with blight may be cleansed to a great extent by forcibly applying water from a garden engine. In the winter a petroleum and softsoap emulsion may be applied as a dressing in a more thorough manner than can be safely carried out now.

Protecting Ripening Fruit.—*Trapping Earwigs.*—Peaches and Nectarines ripening on walls are liable to attacks from earwigs, which soon disfigure the fruit. Traps should be laid for them, and these may consist of lengths of Broad Bean stalks about 9 inches long. Lay them between the branches in the vicinity of the fruits. Examine them every day, blowing out the insects and destroying them.

Wasps.—It is necessary to guard choice fruits against wasps. Where the number is limited, and the size and quality of the fruits are worth it, each may be protected in the safest manner by enclosing in a muslin bag, tying securely. The next best method is to enclose the whole tree with netting of fine mesh or thin tiffany. Wide-necked bottles of beer, sugar, and water hung among the branches will attract both wasps and flies. Wasp nests may be destroyed by pouring tar down the holes. Another remedy is to thoroughly saturate a piece of rag with strong turpentine, attach it to the end of a stick, and thrust into the hole, which should be closed with a heavy lump of turf.

Woodlice.—These insects are partial to ripe fruit. They lodge in holes in the walls, and are encouraged by the presence of rubbish or dead leaves. Prevent all accumulation of such, also maintain the ground at the base of walls moist, which is a deterrent.

Netting Small Fruit.—To preserve ripe fruit of Gooseberries, Currants, and Morello Cherries as long as possible the trees must be netted over for preventing the access of birds. In wet weather the trees ought also to be protected from rain.

Gathering Early Fruit.—Keswick Codlin, Hawthornden, and Duchess of Oldenburg Apples may be gathered and stored carefully in cool quarters. Any fruits that do not part readily from the trees when lifted should be left a little longer. Citron des Carmes, Green Chisel, and Williams' Bon Chrêtien Pears require gathering immediately they can be easily detached from the spurs. By keeping them in a cool, dark place for a week they finish well and are of good flavour. If allowed to ripen on the trees they are frequently mealy, and consequently not properly appreciated, as it otherwise would have been.

Fallen fruit must be gathered up daily, utilising the soundest for immediate use, destroying the half decayed. These fruits are usually infested with the Codlin moth grub, which is the cause of their falling in calm weather. Grub-eaten and bruised fruit will not keep. In utilising them it is necessary to remove the infested parts only, and the other portions will be found perfectly wholesome.

Raspberries.—The canes which have borne fruit this season ought now to be cut down, as well as the weakest of the present year's growths. Leave four to six of the stronger canes to each stool for next season's fruit bearing. By the removal of superfluous material now the growths retained have every opportunity of receiving the full benefit of light and plenty of air, which will accelerate their ripening. The firmer, harder, and browner in colour the canes become, the better they are for producing fruit.

When grown in lines, a little thinning out may be necessary, dispensing with the weaker. Sufficient growths must be left to furnish the wires or trellis when trained in. Suckers springing up at a distance from the main crowns dig out, unless wanted to increase stock. The best of them may then be left until planting time in late autumn, just as the leaves are falling.

After pruning in the above manner, fork up the strong weeds, and hoe down the smaller. Loosen and break up with a fork hard trodden portions of ground, but avoid digging near the stools, which destroys the fibrous roots. A dressing of rich manure laid on the surface will have its nutriment gradually washed into the soil by the rains. It will also act beneficially in multiplying the fibrous roots and attracting them to the surface, where every endeavour should be made to retain them by giving attention of this nature each year.

FRUIT FORCING.

Vines.—*Early Forced Vines in Pots.*—These for starting in November must not be allowed to become dust dry at the roots; let the soil be kept moderately moist; but, on the other hand, excessive moisture is most inimical, as it causes the tender rootlets to decay, and the buds start very indifferently in consequence. The Vines will now be at rest, the wood ripe, the laterals cut close home, and the canes shortened to about 6 feet, more or less, according to the situation of the plump eyes. Whilst the cuts are dry dress them with styptic or patent knotting to prevent trouble from bleeding. They should be kept in a cool airy house.

Earliest Forced House.—It is not necessary to wait until all the leaves have fallen before pruning matured Vines for early forcing, but the wood must be brown and hard, and the leaves turning yellow. The pruning will cause the Vines to rest quickly and thoroughly. If in good condition they will afford bunches quite large enough when pruned to a couple of buds of the base; but if the Vines are weak from overcropping or a long course of forcing, the spur shoots may be left a little longer with a view to large bunches. When this method is adopted take shoots from as near the base as possible when growth commences. These should not be allowed to carry any fruit, but be stopped at about the sixth leaf, and the laterals at the first leaf, and subsequently as produced. Such shoots are sure to form good buds; the extra foliage will tend to invigorate and support the fruit on the other shoot, which can be cut away in due time in favour of the one for fruiting the following season. This alternate system of fruiting neeessitates keeping the shoots further apart for development and exposure to light and air. If the Vines are grown on the extension system it will only be necessary to cut back to plump buds on well-ripened wood, being guided by the space at command, for there must be no overcrowding. It is important that the Vines be thoroughly cleansed, and the house also. The woodwork should be washed with softsoapy water and a brush, the glass with clear water, limewashing the walls, placing a handful of flowers of sulphur in each pailful of water.

Wash the Vines by means of a brush with sulphate of iron, 1 lb. to 1½ gallon of water. It is good against most fungoid enemies of the Vine. Any weakly Vines, or those in an unsatisfactory state, may be improved by removing the soil down to the roots, and substituting fresh loam with a sixth part of old mortar rubbish, a fifth of sweetened horse droppings, and about a stone (14 lbs.) of crushed bones to each cartload of loam. Lift any roots available for the purpose, laying them out upon the fresh compost, and cover them about 3 inches deep. If long and bare of fibres they may be notched on the under side at about 18 inches distance apart, so as to induce the emission of fibres. This is best done over the whole extent of border before the leaves fall. It is a mistake to allow Vines to become very dry at the roots. Comparative dryness is desirable, yet great injury is done by allowing the soil to become dust dry. Where old lights are at command they may be used for throwing off heavy rains from outside borders, otherwise do not use any covering for the present.

Young Vines.—Those that have made strong growths, and are late in ripening, should be assisted with fire heat, maintaining a minimum of 65°, and a maximum of 75° by those means, continuing it until the wood is ripe, accompanied with free top and front ventilation. Discourage any further growth by keeping the laterals well in hand, removing them as they appear, but be careful not to cause the principal buds to be forced into growth by too close stopping.

Late Grapes.—These are now colouring and ripening rapidly, but many are a long way from being properly finished, which, in almost all cases, is due to the late starting of the Vines. Late Grapes require a long time to perfect, hence there is nothing like letting them have August and early September for this purpose, as then the days are generally bright and the nights comparatively cool, so that the Vines get rest more or less, and thus finish heavier crops than it is possible to perfect earlier in the season. Keep the laterals well thinned, letting the main leaves have plenty of light, but a little lateral extension where it does not interfere with that favours root action and better supplies of nourishment. A good spread of foliage over black Grapes is an advantage, especially Hamburghs, but Muscat of Alexandria colours better with the light shining between the laterals, and similar remarks apply to white Grapes generally. Direct exposure to powerful sun, however, is not advisable, as these Grapes are somewhat liable to become brown when the sun acts powerfully upon them whilst wet or covered with an imperceptible dew. Avoid large reductions of foliage at a time, as this gives a sudden check, and may result in shanking, or even prejudice the ripening process, but attend to them frequently for pinching. Maintain a night temperature of 70° to 75°, falling 5° to 10° during the night, increasing to 80° to 85° by day, up to 90° in the afternoon, accompanied with a free circulation of air in the early part of the day, and a moderate amount day and night—always enough to insure a circulation.

Make the most of the next month or six weeks in case of Grapes that are late in ripening, for when the days are short ventilation cannot freely be practised, and unless Grapes have a moderate amount of air moisture when ripening they do not swell freely but are liable to shrivel, particularly Muscats, and it is not the moisture that causes Grapes to crack and spot, but the confined atmosphere—moisture condensed preventing evaporation from the surface of the fruit. Grapes well advanced in ripening may have the atmospheric moisture reduced; those only colouring should have only a moderate amount of moisture to assist their swelling, not neglecting to apply water to the roots, but it will hardly be further needed by outside borders, whilst it must be given to inside borders as required.

When the Vines are heavily cropped, and not colouring so well as desired, the Grapes should be given time, not pinching them for due supplies of nourishment, and not very closely restricting the laterals, though there are few of these when the crops are heavy; but some superphosphate and nitrate of potash (two parts the first to one part of the latter) act well, using 3 to 4 ozs. per square yard, and washing in moderately. Let the night fall to 60°, or even lower; but use fire heat in the daytime so as to maintain a temperature of 70° to 75°, and even at night allow a little air, so that when the sun falls upon the house in the morning the atmosphere will move and the Grapes warm equally with it, thus avoiding deposition of moisture on the berries. This is serviceable; but the thing is to feed earlier, and get material into the Vines and Grapes for changing at the proper time into jet black or golden amber colour, keeping free from red spider and not overburdening the Vines.

Pines.—*Potting Rooted Suckers.*—Suckers obtained from the summer fruiting plants will soon be ready for potting. It is well to divide the plants. The strongest should be shifted into their largest pots as soon as ready, employing 10 or 11-inch pots, according to the variety, affording them a position near the glass in a light, airy house, keeping the plants gently moving during the winter. Those so started will be readily excited into fruit next May or June, and will afford a good successional supply of fruit in late summer or autumn. In other plants suckers from the summer fruiters not large enough to shift into the fruiting pots winter best in 7 or 8-inch pots, transferring them to larger as soon as ready in spring; which, with suckers of Smooth-leaved Cayenne that were started last March, will afford a successional supply of Pines through the winter months.

Re-arranging Pine Plants.—A re-arrangement of the plants should now be made in order to separate the fruiting from the non-fruiting plants, as many of those that were started from suckers of last summer's fruiting plants will have fruit swelling. Those plants not fruiting will have completed their growth, and should have air very liberally for the next six weeks, when the temperature exceeds 80°, maintaining the bottom heat steady at 80°, and all plants well established—that is, well rooted, should have a bottom heat of 80° to 85°, but recently potted suckers, or those which have not roots well established in fresh compost, should have a bottom heat of 90°, steadily maintained to insure speedy rooting.

Fruiting Plants.—Those swelling off their fruits should have moderate atmosphere, but not a large amount, or it may enlarge the crowns unduly, and excess at the roots causes the fruit to become black at the centre. Admit a little air at the top of the house early in the morning, so as to allow of any superfluous moisture escaping before the sun's rays act powerfully upon the fruit. Any fruit it is desired to retard should, when fairly coloured, be removed to a rather shady house, admitting abundance of air.

THE BEE-KEEPER.

FEEDING BEES.

It is beneficial to the bees to be supplied with their winter stores as early as possible in the autumn. In fact the closer we imitate Nature in this respect the better it will be for the welfare of the bees in the future. In their natural state, directly a surplus of honey is obtained, it is stored in their combs and sealed over. It may be in the spring, when the honey is obtained from the early fruit tree blossoms, or at midsummer from the White Clover, or in the autumn from the Heather. But from whatever source it is obtained, the bees, if not interfered with, will seal it over directly it is in a fit condition.

Honey treated in this manner will keep in good condition for several years. In feeding bees artificially, I have proved how beneficial it is to have all stocks fed up as early as possible in August. If feeding is delayed till after the middle of September, and a cold spell of wet weather sets in, although the bees may store the syrup provided for them, they will not seal it over, and this is often the cause of dysentery. Bees which are left to take their chance in some hollow tree, or in the roof of an old building, I have observed, are seldom found to have this disease.

It is advisable to examine all stocks before placing the feeders on them, as some will probably require more than others. Usually those that have been used for extracting purposes, require more feeding than those worked for comb honey. The reason for this is, that whilst extracting is going on, the bees, in their anxiety to fill the supers, are constantly carrying the honey from the brood nest for that purpose; whereas with sections of comb honey, they are allowed to remain on the hive till well finished, and unless closely watched the bees become short of storage room in the supers. The honey is then stored and sealed over in the outside combs of the brood nest. It is then allowed to remain, and there is often sufficient in such hives to provide ample stores for a strong colony until the following spring.

MAKING SYRUP.

Syrup for autumn feeding should be made of the consistency of good honey. If made thin, such as is recommended for spring feeding,

it would be too watery, and a great amount of moisture would have to be evaporated before being in the right condition for sealing over. Syrup for autumn feeding is best made in the proportion of 7 lbs. of sugar to 3 pints of water. This should be placed over a clear fire and kept constantly stirred until it boils. It should then be taken off, and will be ready for use as soon as cool enough.

During the boiling process add a little vinegar and salt. The former will prevent the sugar candying, which it is liable to do if kept for any length of time before being used, or if it has been boiled too long. The plan which I practise, and which I recommend to bee-keepers who have numerous colonies of bees, is to place 2 cwt. of sugar in a large copper and boil it all at once. This is a great saving of labour, and the syrup is quite as good as when boiled in smaller quantities.

Pure cane sugar should always be used. In my apiary I always use the best granulated; bees invariably winter well on it. Beet sugar is sometimes substituted for the above; but by dealing with a house of good repute the various sugars may be depended on. The vessel from which the syrup made from cane sugar has been poured will not contain any sediment, which is not the case when Beet sugar has been used, as there is often a blue sediment left after the syrup has been poured off, and when such is found steps should be taken to obtain the sugar from another source.

QUANTITIES OF STORES REQUIRED.

Opinions differ somewhat as to the amount of stores necessary to carry a strong colony safely through the winter. There is, however, a vast difference in the number of bees contained in the various colonies, and it is only fair to assume that the greater the number of bees the more stores will there be required. But in actual practice I have found that in an extra strong colony the bees have not consumed any more stores than one of ordinary strength, the extra number of bees keeping up the warmth of the hive, so that less food was required.

Some bee-keepers are successful in wintering a small number of bees on four or five standard frames, or in small straw skeps. In that case much less stores are required. A strong colony should have at least 20 lbs. of stores, but 28 lbs. would be an advantage, as it is better to err on the safe side, and provide too much than too little. Bees should be fed in the evening when all is quiet in the apiary, as robbing is very prevalent at this season.

FEEDERS.

A good feeder is a necessity for autumn feeding. For spring feeding an inverted bottle, or a small feeder of any description holding 1 lb. of syrup, will answer the purpose admirably. But for autumn feeding it is much better to have a rapid feeder, so that a strong colony may be given the required quantity of syrup in a short space of time. For this purpose I have found nothing better than the Canadian feeder. This is very simple in construction, being made of a number of slats of wood, which are fixed into a frame, and then placed in a tin-lined box. The bees gain access to the food through openings on each side underneath, and are prevented from escaping by a wooden lid. This may be slipped along when a further supply of food is necessary, which may be poured into the receiver at the end without inconvenience to the bees. They may be made of any size, but those holding 12 lbs. of syrup I have found the most useful. The Canadian feeder may be obtained from Messrs. Geo. Neighbour and Sons, 127, High Holborn, London, or from any dealers in bee appliances who advertise in the *Journal of Horticulture*.—An English Bee-keeper.

TRADE CATALOGUES RECEIVED.

W. Bull, King's Road, Chelsea.—*Bulbs.*
Heathman, 2, Endell Street, London.—*Ladders and Appliances.*
J. Laing & Sons, Forest Hill.—*Bulbs.*
J. R. Pearson & Sons, Chilwell, Notts.—*Bulbs.*
M. Rains & Co., 34, Mansell Street, Aldgate, E.C.—*Bulbs.*
William Sydenham, Tamworth.—*Pansies and Violas.*
Robert Sydenham, Tenby Street, Birmingham.—*Bulbs.*
A. F. Upstone, Market Place, Rotherham.—*Bulbs.*
E. Webb & Son, Wordsley, Stourbridge.—*Bulbs.*

—— Tropical Botanical Station.—There seems some probability that Jamaica may be selected by the American Commission for the site of the proposed Tropical Botanical Station. Profs. MacDougal and Campbell have restricted themselves in their tour of investigation to that island, and have expressed themselves as well satisfied with the conditions of the rich and varied vegetation there found. The Director of the Botanical Department, Mr. W. Fawcett, is prepared to render every assistance in the furtherance of the object.—("Nature.")

TO CORRESPONDENTS

*** All correspondence relating to editorial matters should, until further notice, be directed to "The Editor," 8, *Rose Hill Road, Wandsworth, London, S.W.* It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor.

Moving Seedling Briars Budded in July (*An Amateur*).—It is hardly safe to move them until the latter part of September, and only then if the weather be moist, keeping them out of the ground as short a time as possible. We have, however, moved similar plants at the middle of the month, and by watering and shading for a few days had an excellent result. Of course, the early part of November is the better time, but under the circumstances we should not hesitate to move them, lifting carefully, during the first moist weather in next month.

Insects on Stems of Cucumber Plants (*H. W. P.*).—The "insects" are members of the scorpion family (Scorpionidæ), and belong to the sub-family of false scorpions (pseudo-Scorpiones). It is Chelifer Geoffroyi and perfectly harmless to vegetation, indeed it lives on mites and young woodlice, being very useful in keeping down root-mite (Rhizoglyphus echinopus), a common cause of Cucumber plants, becoming sickly and even dying off, as the saying is, without cause. For this pest use soluble phenyle, 1 part in 96 parts soft water, or 1 gill ($\frac{1}{4}$ pint) to 3 gallons of water, applying as in an ordinary watering.

Pear Leaves and Insects (*G. S.*).—The leaves are eaten by the larvæ or caterpillars, commonly called slug worms, of the Pear sawfly (Selandria atra). Dust the tree on the upper side of the foliage with freshly burned lime, using no more water in slaking than necessary to cause it to fall to a fine and apparently dry powder, using when cool. The creatures may throw off the first coating of the lime, like a slug; but if repeated in about half an hour the second dressing burns them without any injury to the foliage. This old-fashioned dressing is better than dusting the leaves with tobacco or hellebore powder, as there is nothing in it to interfere with the use of the fruit; but the others are very objectionable, though efficacious, when there is any fruit ripening, or near thereto, as unless washed off by rain it is not useable. Similar remarks apply to soluble petroleum in solution, also tobacco water; otherwise these are very effectual. We, however, advise the lime.

Apple Harvey's Wiltshire Defiance (*W. E.*).—This very fine culinary Apple is described in the "Fruit Manual" as handsomely shaped, but having five angles descending from the apex till they are lost in the base. These angles are more acute in some fruits than others. In yours they are somewhat obscure. When the fruit is ripe it is described as a deep sulphur yellow covered all over with minute russety dots, with here and there ramifying patches of russet. Eye pretty large and open, with short ragged segments, set in a rather angular shallow basin. Stalk short, not extending beyond the base, and inserted in a round deep cavity, lined with rough scaly russet. The core is also described as very small for the size of the fruit, stamens median, and tube conical. You will perceive how closely your fruit agrees with those characteristics. We suspect there is another Wiltshire Defiance, the tree being less productive than Harvey's, and the fruits, though large, less handsome. We have occasionally seen very fine dishes of Harvey's Wiltshire Defiance exhibited by Messrs. Veitch & Sons. We have also observed trees in some Kentish fruit gardens pictures of beauty when laden with symmetrical, handsome fruits.

Large Peach (*J. F. Simpson*). — The variety, of which you send samples, is not the Alexandra Noblesse, the flesh of which is pale at the stone, while that of Barrington is tinged with red. The difference between the two fruits in colour shows the influence of light and shade as affecting the appearance of Peaches. The "small" fruit, weighing nearly half a pound, is well coloured; the other, weighing 14 ozs., being almost colourless. A tree, planted five years, and perfecting ninety such fruits, has done its duty well, as you have yours in the cultural attention accorded. It is a difficult matter to name Peaches from the fruits alone, leaves and flowers being important factors to consider. We incline rather strongly to the opinion that your Peach is Sea Eagle, which is one of the finest late varieties in cultivation. The fruits are very large, and colour well by exposure, but are otherwise pale, but rarely destitute of colour. Dr. Hogg, in the "Fruit Manual," as you may see if you have access to that valuable work, describes the flesh of Sea Eagle as deeply stained with red next the stone, the colour extending nearly through the fruit. This is so in the specimens you have sent, and it is this feature mainly (in combination with others) that suggests to us the name of the variety.

Lime for Vine Border (*Vitis Vinifera*).—A fair dressing of fresh lime to use per square yard on a Vine border which has been well fed for some years is 2¼ lbs. It must be the best chalk lime, freshly burned, and slaked with the smallest amount of water necessary to cause it to fall to a fine powder. We, however, prefer air-slaked, as it is less caustic, and less liable to form chloride of lime where chlorine exists largely in the soil. It is best applied in the autumn, or when the Grapes are cut, and if used freshly slaked allow to lie on the surface some time before pointing into the soil; indeed, you may leave it till pruning time, or a short time before the Vines start into growth. We find the most benefit from using about equal parts of air-slaked lime and soot by measure, and applying 1 lb. per square yard immediately after mixing in each year at the time of pruning, and at once pointing in lightly, or using 1 lb. of air-slaked lime alone every other or third year. This is better than heavy dressings, except for special purposes, at distant intervals.

Apples, Pears and Plums at High Elevation (*T. B. C.*).—We suppose you mean growing the fruits named exclusively in the open air without the protection of or against walls, which, of course, implies the setting aside of the varieties that require such aid to arrive at perfection, and confining the culture to the ordinary plantation or hardier sorts. These do well at high elevations, selection being made of the most approved for general purposes, and affording the needful shelter from exposed points by breaks of the very hardy kinds or even of forest trees. The fruits grown in such elevated places are generally of high colour and the crops regular, as the situation insures late blossoming and more immunity from the effects of fogs and late spring frosts. You cannot, however, expect fruit at such elevation (700 feet) to be equal to that grown at a lower one, but with shelter, if any be needed, for that depends on aspect and local circumstances, good fruit may be grown, especially as the soil is suitable.

Cause of Fungi on Tomato Leaves (*Anxious*). — We do not know what is the precise cause of fungi attacking your Tomato leaves, but that it attacks some plants more successfully than others is certain. You say "the ventilators have been open both night and day in favourable weather," and that the house is a cool one. It would be hot enough a few weeks ago. We do not know whether the plants were attacked then or only since the weather changed. We do not think the added loam and manure brought it into operation. We can tell what the attacking fungus is—namely, Cladosporium fulvum. If you had dusted the plants early and occasionally with any of the advertised fungicides in powder containing 10 per cent. of sulphate of copper, such as antiblight or fostite, you would not have had such a bad case. The powder is best applied with a bellows apparatus, just coating the leaves with the finest possible film, and on every part, under as well as upper side. Repeat at intervals of about ten days, and as necessary afterwards, then the parasite will disappear, and the Tomato plants flourish, not otherwise. They are in a sorry plight, and the worst infested leaves should be promptly removed and burnt.

Burning Clay (*W. W.*).—The best way to burn clay for garden purposes is to form a stack of firewood 5 feet in diameter at the base, and tapering upward to a point at a height of 5 feet, beginning with a few dry faggots in the centre. All round this lay a coating of the clay in lumps to a depth of 1 foot, then set fire to the wood in the centre, and long ere the wood is consumed the clay will be burned through, when add another layer of clay all round, and this will soon be burned through also. The fire is then broken down with a strong iron-handled hoe for the purpose of adding more wood and enlarging the base of operations, placing the largest wood on the hot clay, and finishing off the layer with the smallest to prevent the clay lying too close, and on that a layer of clay all over and around. When the clay is burned through add another layer without any wood, and this being burned another can be added, after which it may be necessary to rake down the heap, add more wood as before, and cover with clay, two or three layers being used before it will be necessary to add more wood, as the fire will have great heat. Thus you may burn the clay, securing a very valuable material on account of the wood ashes and the altered character of the clay, which will fall into small parts or can be easily broken up. The substance suits nearly all kinds of fruit and vegetable crops, being mixed with the ordinary soil in the proportion of about one-third.

Names of Fruits. — *Notice.* — We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. *In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing.* The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. *They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state.* (*E. K.*).—London Pippin. (*W. E.*).—Harvey's Wiltshire Defiance (see above). (*G.*).—1, Peasgood's Nonesuch; 2, Warner's King; 3, Potts' Seedling. The Pear is Beurré Hardy.

COVENT GARDEN MARKET.—August 25th.

FRUIT.

	s. d.	s. d.
Apples, ½ sieve	1 0	to 3 0
Filberts, 100 lbs.	22 6	28 0
Grapes, lb.	0 8	2 0
Lemons, case	11 0	to 14 0
St. Michael's Pines, each	3 0	8 0

VEGETABLES.

	s. d.	s. d.
Asparagus, per 100	0 0	to 0 0
Beans, ½ sieve	0 0	0 0
Beet, Red, doz	1 0	0 0
Carrots, bunch	0 3	0 4
Cauliflowers, doz.	2 0	3 0
Celery, bundle	1 0	0 0
Coleworts, doz. bnchs.	2 0	4 0
Cucumbers	0 4	0 8
Endive, doz.	1 3	1 6
Herbs, bunch	0 3	0 0
Leeks, bunch	0 2	0 0
Lettuce, doz.	1 3	0 0
Mushrooms, lb.	0 6	0 8
Mustard and Cress, punnet	0 2	to 0 4
Onions, bushel	3 6	4 0
Parsley, doz. bnchs	2 0	3 0
Parsnips, doz	1 0	0 0
Potatoes, cwt.	2 0	4 0
Salsafy, bundle	1 0	0 0
Seakale, basket	1 6	1 9
Scorzonera, bundle	1 6	0 0
Shallots, lb.	0 3	0 0
Spinach, pad	0 0	0 4
Sprouts, ½ sieve	1 6	1 9
Tomatoes, lb.	0 4	0 0
Turnips, bunch	0 3	0 0

PLANTS IN POTS.

	s. d.	s. d.
Arbor Vitæ, var. doz.	6 0	to 36 0
Aspidistra, doz.	18 0	36 0
Aspidistra, specimen	5 0	10 6
Campanula, per doz.	4 0	9 0
Coleus, doz.	2 6	4 0
Dracæna, var., doz.	12 0	30 0
Dracæna, viridis, doz.	9 0	18 0
Euonymus, var., dozen	6 0	18 0
Evergreens, var., doz.	4 0	18 0
Ferns, var., doz.	4 0	18 0
Ferns, small, 100	4 0	6 0
Ficus elastica, each	1 0	7 0
Foliage plants, var., each	1 0	5 0
Fuchsias, doz.	3 0	to 5 0
Heliotropes, per doz.	3 0	5 0
Hydrangeas, doz.	8 0	10 0
Lilium Harrisi, doz.	12 0	18 0
Lycopodiums, doz.	3 0	4 0
Marguerite Daisy, doz.	4 0	9 0
Mignonette, doz.	4 0	6 0
Myrtles, doz.	6 0	9 0
Palms, in var., each	1 0	15 0
,, specimens	21 0	63 0
Pelargoniums, doz.	8 0	9 0
,, Scarlet, doz.	2 0	4 0
Rhodanthe, doz.	4 0	6 0

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety

	s. d.	s. d.
Arum Lilies, 12 blooms	2 0	to 4 0
Asparagus Fern, bunch	2 0	3 6
Asters (French) per buch.	0 6	1 0
Bouvardias, bunch	0 4	0 6
Carnations, 12 blooms	1 0	3 0
,, doz. bnchs.	3 0	6 0
Cornflower, doz. bnchs.	1 0	2 0
Eucharis, doz.	2 0	3 0
Gardenias, doz.	2 0	4 0
Geranium, scarlet, doz. bnchs.	3 0	4 0
Gladioli, doz. bnchs.	4 0	8 0
Lavender, doz. buchs.	6 0	8 0
Lilium longiflorum, 12 blooms	2 0	4 0
Lily of the Valley, 12 sprays	1 0	2 0
Marguerites, 12 bnchs.	2 0	to 3 0
Maidenhair Fern, doz. bnchs.	4 0	8 0
Mignonette, doz. bnchs.	2 0	4 0
Orchids, var. doz. blooms.	1 6	12 0
Pelargoniums, 12 bnchs.	4 0	6 0
Pyrethrum, doz. bnchs	1 6	3 0
Roses (indoor), doz.	0 6	1 0
,, Tea, white, doz.	1 0	2 0
,, Yellow, doz. (Niels)	1 6	4 0
,, Red, doz. blooms	1 0	2 0
,, Safrano (English) doz.	1 0	2 0
,, Pink, doz.	1 0	2 6
,, outdoor, doz. bnchs.	2 0	6 0
Smilax, bunch	2 0	3 6
Tuberoses, 12 blooms	0 3	0 4

THE JOY IN HARVEST.

Man's first ideas, his first wants, are material; indeed, a good many of us never really rise far above the material. It is so hard to find meat and drink, clothes and shelter, that in the pursuit of these necessaries all our energies are absorbed. Every year the struggle gets harder; or is it that our wants get more? We are not contented with what satisfied our pre-elders; we look for luxury where they only expected comfort, and very plain comfort at that.

Still there are yet certain things that we require, and that they required—standard articles of diet which have known no change since time and man began. Man certainly does not live by bread alone, but without it he would be a poor creature. Englishmen are found in all climes, from the Arctic Ocean to the torrid zones of Africa, and though he will accommodate himself to the most primitive forms of living, yet he always has an innate craving for a glass of Bass or Allsopp, a crust of home-baked and a slice off the joint, beef preferred. Flour of the Wheat enters so largely into all our living—perhaps because it is easy of manipulation, perhaps because it is bulky and fills up the corners and chinks. At any rate, we insist on its constant presence on our tables, and there is a great outcry if ever in a remote district we are relegated to oatcake or rye bread as a substitute.

Years ago as a nation we were dependent on ourselves, we were more self-supplying; if through any cause our harvest was deficient in quality or quantity we had to make the best of it, and do as well as we could. The corn crop was the principal crop; its well-being of the most vivid importance alike to the rich man in his palace and the poor man in his cot. A bad English harvest meant a year of indifferent food and of great deprivation. It is only a few of us grey beards who can remember the dark, damp, sticky compound that, after a wet harvest, went by the name of bread. How numberless were the recipes for making a sound loaf out of unsound flour. A skilful housewife with the addition of ricemeal, a little milk, and potato could turn out something fairly eatable; the less said about the loaf of the novice the better. Fancy what this bread was for the invalid or young child; the strong and healthy might make a shift, but to the weaklings it meant a sore privation.

There was a custom in our parish years ago of holding an early, very early, service in the church the first day of harvest to ask for a blessing on the ingathering of the crop, and to offer petitions for favourable weather. How could harvest begin under better auspices? It was a following out of the old Jewish feast of "first fruits." In the Wheat-growing districts you see field after field of golden grain level as a plain, and a man must be very callous whose heart is not uplifted by such a sight in thanksgiving.

What preparation there is before harvest fairly begins! Many weeks before the master and foreman hold anxious consultations as to the number of outside hands that will be required, and the various men are passed in strict review. As one diseased member will affect a whole community, so one careless, or idle, or bad tempered man will upset the equanimity of the whole gang of workers. "No, Tim, you'll not do for me this harvest; you'll never be suited with the beer I find, and we don't want a quarrel in the throng of work." And a slow man sets the pace, and hinders and vexes the quicker workers.

All reapers are carefully inspected, duplicate parts are provided, the horses who have had a season of rest since Turnip time are in the best of "fettle;" the children are set free from the bondage of school, and those who are too young to be bandmakers are still old enough to take out dinners and "'ilowance" or "drinkings." Time was when no harvest was complete without some sons of Erin. Punctually as harvest drew on they appeared in their wonted haunts. A bed of straw in the barn, milk and food from the farmhouse kitchen gave them some insight into English living. The best Irish only came, and if they could desist from fighting and an overplus of beer, made the most excellent of workers. Usually a little "opening out" is done before actual harvest begins, then all hands to the work—master and a lad shepherd. The pony of the missus goes ungroomed, and she takes upon herself all the necessary watering and odd jobs of the garden. The days are all too short for the work there is to do, for in this changeable clime we know not from day to day how the weather may be, and it behoves us to make the best of the sunny hours.

It is not all toil even in the harvest field; there are the pleasant meals behind the stooks, when the children, or possibly the wife and baby, participate with the father in the good things contained in the dinner-basket.

An effort is always made to get "father" some tasty nourishing food, for this month at least. Possibly our south country labourers would be surprised if they saw how excellent is the food all the year round found on the tables of the northern farm labourers. Wages are perhaps better, and certainly food is cheap. It is a pleasant sight to see the father, sat under a stook with his little ones intent on helping him out with the liberal allowance of food mother has sent.

What a comfort it is to see loading fairly begun, and with what energy all work! Never mind daylight going, if there is a good harvest moon it makes a substitute for the sun. A wise foreman will see that the last waggons that have come in in the dark are carefully covered over, to be ready for an early morning start. If a master's eye is necessary in the reaping field, it is ten times more necessary when leading begins. Corn in the same field varies so much, and it is sorry look-out at threshing day if all good, bad, and indifferent have been stacked together. Nothing is much more difficult to deal with than Barley which is full of rank green Clover. The Barley is fit long before the Clover loses its nature, and unless the weather be very fine such corn is a great trial of patience.

"Festina lente—hasten slowly," is a proverb that may well be borne in mind. Nothing is so provoking as heated stacks, and nothing may be more easily avoided. Corn crops are often very deceptive. It is not always that the greatest weight of straw proves the fullest of grain. A fair guess may be arrived at as to yield by the way a sheaf "dips" when lifted up by a fork. We do not like to see it reach the waggon nearly level, and we like, too, to see a fair sprinkling of grain on the waggon body.

What a time for the poultry in the stackyard! what feasting they have by the stack sides! It is an old axiom that no ducks are really good till they have tasted new corn; certainly they manage to put flesh on then. The fields are bare save for bands of busy gleaners, who sweeten their toil with the luscious bramble. The sheep follow apace to pick up stray ears and weeds and hedge-side grass, the plough has turned its even furrow, and the land is again ready for the sower's hand.

WORK ON THE HOME FARM.

Harvest in full swing, and we are longing for rain; of such are the vicissitudes of the farmer's life made up! We have had a few slight showers, but nothing to do material good. Turnips and Potatoes preserve their green appearance; but unless we have copious rainfall before the end of the month these crops must, comparatively speaking, be a failure.

Harvest is progressing well; the later crops have ripened quickly, and have had to wait for the reaper. Fortunately, there has been little wind until to-day, and nearly all is cut down. The gale has shaken out a few grains in a backward piece of Wheat, but nothing worth speaking of. Stooks have been blown in all directions, and men have found tying a work of great difficulty, as also have the difficulties of stacking been great. We should have been very thankful for the wind after a heavy rain, but just now the corn is dry enough, and such a gale as this could well be dispensed with. What a blessing such an one would have been last September.

Wheats are bulking up rather light, and Barley is decidedly the straw crop of the year. As to yield of grain, however, we expect the threshing machine to give the verdict to the Wheat. Barley straw, like that of Wheat, is very yellow and bright, and will make good fodder if well saved. There is very little Clover in the sheaves this year. This is in favour of good harvesting, but against the straw as food.

The young seeds have stood the drought better than we expected, and are not only a full plant, but look fairly lively under difficulties. This is a very satisfactory feature of this dry season, for from such a year we often have a legacy of deficiency in the young seeds which is not fully realised until the full course of four years has been run.

Streams are dried up, but springs stand well, and there is no scarcity of water. Should no rain fall at present there is little prospect of the land working after harvest; the hands not employed in thatching could then be well employed in cleansing water courses not usually dry in ordinary seasons.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.
Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

DATE.	9 A.M.					IN THE DAY.				
1897.	Barometer at 32° and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature.		Radiation Temperature		Rain.
August.		Dry.	Wet.			Max.	Min.	In Sun.	On Grass.	
	Inchs.	deg.	deg.		deg	deg.	deg	deg.	deg	Inchs.
Sunday .. . 15	29·855	66·7	59·8	N.E.	64·7	68·9	55·2	101·6	49·3	0·042
Monday 16	29·901	63 4	58·3	W.	63·1	73·9	51·8	126·6	48·0	—
Tuesday 17	29·808	65·2	59·9	W.	63·9	71·1	56·9	103 4	51·2	—
Wednesday 18	29·708	65 4	59·8	W.	63·7	73·8	55·9	117·9	49·9	0·377
Thursday .. 19	29·799	60·8	56·2	N.	62·9	70·7	54·0	119 6	49 7	0·010
Friday 20	29·724	62·1	58·6	S.W.	62·3	69 7	53 8	98·3	48·2	0·093
Saturday .. 21	29·559	61·4	57·9	W.	62·2	71·7	59 3	122·6	55·1	—
.	29·765	63 6	58·6		63 3	71 4	55·3	112 9	50·2	0·522

REMARKS.

15th.—Bright early; cloudy morning; frequent rain after 1.30 P.M.
16th.—Breezy and pleasant, but cloudy at times.
17th.—Overcast morning, with frequent drizzle; sunny at times in afternoon.
18th.—Frequently sunny, but spots of rain now and again, till 3 P.M., then generally rainy, and heavy rain, with thunder at 4.30 P.M.
19th.—Steady rain from 4 A.M. to 6 A.M.; generally sunny after 7 A.M., but a slight shower at 3 P.M; bright night.
20th.—Overcast, with occasional slight showers, and rain from 9.15 A.M. to 10.15 A.M.
21st.—Sunshine and showers in morning; bright afternoon; high wind throughout.
An unsettled week, with temperature very near the average.—G. J. SYMONS.

Journal of Horticulture.
THURSDAY, SEPTEMBER 2, 1897.

THE JOURNAL OF HORTICULTURE *can be obtained from the Office,* 171, *Fleet Street, London, post free for a Quarter,* 3*s.* 9*d. Editorial communications must be addressed to* 8, *Rose Hill Road, Wandsworth*

NOTES ON CURRANTS.

THE usefulness of Red and Black Currants amongst small fruits in gardens cannot be over-estimated ; they are also of considerable importance to the market grower, as they are in general demand for preserving purposes. Under suitable culture both kinds yield a good return for the space they occupy and the labour required, as they do not impose any severe demands upon either. They can be purchased cheaply at the nurseries, or they can be easily propagated if that system is desired. It is a question of time and convenience which course should be taken for obtaining a stock to commence with. For gardens it is unquestionably more suitable generally to buy the plants properly prepared at a nursery, and it is surprising what excellent little three-year-old bushes are supplied at 3s. or 4s. per dozen when a moderate quantity is required. For large numbers £1 per 100 will procure as good plants as can be desired ; therefore it is not worth while to go to the trouble of increasing stock in gardens where space is restricted and labour is not too abundant. If any scarce or valued sort is to be increased that is another matter, and a small bed will suffice to hold all that are likely to be needed.

Here I should like to say that, though the usual time for making and inserting Currant cuttings is the end of September or early in October, yet I have found the present time more suitable, and in this the practice of an experienced market gardening friend has been followed. For some years he has taken both Red and Black Currant cuttings as soon as the growth was sufficiently firm in August, or even at the end of July, with the leaves still on the shoots, the only requisite being a rather shaded and cool place for the cutting bed. They are taken in the usual way, a foot to 15 inches long, preferably the latter, and about one-third of their length is inserted in the soil, which should be carefully prepared, and the cuttings being pressed into little trenches cut with a spade, so that the base of each cutting is firm on the soil. It should be observed also that all lower buds are taken out, so that a clear stem of at least 3 inches above ground is provided. With a moderate amount of attention in watering if the weather be very hot

and dry, cuttings inserted in this way and at the present time root more quickly and make better plants the following season than those dealt with in the ordinary way later in the year. At least such is my experience of cuttings side by side of the same varieties, and it only confirms that of my friend, who now relies upon this plan entirely.

Where a plantation of Currants is to be formed the ground should be prepared at once, for early planting is as desirable with these as with Gooseberries. They should in fact be planted as soon after the leaves have fallen as may be convenient, and though in favourable seasons the operation may be postponed as late as January, yet it is dangerous, and I have seen some distressing results from late planting. In any case the early planted bushes have a considerable advantage the following season, both in growth and fruit. It is too much the custom to be careless of the soil in which Currants are to grow. They require a fertile and well-prepared site to give the best results. If there is any choice the lighter land should be assigned to the Red Currants. Perhaps no better preparation can be given than a dressing of farmyard or stable manure at the rate of 20 tons to the acre, but fresh, rank manure should never be employed if planting is to follow immediately. Currants do not need strong, raw stimulants, which only excite an excessively vigorous growth that is seldom properly matured, and does not increase the yield of fruit in proportion. If the manure has been stacked in a convenient place, turned occasionally, and the liquid dressings poured over it for a month or two, it becomes fine material for digging into soil that is rather light or poor. In my neighbourhood the finest Red and Black Currants are grown by two or three cottagers, who depend entirely upon earth-closet manure, with which soil has been mixed very freely, together with house drainings applied during the winter occasionally. The bushes are in excellent health, vigorous without being gross, though some of them are old specimens, and they bear surprising crops of fruit, the bushes and berries being usually large.

An annual supply of manurial aid in some form is important in maintaining the health and fruitfulness of Currants, and the most convenient as well as beneficial and cheap dressing I have found is superphosphate of lime, used at the rate of 1 oz. per square yard, or 300 lbs. per acre, applied in the late autumn. I have tried nitrate of soda on several occasions as an additional dressing, but except when it has been necessary to force all the growth possible owing to bad attacks of caterpillar I have not found the effects so marked as might be expected. As with other plants, the foliage certainly assumes a much darker and more healthy-looking colour, but I have not observed any further advantage from the use of nitrate. A good annual surface dressing of old manure either from a stable or farmyard produces far more notable results in the size and quantity of fruit.

The distance at which Currants should be planted will depend to some extent upon the character of the plantation; but there is an unfortunate tendency to plant them too closely, so that at the end of three or four years they are either so crowded that they injure each other, or some have to be sacrificed to make room for the others. It is possible to transplant bushes five or six years old successfully, and this is the best way when ground is available, though it often means the partial loss of a crop at a time when the bushes are most productive, and sometimes before they have really had a chance to repay their cost and the labour involved in planting. Red Currants can be planted at 3 feet apart, but Black Currants should not be less than 4 feet, and the others also are much more satisfactory at the same distance as the minimum, though if Strawberries are to be grown between them in a mixed plantation then 6 feet between the rows should be the minimum.

In connection with this, a word or two may be given respecting planting, for carelessness is more frequently manifest in the treatment of Currants and Gooseberries than with other fruits. As received from the nurseries the roots are commonly bunched and tied together closely, and quite as commonly the bushes are planted without any attempt at spreading the roots out, though I am convinced by experience that such want of care results in the loss of a season, as the roots are deprived of a large portion of their recuperative power when bundled together in a hastily dug hole, as is customary. When a large number have to be planted the cost of labour is a heavy item, and it becomes needful to hasten the work as far as practicable; but it is possible to realise the truth of the saying, "The more haste the less speed," and it is preferable to plant a few hundreds less in a day and insure those which are planted being placed in position properly than to hurry through and find evil results afterwards. It might appear to some that I am attaching too much importance to a simple operation and an ordinary crop, but the simple things are the very ones which are overlooked, and Currants are very much more than an ordinary crop with me; they are equally important to others, and might be so to many more.

Journal readers were at one time favoured by articles from the pen of an able writer whom some of us fancied was one of the honoured leaders of practical horticulture in the present time, and the signature he adopted was "Experientia Docet," which someone very freely rendered as "Experience does it." What a world of meaning there is in that word Experience! How much it teaches, and how fast all fantastic theories disappear under its influence! "Practice with science" is the excellent motto of the Royal Agricultural Society; but I think "Experience with observation" is almost as good.

Regarding varieties of Currants a chapter might be written, and if this could be made the means of throwing a little light upon the confusion which exists in the nomenclature of these fruits it would be useful indeed. Unfortunately this is a serious task, for at the outset we are confronted by the difficulty of determining which are the true types of the respective varieties. For instance, in the trial of Red Currants at Chiswick some five or six years ago Raby Castle is given as a synonym of the Mallow-leaved, yet in the last edition of Dr. Hogg's "Fruit Manual" they are described as distinct varieties, one character alone—that of the foliage—sufficing to distinguish them, the Mallow-leaved having large pale soft leaves, while Raby Castle has its leaves "dark bluish green, very rugose, and darker than those of any other variety." Again, Red Cherry is given in the Chiswick Report as distinct from La Versaillaise, whereas Dr. Hogg cites the latter as a synonym of the former. A third instance is afforded by Fay's Prolific, which, in the R.H.S. Report, appears as a synonym of Red Cherry, yet I and others have Fay's Prolific totally distinct from the variety there described, and superior to it in some respects. On another occasion I may have something more to say about the varieties of Currants, but I wish to satisfy myself on a few points first in the hope that my observations may be of service.

In the meantime, I have not found anything better than the following:—Red Currants: Raby Castle, Fay's Prolific, New Red Dutch, and Red Cherry. White Currants: White Dutch. Black Currants: Baldwin's and Black Naples.—Fruit Grower.

[In July of last year Mr. Becker of Jersey exhibited at the Drill Hall a new Red Currant named The Comet to which the Fruit Committee of the Royal Horticultural Society attached an award of merit. The variety is remarkable, as may be seen in the woodcut (fig. 29), for the length of the bunches of fruit and for the size of the individual berries. One noted fruit grower asserts that The Comet is synonymous with Fay's Prolific, and perhaps our esteemed correspondent will give his opinion on this point. The illustration is exactly life size.]

VEGETABLES FOR HOME AND EXHIBITION.

Root Crops—Beetroot and Carrots.

In a former article I mentioned the names of a few famous vegetable growers and exhibitors, and it is to such produce as is shown by them that I would draw the reader's attention. It would be impossible to see the straight, clean, and perfect specimens of Beetroot and Carrots that figure in large show collections without being struck with the standard of perfection that has been attained in vegetable culture. Sometimes one hears such remarks as the following:—"It's all very well to grow a few vegetables like that for show, but it's no good if one has to supply a kitchen all the year round." Now, that is just where the crucial point comes. Those men who show the best of vegetables have all got kitchens to supply, and it is often out of the beds that provide the needs of the household that the

splendid examples come which grace the showboard. "How is it done?" some may ask. In the first place by a capacity for this branch of horticulture; secondly by sound practical knowledge; and thirdly by favoured conditions of soil and aspect, with close attention to detail in culture and careful selection of the best varieties.

Beetroot as an article of food has advanced greatly in popularity during recent years. Beet enjoys a fertile soil, and on this depends to a great extent the rich colour and sweetness of the vegetable. If grown on poverty-stricken soil even the best varieties will be lacking in quality, though it must be borne in mind that the rooting medium should be made favourable by previous applications of manure rather than at the time of seed-sowing. Soil enriched with crude manure in the spring is an incentive to rank growth and forked ugly roots, therefore it should be avoided. All tap-rooted vegetables are benefited by deep cultivation, so that the roots may strike downwards, and so much the better if the bed can be formed on soil that has been well manured for some previous crop such as Celery. Otherwise the manure used must be of a well decomposed nature and be buried a couple of spits beneath the surface. If the soil is at all clayey greater care must be taken in thoroughly working it in order to get straight well-shaped roots.

There is no advantage in sowing the seeds of this crop too early, as the late frosts are liable to play havoc with the tender seedlings. The second week in April is a good time, having first obtained a fine surface and drawn the drills 15 or 18 inches apart. A distance of about 12 inches should be left from plant to plant for development, and a sprinkling of salt or wood ashes along the rows will prove beneficial. Constant stirring of the surface soil during the summer is no mean factor towards the ultimate perfection of the Beet, as this prevents undue evaporation of the moisture. When the roots are swelling to maturity applications of liquid manure may be given with advantage, or sprinklings of a chemical fertiliser, but it is well not to feed the plants before this time or they are liable to make robust and rank leaf growth at the expense of the roots.

In October, or before severe frost sets in, Beet should be taken up and stored for the winter. In this operation great care must be exercised so as not to bruise or injure the roots, otherwise the colour will be impaired. Do not cut off the leaves, though they may be screwed off with the hand. They are best stored in a cool shed in heaps of sand not sufficiently damp to absorb the moisture from them, though at the same time it must not be dry. A good method is to place a layer of sand on the floor, and dispose the roots in a square, crowns outwards. On these put another layer of sand, and then Beet, and so on till the heap is complete. The sand will conserve sufficient moisture to keep the roots from shrivelling through the winter, and they may be taken from the heap as required.

For exhibition purposes the roots must all be chosen of even size and character. They may be carefully washed, but cutting of roots or fibres should be avoided. For early use the Turnip-rooted or round Beet should always be grown, as it comes in well for the late summer shows, and for the main crop Pragnell's Exhibition, Sutton's Dark Red, Dell's Crimson, or Blood Red may be depended on, though there are several other varieties of equal merit. One important point in favour of Beet culture is that the plants do not suffer much from insect pests or diseases. The foliage being strong and fleshy repels all such attacks, therefore if careful attention is given to details of cultivation there is no other secret in the growing of Beetroot with success.

In reference to Carrots, we have a much wider family than with the former, and one on the whole more difficult to grow. We know the long tapering roots as Long Carrots, those terminating abruptly as Horn Carrots, and others again which strike the medium as Intermediate. Gardeners, practically speaking, produce these roots all the year round, first by early forcing in heated frames, to be followed by successive sowings outdoors. The Long varieties appear to be the most favoured for exhibition purposes, not so much on account of their superior eating qualities as for their appearance, and the perfection to which they may be grown. Straight tapering roots of even size, clean, bright coloured, and without a blemish are what the exhibitor aims at, and to obtain these he must have suitable varieties, and subject the plants to careful treatment in cultivation. Good Carrots play no small part in a collection of vegetables, and if they can be shown with the foliage attached this adds to their attraction. I do not care for the practice of scrubbing the roots till they shine like new bricks before putting them up for show, though this may be done to enhance the colour. Grub-eaten or speckled roots are passed over as defective, and if the dirt is removed by washing that is all that is required.

In preparation for the main crop much the same remarks as made for Beet are applicable. Recently broken up pasture land is often disastrous to the Carrot crop, as it is almost invariably infested with wireworms. Where these pests abound a winter dressing of gas lime at the rate of about half hundredweight to the rod, allowing it to lie on the surface about six weeks before digging in, is a good remedy. Salt may also be applied in the spring at the rate of about 7 lbs. to the rod, but perhaps the best advice is where practicable, Do not grow Carrots where you know wireworms abound. Sandy soil is favourable for Carrot growing, and if at all stiff or binding it is rendered friable for sowing by thoroughly breaking and pulverising with the fork.

For sowing the oft-given advice to choose a dry day and dispose the seeds thinly may well be followed. With specially cleaned seeds now obtainable there need be no difficulty in sowing; but where such is not to hand the seeds should be rubbed between the hands with a little admixture of dry sand, or it is hard to sow with regularity. For the Horn varieties a distance of 10 inches may be given from row to row, and for the long-rooted sorts allow 12 to 18 inches, according to the condition of the soil. One of the deadliest enemies of the Carrot is the grub, which often plays havoc to the crop. The larvæ of this pest is secreted below the surface of the soil, whence it emerges, and the fly hovers round, depositing her eggs on the foliage. When hatched the grubs make their way to the roots, and the results need no recapitulation here. A good preventive is to blacken the ground with fresh soot before drawing drills for the seeds. Another plan is to mix a quart of paraffin with a bushel of dry sand and spread it on the surface between the rows, as the smell from the paraffin is distasteful to the fly. If these remedies fail seed of an Early Horn variety may be sown at the end of July, as by this time the insect season is over, and there is yet time before the winter for the roots to mature. Thinning should be done early and in damp weather, leaving the plants from 8 to 12 inches apart, according to the variety.

Fig. 29.
Red Currant The Comet.

A common method for obtaining long straight roots solely for exhibition purposes is to insert a crowbar or other sharp pointed instrument into the ground to a depth of 2½ feet. Fill this with old potting soil with an admixture of dry fowl manure and sow the seeds of an approved variety on the surface. When large enough thin these to one, and during the summer give occasional applications of liquid manure and surface sprinklings of chemical fertilisers. The roots will strike into the prepared compost, and going down straight fine specimens may be thus obtained. An occasional surface sprinkling of an approved fertiliser will assist the main crop, and waterings with liquid manure during periods of drought will also be serviceable. Keep the surface soil stirred with the flat hoe and discourage the spread of weeds.

Towards the end of October, when the leaves change colour, the crop may be dug carefully, and stored for the winter in the same way as recommended for Beet, not cutting the tops, but screwing them off with the hand. Care should be exercised in the display of Carrots on the exhibition table, choosing clean even examples. There are numerous varieties of the different types, and for early forcing purposes Carter's Improved Early Horn, Early Nantes, and French Horn may be mentioned. Veitch's Model is a splendid specimen of the stump-rooted type, either for home use or exhibition; and Sutton's New Scarlet Intermediate is rightly a favourite of its kind, and can be thoroughly recommended. Among the giants of the Carrot family favoured by exhibitors perhaps none are more widely grown than Selected Altrincham and Long Surrey, though here, as with other vegetables, the number of seedsmen's strains is so large that it becomes confusing. The successful culture of Carrots opens a wide field for the grower, and offers ample scope to the exhibitor.
—Grower and Judge.

DENDROBIUM FYTCHIANUM.

THERE are many growers of Orchids who are well acquainted with the usual run of Dendrobes of the various kinds or sections of kinds, but who are total strangers to many of the most interesting species, the one cited above as an instance. It has been in cultivation for nearly forty years, yet I think I am right in saying that it is not represented in one out of forty collections. This is a pity, for to say nothing of the charm of variety one gets by growing the lesser known kinds, there are many of them that flower at a season when the bulk of the more popular ones are over.

D. Fytchianum is a very beautiful plant when seen in good order, and is far less trouble to grow than many that obtain more recognition at the hands of orchidists. It is an upright-growing plant, or nearly so, about a foot in height, producing its blossoms in rather slender racemes from the apex of growth after the manner of D. phalænopsis, or the less known D. barbatulum, with which it is sometimes confounded. A dozen or more flowers are produced on each of these, individually about 2 inches across. The sepals, petals, and most of the lip are white, the latter having, in addition to a purplish tint in the side lobes, a delicate fringe of yellow hairs under the column.

In growth and time of flowering it is not so constant as many other kinds, but after a few seasons it keeps fairly steady to its resting and growing periods. But no attempt should be made by drying off or otherwise to force it into a resting or quiet season, when it is apparent by the swelling basal eyes that the fluids are active. On the other hand, by all reasonable means let the treatment tend to a proper routine, as by this the plants are likely to be more satisfactory over a long series of years.

It is a plant that has a wonderful power of recovering itself after ill treatment, and a batch of apparently almost dead plants, when introduced to heat and moisture, will often make good progress. The best position for it is one not far from the roof glass in the East Indian house, or where the usual deciduous kinds thrive. Like these it abhors either a close heavy root run or a large receptacle, and is most at home in small hanging baskets or pans. These must be scrupulously clean when used, as the plant dislikes being disturbed; they should be thoroughly drained and grown in an open but not too rough description of compost. Equal parts of peat and sphagnum moss with small nodules of charcoal and crocks suit it well.

Early in spring great care is necessary with watering, and it is then a little shade is required to prevent the tender young shoots scorching. But even then too heavy material must not be used, as it defeats the end in view by making the growths more tender, and therefore more liable to injury. As the season advances the growth, of course, becomes more solid, and only sufficient shading to prevent injury to the foliage is needed. Young roots are produced at the base of the shoots when the latter are little more than an inch in length, and this is the best time to renew or add to the compost.

I have before mentioned in this direction that top-dressing is not easily carried out without injury to the smaller rooted Dendrobes, so it is well not to leave this part of the work to inexperienced or thoughtless persons. Even with the best care, although the old material is removed with comparative ease, it is different when it comes to bedding in the new, many of the small roots being either bruised or snapped off. To support the growths a few neat stakes are sometimes necessary when repotting, but if the roots are plentiful, and the compost well firmed, they are not always required. Finish the compost to a neat convex line, clipping off all ragged ends of peat and moss, as these if left make it difficult to determine whether or not the plant is dry at the roots as well as having an untidy appearance.

All this class of Orchid is peculiarly liable to be attacked by yellow thrips, once a formidable foe to Orchids, but since the improved methods of fumigation fortunately less to be feared. Still even now prevention is better than cure, and this consists in keeping up a well-balanced temperature, in which neither heat, air, nor moisture unduly predominates, and the plants in good order at the roots. It is the half-starved plants that give most trouble; keep them healthy, and insects are not much to be feared.

The typical D. Fytchianum, as described above, is a native of Moulmein, and the credit of its discovery is due to the Rev. C. Parish, who found it in 1863 growing principally on low trees in the vicinity of water. There is also a pretty variety called roseum, which is of more recent introduction. This has bright rosy sepals and petals, and the same colour continued about the front portion of the lip. The base of the latter is a beautiful deep purple that is visible through the hairs on the base. It comes from rather a different locality from the type, and was discovered by Major-General Berkeley.—H. R. R.

CHEMISTRY IN THE GARDEN.

(*Continued from page* 187.)

CHEMICAL PROPERTIES OF SOIL.

ABSORPTION. — We have already learnt something about the absorption of water by soils, but as they are capable of absorbing other substances, we will devote a little time to a consideration of what these are.

One of the chief chemical properties of a moist fertile soil is its power to absorb ammonia from the atmosphere. Heinrich carried out some very interesting experiments, to see approximately how much ammonia an acre of land absorbed from the atmosphere in the course of a year. He found that while the rain only brought down to an acre of land 6 lbs. of ammonia per annum, some soils were capable of absorbing 30 lbs. from the atmosphere, which would be equal to about 200 lbs. of nitrate of soda. Some soils have greater power than others, which is no doubt due to the larger amount of oxides of iron and alumina they contain; thus clayey soils are generally those which absorb the maximum amount. The quantity and distribution of ammonia in the atmosphere will be dealt with more fully when we come to consider the air as a source of plant food.

We might carry out with ease a simple experiment to show that soils will absorb ammonia. Fill a 3-inch pot nearly full with sifted soil and press it in moderately firm, then place the pot over a tumbler and pour ammonia water into the top of the pot until it runs through the hole at the bottom into the glass. When the liquid has passed through the soil, put a small piece of unslaked lime into the tumbler, and if the experiment has been carried out carefully no ammonia will be emitted from the liquid, because it has been absorbed by the soil. Different soils may be used in this experiment, and by using the same amount of liquid ammonia and lime the experimenter will soon learn which soils have the greatest absorptive power.

Many practical gardeners use liquid manure for occasionally damping down vineries and Cucumber houses, and also place carbonate of ammonia in the evaporating troughs, the idea being that the leaves will absorb the ammonia which is given off into the atmosphere, thus helping to stimulate their plants. Is it not more probable that the soil in which the plants are growing absorbs the ammonia, and after it is converted into nitric acid the plants take it from the soil by means of their roots?

Soils are able to absorb colouring matter held suspended in water, and also salts from solutions poured upon them. Take a 5-inch pot and fill it with sifted soil, and after pressing it down firmly pour very gradually about a pint of the dark coloured liquid which may be found running from the manure heap. When the liquid has passed through the soil it runs out perfectly clear, showing that the soil has retained the colouring matter of the manure water. It is this retentive property of soils that makes them able to extract the sewage from the water, and allows only the clear liquid to run into the drains, the sewage, like the colouring matter in manure water, being retained by adhesion to the soil particles. If water in which enough common salt has been added to make the liquid taste salty be poured upon a pot filled with soil, it will be found that the water which runs through is almost, if not quite tasteless, showing that soils are capable of absorbing salts.

Soils have also the power to decompose certain salts, in some cases retaining only the acid, while in others the acid and base may be retained. As we shall be continually using the words acids, bases, and salts, more especially when we come to deal with manures and plant nutrition, it would be well to try and learn at once what is meant by these terms.

Purchase some red litmus paper from a chemist. Place a piece of unslaked lime in some rain water, and after allowing it to stand for a few hours pour off the clear lime water into a glass bottle. Put a little of this into a saucer, and then dip the red litmus paper into the liquid, when the paper will immediately turn blue. If instead of the lime liquid ammonia, caustic potash, soda, or magnesia had been used, the action of the litmus paper would have been the same—*i.e.*, it would turn blue when put in water containing any of the above-named substances. One of the characteristic properties of a base is its power to turn red litmus-paper blue, and the bases we shall have to deal with are lime, ammonia, potash, soda, and magnesia.

Procure some nitric acid or hydrochloric acid (spirits of salts) and pour a little into water. In the acid water place a piece of the red litmus paper, and note that its colour does not change. Take the piece of blue litmus paper out of the lime water and put into the water containing the acid, and you will observe that the blue

immediately turns red. The power to turn blue litmus paper red is one of the characteristic properties of all acids. But now we come to the question—namely, What is a salt? A good illustration of a commonly known salt is nitrate of soda. If a small quantity of this salt be dissolved in water and red litmus paper be put into it no change of colour will occur; if blue paper be used instead of the red the solution will not alter the colour.

A salt then has not the power to turn red litmus blue, or blue red. Place a small piece of caustic soda in some water, and after it has dissolved put in a piece of red litmus paper, the colour immediately turns blue; now add nitric acid—one spot at a time—to the caustic soda solution until the blue paper begins to alter in colour. If this experiment be conducted with great care a substance said to be neutral will be formed in the water, which will neither turn blue paper red, nor red blue. What then has occurred? The nitric acid (an acid) has chemically combined with the soda (a base) to form nitrate of soda (a salt). If sulphuric acid or phosphoric acid had been used instead of the nitric, sulphate or phosphate of soda would have been formed; or if potash or lime had been used instead of the soda, nitrate of potash or lime would have been formed. If the presence of the nitrate of soda be doubted, allow the water to evaporate, when the crystals of salt will be found in the bottom of the vessel used.

Before leaving this subject we might quote a practical case in which the neutralising of acids takes place. Peaty soils, and those which have been dressed for a long time with farmyard manure, get sour. Why? Because owing to the decomposition of the decaying vegetable matter acids are formed. What do we do to make these soils sweet? We apply lime, which is a base, and this combines with the acids and forms neutral bodies called salts.—W. Dyke.

(To be continued.)

THE DECADENCE OF WALL FRUIT CULTURE.

Among the numerous readers of the *Journal of Horticulture*, I trow there are many who have studied closely the sweeping assertions of "A Traveller" on the decay of gardening (page 170), but few, I think, will entirely agree with the remarks there made in so fluent and polished a style—a style that betrays the "Traveller" to be also a scribe, whose thoughts may often linger upon the achievements of the past, yet do not prevent him from being up to date in the matter of wielding the pen of a ready writer.

I do not intend to take up the cudgels on behalf of the "smart" gardener of modern times, but it has struck me that if the notes of "A Traveller" are productive of no other good, they have already done yeoman's service in bringing out the instructive leader of "Invicta" (page 185), whose thoughts have evidently been directed to the subject that heads these notes by the forebodings of "A Traveller." Fortunately "Invicta" goes somewhat deeper into the matter, for while he admits that good examples of wall fruit culture are not so numerous as formerly, he also endeavours to find some tangible reason why such is the case. A weighty one advanced is "that with the great facilities now at hand in the way of glass protection, Peach growing in the open air is practically unnecessary."

There is, without doubt, a great deal of truth in such an assertion, but, in my opinion, it does not show a sufficient reason why Peaches should not be grown on outside walls as largely and well as ever they were, not only with the object of prolonging the season, but of giving a more plentiful supply. Choice fruit is always in demand, and there are very few gardeners in the enviable position of having too large a supply of really good fruit. The bedding craze when at its zenith was doubtless answerable for the decadence of many phases of gardening, as so much labour was needed to raise, plant, and tend the enormous quantities of plants required for large flower gardens, that many details which help to promote high culture in other directions were of necessity neglected.

The old stereotype bedding craze is, however, rapidly passing away, and many hardy, or more easily raised, yet not less beautiful plants are now used for the embellishment of the flower garden. If, then, this form of gardening has in the past been to a great extent answerable for the decadence of wall fruit culture, matters should begin to improve now that we have returned to a simpler style of bedding; yet I question very much if such will be the case. If I am right in this assumption, it shows clearly that there must be some far-reaching cause which has brought about a state of affairs so much to be deplored. It is sheer nonsense to pretend, as some of the pessimists do, that present-day gardeners do not possess the skill to grow and train wall trees in the way that their forefathers did. The way in which Peaches and other fruit trees are grown, trained, and fruited under glass clearly combats such arguments. At no time in the history of gardening were better crops of fruit more generally grown under glass than they are to-day. How, then, our detractors will again ask, do you account for the fact that such a satisfactory state of affairs does not exist in regard to wall trees? Perhaps you will take shelter under the well-worn argument of the unsuitableness of our climate. Assuredly I am not, for although our climate may be by no means perfect, it is good enough to enable cultivators in the southern and midland counties to produce fine crops of Peaches three years out of four when cultural details are well carried out, but to do so a great amount of intelligent labour must be given to the work.

On this the whole matter hinges, for it is the great drawback in the majority of gardens of to-day. It is absolutely impossible for gardeners in many places to bestow the necessary amount of attention to their wall trees, and the inevitable result is that they gradually drift into an unsatisfactory condition. Time was when in many well-conducted gardens a regular hand—who had been trained from boyhood to the work—was placed in charge of the wall trees. His first consideration was to give the trees whatever attention they required at the right time, and only when this had been accomplished was he given other work. How do matters stand in this respect to-day? Why, the man who in former times had little else to do but attend to the wall trees, is, in consequence of a shortness of hands, set to do other, and as far as times go, more pressing work, while the trees are going to ruin through unavoidable neglect.

When we come to the point of deploring the loss of the beautifully trained trees of olden times, I think we may rather congratulate ourselves that we have been able to adopt practices more suited to altered circumstances.

A properly trained tree is, I admit, a beautiful object, and I yield to no one in my admiration of a well-balanced fan-shaped tree, in which every angle is a correct one, but they are expensive objects of beauty, which gardeners can scarcely afford to grow in these utilitarian days, for much labour is needed to keep them in the best of condition. And yet I think no one will deny that, given an equal amount of wall space for two trees, one to be trained and kept in perfect shape, while the other was being manipulated on less methodical lines, that the latter system would be productive of the best results in the shape of fine fruit in quantity. If we must have some perfectly trained trees in our gardens to show that the art of producing them is not lost, let them be grown in prominent positions where they will catch the "Traveller's" eye, but by all means let plenty of others be grown on less rigid lines—to supply abundance of fruit.

To sum up the matter, I for one cannot admit that gardeners are to blame for the present condition of the wall trees in this country, for during the last twenty years a great reduction of the hands employed in gardens has taken place, barely enough being left to keep places in presentable condition by doing what I term "surface gardening." Under such circumstances some things must be neglected, and the gardener who in choosing between two evils makes a point of keeping down weeds and maintaining cleanliness and order as far as possible—even at the expense of his wall trees—follows, I think, the wiser course. The requirements of employers are much greater than they were twenty years ago. Let us take for example places where the same number of men are employed now as formerly, and then compare the amount of time taken up in carrying out plant and floral decorations in the mansion, and then wonder, if we can, why certain phases of gardening compare unfavourably with the achievements of long ago. Nine gardeners out of every ten are thoroughly cognisant of these facts, and when they meet in a body at some great show freely discuss the "curse of modern gardening"—viz., reduced hands and increased house decorations. Yet they seem to have great temerity in writing plainly to that effect in the horticultural press. It is a matter well worth ventilating, and I should like to see a vote taken among the gardeners of Britain as to what, in the opinion of each, is the cause of "the decadence of wall fruit culture."—H. D.

HOME-MADE WINES.

(*Continued from page* 187.)

Elder Wine.

The fruit of the Elder contains a considerable quantity of fermentable matter, which is essential to produce an active fermentation, and its beautiful colour gives wines a rich tint, but it is defective in saccharine matter. It is much improved by adding a small quantity of argol. Dr. MacCulloch recommends 1 to 4 and even 6 per cent. according to the greater or less sweetness of the fruit; the sweeter the fruit the greater the quantity of argol required.

To every gallon of Elder berries take 1 gallon of water; but before adding the water the berries are to be bruised and allowed to remain in the juice till the following day, when they are to be boiled in a copper for ten or fifteen minutes. They are then to be pressed and strained through a sieve. The given quantity of water is to be poured upon the pressed fruit, the whole well stirred and then pressed and strained, which is to be added to the juice. Measure the liquor and test its gravity by the saccharometer, and bring the gravity up to 120, which will require 3 to 3½ lbs. of sugar per gallon; and to

each gallon add 3 ozs. of ground ginger and 3 ozs. of allspice. Boil the water half an hour and then strain it into the fermenting tub.

When cooled to 5° Fahr. add 1 oz. of argol to the gallon, previously dissolved in a portion of the liquor, and also add yeast on a toast. Test the gravity again by the saccharometer, and if it is below 120 raise it to that standard by the addition of sugar, and stir the whole, agitating it freely. When the gravity is reduced to 90 by fermentation it is to be put in the cask and the fermentation encouraged till the gravity is reduced to 50 or 60. Care must be taken to keep the cask quite full to the bunghole to enable the wine to throw off its impurities, and when the fermentation has ceased rack it off, cleanse the cask with hot water, and return the wine to it while the cask is warm, fill it up to the bung, and let it remain in the cask twelve months before bottling it.

2, The following recipe, which we had from a lady in Gloucestershire who made a wine of very excellent quality, will, if followed, give a fine wine:—To every gallon of Elderberries put 4 quarts of water and stir them every day for a week. Boil the whole for half an hour, then strain off the liquor, and to every gallon add 3 lbs. of sugar. Boil it again for half an hour, skimming it well all the time, and to every 6 gallons add 1 lb of ginger, 2 ozs. of allspice, and 1 oz. of cloves. Let it stand in an open vessel till it is blood-warm, and then work it with yeast on a toast. In three days put it in the casks.

3, Another very excellent recipe which we have practised for several years produces an Elder wine of very superior quality. Boil ten gallons of water, and when cold add 10 lbs. of raisins cut or chopped small. Let them ferment for ten days, stirring them twice every day. At the end of the ten days strain the liquor through a flannel bag, and add to three quarts of the juice of Elderberries a little juice of Sloes. Put the whole into a cask, and add 3½ lbs. of moist sugar, and a quarter of an ounce of isinglass dissolved in a little of the liquor with a pint of brandy. Let it stand for three or four months, and afterwards bottle it.

Parsnip Wine.

Take 125 lbs. of well-grown sound Parsnips. Scrape and wash them thoroughly. Cut each root into four longitudinal pieces, and then cut these into pieces 3 inches long. Put them into a boiler with 25 gallons of soft spring water, and let them boil for an hour and a half without bruising the roots. Then strain the clear liquor through a fine sieve into the fermenting tub, and after testing its gravity add immediately 1 lb. of powdered argol previously dissolved in the liquor, and bring up the gravity by the addition of sugar till it stands at 120. When the liquor has cooled to 80° or 85° add a pint of good brewers' yeast, then cover it up with a flannel cloth, placing a board over to keep it close.

Stir the liquor every day, and test its gravity till this is reduced to 90 or even 80 of the saccharometer. At this stage take out 2 quarts and warm it to the degree of 90 by the thermometer, and add to it a quarter of a pint of good brewers' yeast. In the meantime skim off the frothy head of the must in the fermenting tub, and preserve it in a bottle for future use, and then add these 2 quarts of must and yeast to the mass.

Prepare an 18-gallon cask by well washing and scalding it; and while yet warm strain the liquor into it, filling it to the bung, and let it work over, adding to the loss with liquor reserved for the purpose. As soon as the hissing ceases bung it up close, and have a vent-hole which can be opened at pleasure, but which it is desirable to close as soon as possible.

March is the best month for making Parsnip wine. In December it should be racked, and in the March following it should be fined for bottling.

Rhubarb Wine.

This is a very palatable and good wine when properly made, but on account of the quantity of oxalate of lime it contains it is injurious to constitutions that have a gouty tendency. This is not the place to enter into a medical view of the case, but we would recommend those who wish to indulge in the use of Rhubarb wine as a beverage to consult their medical attendant before using it.

To make 10 gallons of Rhubarb wine take 60 lbs. of the stalks of the leaves of Rhubarb unpeeled. Cut these in pieces and bruise them with a mallet, or pass them between rollers, such as a wringing machine, without cutting them. Put them in the fermenting tub, and pour 5 gallons of cold water over them, leaving them to macerate for twelve or sixteen hours; then press the whole, returning the juice which has been expressed to the fermenting tub. Add 30 lbs. of sugar, or as much as is necessary to raise the gravity to 110 if a sparkling wine is desirable, and to 120 if a still wine; also 4 ozs. of powdered argol, and enough water to make the quantity of liquor up 10½ gallons. Cover the tub with a blanket, and place it in a temperature of 55° or 60°. Stir it occasionally for three days to encourage the fermentation, and then strain it through flannel into a cask, which must be kept full to the bung till fermentation ceases. As soon as the gravity of the wine is reduced to 40 the cask may be removed to the cellar and the bung fixed firmly in.

In a month or six weeks the wine may be fined and drawn off into a clean cask, or returned to the same one after being properly cleaned. The cask may now be finally stopped close and left till the time of bottling. If a sparkling wine is desired it must be bottled in March following, with the corks safely wired; but if a still wine it should remain in the cask at least a twelvemonth before being bottled.

(To be continued.)

SIXTY YEARS' PROGRESS IN HORTICULTURE.

While we all acknowledge the wonderful strides in other arts and sciences, of which we have been reminded so much of late, I claim that the science of horticulture with which we are all so closely connected can lay a fair claim to a share in the improvement of our country. Fruit, vegetables, and flowers, as food for the body and gratification of the senses, form a very important element in the necessities of life. When we compare our resources now to what they were sixty years ago we wonder how our forefathers lived, worked, and battled as well as they did. The changes and improvements in the method of production have been so great, and the varieties that have been introduced so numerous, that I am afraid I shall have to omit many important items that might be dwelt on with advantage, or I shall occupy more time than can be allowed.

Fruits.

Nothing is so noticeable in the gardener's career as the decline in the cultivation of the Pine Apple. In the olden times it was the gardener's ambition to be able to grow and fruit a Pine Apple, and keep up a succession by the aid of varieties like the Queen for the summer, and the Smooth Cayenne and Black Jamaica for the winter. The bark from the tan yards supplied the fermenting material in which to plunge the plants, while pits for the suckers and the succession plants, with houses or pits to fruit them in, were considered a necessity in all aristocratic establishments. Now, however, the introduction of steam has brought Jamaica and other foreign climes within touch of the mother country, and fruit can be brought in such good condition so quickly that it is only in the very old establishments that Pine growing is carried on to any extent.

There is no doubt the cultivation of Grapes has been a very important feature during the period under notice, and when Sir Robert Peel took the duty off glass little could he have foreseen the very great advantage it would prove to the cultivation of Grapes and other fruits, vegetables and flowers. Since that time, and particularly in the last twenty-five years, Grape growing for market has developed enormously. We read of one place alone having 20 acres of glass houses, from only one of which structures 7 tons of Grapes have been cut in one season, while from the whole 100 tons of Grapes went to market. Mr. George Munro, the great salesman of Covent Garden Market, had 22 tons through his hands in the four days preceding Christmas, 1896.

Of the varieties Black Hamburgh and Muscat of Alexandria were in existence at the beginning of the Victorian era, but we can lay claim to many introductions of good serviceable keeping Grapes which prolong the season. Notable amongst these are Alicante, introduced rather more than thirty years ago; Lady Downe's Seedling and Foster's Seedling, Gros Colman, Madresfield Court, Gros Maroc, Buckland Sweetwater, and Duke of Buccleuch. Then we must not forget two good Grapes raised in the Isle of Wight by Mr. Myers, late gardener to Mrs. Hutt, Appley Towers, only a few years ago. One of these, a black variety named Appley Towers, will, I believe, be grown largely for market as a good late keeping one.

The cultivation of Peaches and Nectarines has developed remarkably of late years, and to Mr. Thos. Rivers of Sawbridgeworth belongs the honour and credit of introducing some fine varieties. A luscious Peach or Nectarine of the best quality is always acceptable, and is very highly appreciated by most persons.

Something wonderful has been accomplished in the culture and development of the trade in the king of fruits, as Apples are sometimes called, both at home and in our Colonies. Although they have been grown in some fashion or other for centuries, it is within the last thirty years that extra attention has been directed to the improvement in culture and varieties and the uprooting of many worthless sorts. The favourite plan of training in the olden times was espaliers, but they are gradually dropping out of fashion, although the cordon style, which is but a modification, is adopted by way of change in many establishments. There were some very good Apples at the beginning of the Victorian era. Cox's Orange Pippin and Blenheim Orange were introduced prior to 1837, but such splendid varieties as Lord Suffield, Potts' Seedling, Bismarck, Lane's Prince Albert, Bramley's Seedling, Lord Derby, New Hawthornden, Newton Wonder, Gascoyne's Scarlet, and Worcester Pearmain are all valuable additions during the period. Pears have also been improved by the addition of such sterling varieties as Doyenné du Comice, Pitmaston Duchess, Beurré Superfin, and many others.

Plums, again, have been augmented by Monarch, The Czar, Grand Duke, and the Early and Late Transparent Gage, each of which is of the first merit. The old Green Gage, one of the most delicious of fruits, was already in cultivation, and so I believe was Victoria, under the name of Sharpe's Emperor, but in 1844 it was introduced as a new variety

under its present name. One cannot claim for Cherries the improvement that is manifest in other fruits. The gumming and canker to which the tree is so subject has rather disheartened the growers, and many of the old Cherry orchards are dying out, although there are still some very fine ones about the country. Gooseberries, Black and Red Currants, as well as Raspberries, have kept pace with the times, and many extra fine varieties have been added to the list.

The cultivation of Strawberries has risen by leaps and bounds, and we can claim all the existing varieties to belong to the period of her Majesty's reign. I remember the Hautbois, the Elton Pine, Myatt's Eleanor, and British Queen in my younger days. Now we have such splendid ones as Royal Sovereign, Sir Joseph Paxton, Laxton's Noble, President, Sir Chas. Napier, James Veitch, La Grosse Sucrée, and Waterloo, all with strong constitutions, grown in fields by the hundreds of acres. More speculators than one are making a large commercial transaction in the cultivation of this wholesome and delicious fruit. Here in Hampshire, at Botley and Sarisbury, and also at Swanley, in Kent, and in some parts of Berkshire, acres are cultivated, and tons of fruit despatched by special fruit trains to the large provincial towns in the Midland and North of England. As many as 11 tons have been despatched from Swanley Station by one individual grower in one day. When we come to consider the circumstances connected with the cultivation and consumption of the fruit one can then realise to a certain degree its benefit to the community. The labourers in the fields, the basket makers, the salesmen, the hawkers, the jam factories, the glass and stone ware jar manufacturers, have all a share in this comparatively new industry.

Vegetables.

I shall not attempt to enumerate the many new introductions in the various classes of vegetables. It must be sufficient to say that the gardener of to-day has something better to work on than he of the past generation. The old grower, while digging and storing his smooth and polished White Beauty, Snowflakes, Supremes, or Ashtop flukes, cannot but recall the difference between these and the Pink-eyed Never-blows, Gold Tops, Dalmahoys, Rocks, and Champions of his younger days. In Broccoli and Cauliflowers that grand variety Veitch's Autumn Cauliflower, and their Self-protecting Autumn Broccoli, fill gaps from October to January or February that used to be void. In Cabbages the old Plaws and Early Battersea are superseded, although the old Nonpareil and Early York are not to be despised. Of Kidney Beans the Duns and Speckled Duns – so called by the colour of the seeds – have given way to the Canadian Wonder, Ne Plus Ultra, Improved Negro and others, and so on through all classes improvement has taken place.

The increase in the cultivation and consumption of Tomatoes during, say, the last thirty years is beyond conception. When I was a lad the American Red, a wrinkled variety, used to be cultivated by a few persons, and the fruits sometimes used in stews, or as an entrée stuffed with Mushrooms.

Subsequently it was discovered they made an excellent sauce, and later some tried them in salads, until the taste has gradually developed and they are now consumed by tons; whereas thirty years ago they could be reckoned by pounds. Miles of glass is utilised throughout this country for the indoor cultivation of this vegetable, and tons of fruit are also grown out of doors in favourable summers, not only by market growers but by the cottager and artizan, as well as the villa gardener, all of whom have acquired a taste for the juicy Tomato.

Before I leave this part of the subject, by the kindness of Mr. George Monro, the eminent salesman of Covent Garden, I am able to give some interesting particulars regarding the sales of home-grown garden produce. The following is a copy of a letter with which he favoured me, and came to hand after writing the above portion of my paper:—

Buxton, Derbyshire, August 5th, 1897.

Dear Sir,—Yours to hand. Being away from London I can only give you a few figures, which you can use in any way you like, and I may say that they only relate to my own business, and do not represent the total received on the markets during the time mentioned. Grapes have increased more than any fruit. The total we sold in four days before Christmas, 1896, was over 22 tons weight, and that would be about double the average during the remainder of winter. Tomatoes often run to 4, 5, or 6000 baskets daily, averaging 12 lbs. each. The next great increase of late years is in Cucumbers, as we often sell over 2000 hampers daily, averaging about 3 dozen each. At one time our market was mainly supplied from Holland, but we have turned the tables on the foreigners in these, and I alone exported during last winter and spring thousands of hampers, which went to different parts of the Continent, including Vienna and St. Petersburg, as ours being so much superior to the Dutch leaves room for great extension until they learn to grow them better. I also send Grapes regularly to the Continent, and in the winter to America. Only a tithe of what we receive is consumed in London. As quantity increases we have to find outlets, and must go further afield, as growers now put up houses by the hundred.—Yours truly, (Signed) Geo. Munro.

The above particulars, coming from the fountain head, we must acknowledge are reliable and enlightening, and although this is from one who is known as the leading man in Covent Garden there are scores of others either directly on indirectly engaged in the same pursuit, and a slight consideration would give one a little idea of the enormous increase in the production and consumption of home-grown fruits and vegetables during the Victorian era.—(*Paper read by* Mr. C. Orchard, *Bembridge, at the Ventnor Institute, on August 7th.*)

(To be concluded.)

TOMATO NOTES.

Fruit Ripening.

In reply to "W. R. Raillem" (page 176), I have not made critical comparisons from an epicurean standpoint as to the relative merits of fast-ripening Tomatoes cut and finished on a warm sunny shelf, and those absolutely ripe gathered from the plants. If I did do so in the months of July and August, the difference I imagine would be very slight, but probably in favour of the fruits freshly gathered. Later on in the season, or say after the middle of September, I would not expect the flavour of artificially ripened Tomatoes to reach the quality of those taken direct from the plants.

I readily admit that to ascertain the true and perfect flavour in Tomatoes they should be gathered and eaten direct from the plants. This is an indisputable fact, which I do not wish to deny, because I can assure "W. R. Raillem" that is the method I should adopt myself if I were to consume Tomatoes largely in a raw state. The eating of freshly gathered fruit is the best way of acquiring a taste for Tomatoes.

"W. R. Raillem" will see, therefore, that I do not dispute the fact he lays importance upon, but I think for ordinary purposes Tomatoes can be finished off the plants, thus relieving the latter of the burden, and still be of good flavour to be useful, especially for culinary purposes. I think the majority of private growers, leaving out those who grow for sale, would endorse my statement if it were qualified by limiting it to the months of July and August.

My chief reason for recommending gathering prior to full ripeness was utility – relief to the plants, which could extend and set more fruit, as well as the prevention of the fruit cracking which was already ripening. The latter evil may be largely averted on the plants that have completed their growth and no more fruit is required to set. A drier condition of the soil will then be favourable to ripening of the fruit, and a check to the tendency shown for cracking.

There is a considerable difference in the flavour of even ripe Tomatoes direct from the plants. In my opinion large fruits are not so perfect in flavour as smaller examples. The most delicious, I think are the Plum-shaped and small round varieties, either red or yellow, for eating direct from the plants.

Tomato Roots.

"S. S.," on page 176, submits the question, "What are the proper means of inducing a constant multiplication of healthy rootlets in the early and other stages of growth?"

In the first place Tomatoes raised from seed require to germinate in light, sweet, and sandy soil. The seed ought not to be sown too thickly. If the seedlings when they appear have not less than an inch of space they will not suffer from overcrowding before ready for moving. Plenty of light and a free circulation of air is absolutely essential to maintain a sturdy character, thus laying a firm foundation for free rooting afterwards. Immediately the seedlings are sufficiently strong and advanced in size transplanting into small pots is necessary, using a good but light and sandy compost.

At this point commences the first stage in the increase of roots and rootlets. Each seedling plant is sunk so low in the pot as to bury the whole length of stem, leaving only the leaves resting on the surface soil. The advantage of having the little seedlings strong by exposure to light is apparent now, because when developed under the above mentioned favourable conditions the whole length of stem is ready to emit roots when buried in the soil. This is of great advantage in promoting growth that will be highly satisfactory. If the next shift into larger pots is carried out on a similar principle, burying as much of the stem as possible, a further increase of roots takes place. The plants must, however, continue to receive abundance of light and air so as to modify the growth and prevent elongation, which would weaken them considerably.

In the final potting or planting out the same principle of burying a portion of stem is continued. After this, however, the plants cannot be moved further, so in due time when it is necessary to increase the rooting power, which will be required when the first bunches of fruit have set and are swelling, top-dressings of rich soil are placed on the surface, a couple of inches depth at a time sufficing. This necessarily surrounds more of the stem with soil, and fresh roots therefrom are encouraged. The older roots ramifying in the soil below are induced to emit rootlets into the freshly added material. By continuing these additions as the rootlets come to and whiten the surface considerable impetus is given to the setting and swelling of fruit as well as the general vigour of the plants.

All this attention and encouragement to the roots will, I may repeat, be useless without the essential, modifying, and consolidating influence of light. The full day's sunshine is best, but if this cannot be commanded for the whole day allow all the sunshine possible to reach them, and for the rest unobstructed light. Due amount of moisture is an important factor of success, and equally necessary with the other essential conditions. The rule to follow in applying it is to afford sufficient to moisten the whole bulk of soil and roots whenever required, then to wait until more is required. Much depends on the correct application of water in encouraging the multiplication of roots and rootlets.

Plants treated as indicated become a perfect networks of roots, which must have more support than clear water and top-dressings can fully supply, especially when the treatment has been successful and good results have followed. Recourse must then be had to small dressings of artificial fertilisers, and applications of liquid manure and soot water, as the readiest available stimulants and feeders.

During the whole course of cultivation, firm potting in pot culture,

even to ramming the compost hard at the final potting, and well firming the soil about the roots in the planting-out system should be adopted. This is a very important means of inducing the roots to be fibrous and abundant instead of coarse and few.

I trust I have made the matter sufficiently clear to "S. S.," but if any point requires further explanation I shall be glad to enlarge upon it again with the Editor's permission.—E. D. S.

Tomatoes at Malshanger.

Because so many diversely named Tomatoes are sent to the Drill Hall for the notice of the Fruit Committee, and these, as a rule, are so much alike to others already well known, I always make it a rule when visiting gardens to see the Tomato house, and there gather ideas as to the general quality of the stock grown. Without doubt, nearly everybody has good stocks. Nothing is easier than to either purchase seeds of the best or to save one's own from the very best fruits and plants. Mr. Kneller does this at Malshanger, and his span house of plants the other day showed not only as heavy a crop as could be consistent with the fact that the fruits were gathered as fast as they ripened, but the sample was of the very best form that can be furnished anywhere. The stock is of the Perfection type, and being specially selected to improve it was put into commerce as Plentiful, and it is both perfect and plentiful.

The plants were placed in 3 feet long boxes in the house early in April, and beyond having produced as heavy a crop as any similar plant could do, would carry yet an abundant one until the houses had to be filled with other things late in the autumn. Nothing well could be better, and therefore it is hard to see in what direction new varieties can excel it. We do not want big or ungainly fruit. Merely prolific varieties are practically out of the question. We could do generally with richer flavour, and that seems to be about all the room there is for improvement. In this case the boxes, 3 feet long, were 13 inches wide inside, and beyond rubble and moss at the bottom had but 6 inches of soil in them. The plants in each box were three. No doubt at all, restricted root area, good drainage, and good sweet loam give the best crop results and least disease.—A. D.

ANNUALS FOR AUTUMN SOWING.

Many hardy annuals that are seen to comparatively indifferent advantage when sown in spring are very effective, and in some cases, valuable for cutting in the early summer months, from seed sown in September. The spring weather, with its accompanying array of slugs and other pests, does not always favour the germination of the seeds, and if it do the gentry lurking in the ground make the most of the opportunities and eat off crop after crop of tender seedlings.

Everybody knows that most of our so-called annual wild flowers or weeds are biennials—that is, the seeds germinate during the first moist weather after they are scattered and the seedlings survive the winter under favouring conditions, producing the finest flowers and the most plentiful amount of seeds in the early part of the summer following. The plants get a good grip of the soil during the late summer and autumn months, and in spring, after the snow that has protected them from the wintry blast has gone, have nothing to do but develop the leafage in gleams of sunshine and soft glowing moisture, the roots supplying abundance of nutritive elements, and the plants themselves sturdy, hard in tissue, and unpalatable to newly hatched slugs and even older molluscs.

Thus the self-sown late summer annual has the whole spring and summer before it, being in fact the sturdiest and most vigorous of the race, and as such most prolific of flowers and seed. This means a selection of subject suited to environal conditions and an accordance with natural adaptation to circumstances. That in two ways—(1) The plants themselves, and (2) the individual having recourse to them. The latter implies an ardent lover of flowers, bent on having a display from an early part of summer right along by sowing more up to frost without any expenditure in anything but a few seeds. How is it done? Well, there is always something to learn, and the longer one lives the more seen of it—in gardening. An instance may profitably be referred to.

It was in this wise:—A tradesman or mechanic bought a piece of land, built a house, and reserved a large plot of ground on the south side. This land was bastard trenched and manured. The owner was a gardener we opined, and was going to grow Cabbages and Potatoes. But spring came; no such thing took place as setting the plants or seed. Bare land up to Old May Day, yet it was turned over more than once, and at the last turning some fertiliser spread on, and mixed very carefully with the soil by taking small spits. Something was going to be done. There were two or three frames (evidently home-made), and they were seen to be full of young plants—Asters, Stocks, Chinese Dianthus, Scabious, Zinnias, and others. These were put out, and a finer sight was never beheld by any person in August. I do not know what there was not, but it seemed to me that everything worth growing for cutting that could be got out of half-hardy annuals, and some hardy—such as Cornflower, Calliopsis, Corn Chrysanthemums, and Mignonette—were there. The sight by day was delightful, and the smell at night delicious.

There did not appear anything but the useful, nothing that was not bright, and manifestly intended to bring grist to the mill, for the flowers only shone once and disappeared. Roses have got there since then, with Pyrethrums, Pinks, Carnations, single Sunflowers, Cactus and other Dahlias, all things the knife can cut and the hand turn to profit. No glass or any show, but a man, sometimes two, in shirt-sleeves at night or evening, and working like a "brick." Potatoes have got there, but only earlies for a change, as out they go in time for a flower crop. Evidently flowers sell better than Cabbages or "taties"—at least, these are a drug from the allotments, and from repeated cropping with the similar subjects not infrequently very indifferent.

But the foregoing has no connection with our subject only in so far as it shows what way an individual without the means of a Crœsus may work and do by the expenditure of a few shillings in seeds of the kinds most likely to give a return quickly for the outlay, and thus enable him or her to creep before attempting to run.

Well, some of the half-hardy annuals were off in time for sowing hardy annual seeds. The land had no weeds, and beyond pointing in very lightly a dressing of thoroughly decayed manure, the seeds were sown on a comparatively hard and dry ground during the early part of September. "The seeds germinate better then, and are less liable to mildew or damping than at any other time." That also looked like a wrinkle culled from the stores of Nature, but only holds good where the seeding is thin, for moulds delight in the continual moisture of late summer and autumn. Not a great array of sorts were sown, and all in rows corresponding in distance between to the height of the plants, except the first to be named, which were sown in a somewhat sheltered spot, and the seedlings thinned to about 3 inches apart and put out in the final quarters in April in rows 2 feet apart, and the plants 18 inches asunder.

Coreopsis tinctoria, yellow and brown flowers, 2 feet or more. The flowers have good stalks and stand out well among Grasses.

Candytufts, carmine, flowers bright carmine; lilac, soft lilac flowers; sweet scented, white, rather small flowers, but very floriferous; and White Rocket, large trusses of white. All grow a foot high, or rather more.

Centaureas cyanus (Cornflower), blue, and always in demand, as the stalks are long and the flowers anything but stiff. A great breadth of this, and another of the mixed, all colours, mostly white, pink, and parti-coloured, very pretty; 2 feet or more.

Clarkias pulchella, dark rose, 18 inches; and pulchella alba, pure white, 18 inches; sprays useful for cutting, but not many grown.

Collinsias bicolor, lilac and white flowers, 1 foot; and candidissima, white, very free; 1 foot.

Erysimum arkansanum, bright yellow, Wallflower-like; 2 feet.

Eschscholtzias californica, yellow, orange centre; crocea, orange or deep yellow; and crocea alba, white flowers; all 1 foot. Slugs set very little store by these plants, and they have good stalked flowers, which, if cut early, last some time in water, and are very pretty in bud.

Geum atrosanguineum flore-pleno, scarlet, semi-double flowers. Sown in sheltered place, and transplanted in the spring; 2 feet or more.

Godetias rosea alba, white, with rosy centre; rubicunda, rosy crimson; and The Bride, white, rosy carmine centre. Very pretty, and, cut in sprays, very beautiful; all 18 inches. Sown in sheltered spot, and transplanted in spring.

Gypsophilas elegans, light, graceful, elegant spikes of small white and pink flowers, fine amongst grasses as over-tops in vases; 2 feet or more; and rosea, like the preceding, with pink flowers. Give sheltered place, and transplant in spring.

Kaulfussia amelloides, blue flowers; 12 inches; requires sheltered place and dry soil.

Lasthenia californica, bright golden yellow flowers, requires shelter and light soil; 9 inches.

Leptosiphons densiflorus, lilac, and densiflorus albus, pure white; 18 inches; must have shelter and well-drained soil, then give fine trusses of flowers.

Linum azureum, pale blue flowers; 18 inches. This also requires a dry soil and sheltered situation.

Lupinus nanus, blue and white flowers, and nanus albus, pure white, both 18 inches; the spikes of these are very handsome without the coarseness of the perennial species. A large breadth of these Lupins proved very useful.

Nemophilas atomaria, white, chocolate spots; discoidalis, black, white margin; insignis, blue, white centre; insignis alba, white; and maculata, white, veined and spotted with purple. All 6 inches, and for beds or edging excellent where there are not cats. These animals sometimes fawn the plants out of existence, often leaving the plants alone until coming in bloom. Very beautiful in pots.

Nolana atriplicifolia, blue, white, and yellow flowered trailer. Sow in sheltered place, and transplant seedlings in spring. Makes a fine bed.

Platystemon californicus, pale yellow; 1 foot. Must have shelter and dry soil.

Saponarias calabrica, little pink star-like flowers, compact growing; good in beds or borders; and calabrica alba, white; both good for beds or edgings.

Silenes pendula, bright pink, 1 foot or more; alba, white, 1 foot or more; compacta, rose pink, 6 inches; and pendula compacta alba, white; 6 inches. Well known plants for spring bedding, being sown earlier for that purpose, but fine when sown in September for early summer flowering.

Venus' Looking Glass, blue and white; dwarf plants for edgings or beds, very beautiful in early summer.

Virginian Stock, red and white, 6 inches. Both do well in any soil, and very floriferous.

Viscaria oculata, rose colour with crimson eye. In sheltered place and light soil this plant is very beautiful; 18 inches.

Whitlavia grandiflora, bell-shaped violet blue flowers; 18 inches. Requires sheltered place, transplanting in spring.

The seeds should be sown during the first fortnight of September, and in well-drained soil, as it is damp that ruins most of them in the seedling

state, and to get them up and away the soil must be duly attended to in watering, never making it too wet. Another point is to thin the plants so that they stand clear of each other for the winter, and any spare ones then placed in pots, and these plunged in ashes under a wall facing south or other good aspect, will come in finely for window box or other decoration, and from variety alone prove very attractive. The more tender should be moved to the flowering quarters in March or April. Most, however, do well in borders fronting shrubs, and with proper attention give a profusion of bright flowers during the early summer months.—G. ABBEY.

HARDY CLERODENDRONS.

ALTHOUGH most of the species of Clerodendron require a stove or greenhouse temperature, there are two which are perfectly hardy in the southern counties and in favoured parts of the midlands of this country. The species under notice are C. fœtidum, a Chinese shrub, and C. trichotomum from Japan. Both are good late flowering shrubs, and are well worthy of notice.

The habits of the two differ in various respects. C. fœtidum makes a quantity of soft sappy growths each year, which during winter die down to the ground. When growing in fairly good ground the growths average 4½ to 5 feet in height. The leaves are large and handsome. They are cordate, with serrated margins and acuminate apices. The leafstalks are long, and the blades 6 to 9 inches across, dark green above, silvery beneath. The veins are very prominent, and, like both surfaces of the leaf, are thickly covered with purplish hairs. The flowers are rose coloured and produced during the latter part of August and September in large terminal corymbs. The great drawback to this plant is the most unpleasant odour given off when it is rubbed.

C. trichotomum makes a bush 8 or more feet in height, with a large spread. The leaves are light green, and much thinner than the former, but like that the veins are very pronounced. The leafstalk is several inches in length, but like the blade is found to vary considerably on different leaves on the same plant. The blades are ovate and acuminate, sometimes 9 inches long by 6 inches wide, dwindling on various parts of the stem to half that size. The flowers are produced terminally in large loose cymes. The individual flowers are striking in appearance. The calyx, which is made up of five sepals, is angular, the points and margins being red, and correspond in colour with the two bracts which are found at the base of each flower and the tube of the corolla. The free portions of the corolla are white, star shaped, and about 1 inch across. From the mouth of the corolla tube the stamens and style protrude 1 to 1½ inch. The flowering period of this is August and September. An additional recommendation for this is that the flowers are very sweetly scented. A bush in flower makes its presence known several yards away. They thrive in any good soil, sandy soil being preferable to very heavy; liberal top-dressings of farmyard manure will be found beneficial once a year. Both species throw up suckers readily, and can be quickly propagated by division in spring.—D. K.

CULTURE OF HYACINTHS.

Now the bulb season is with us, a few remarks on Hyacinth culture may be welcome to some readers of the Journal. Roman Hyacinths being the earliest, a word or two may be devoted to my system of cultivating these most beautiful early and late flowers. The spikes of white fragrant blooms are charming to see, and are useful in many ways, especially for wreaths, sprays, buttonholes, and all kinds of decorations. Select medium size hard bulbs, as I find these start more freely than larger softer ones. A compost of equal parts of leaf soil and loam with a good sprinkling of sharp sand is excellent; then get some boxes, about 2 feet by 1 foot, and 3 inches deep, inside measurement, well drain and half fill with the compost. A box will be found to hold about fifty bulbs. Cover with more compost, just leaving the crowns clear of everything, and the bulbs firmly placed.

Take a corresponding box, and reverse it over the one just finished; fill another box, place on the top, with another reversed over, and so keep on till all are finished, as they then stand in one heap instead of occupying so much space, which is often needed for other things. They also keep themselves dark, but it is better to throw over them a cloth or mat. If done like this, the compost being moist, they will stand in any shed if not too dry, and will not require water. Growth soon commences, and when well on the move transfer them to good cool, airy, and light quarters, shading gently for a few days, also giving a copious watering. Such, in brief, is my method of procedure, and the majority produce three spikes of bloom, perfect in all respects. If they are required for succession, a little heat brings them into bloom in about ten days, while if necessary when the flowers are opening they can be potted, five bulbs in a 5-inch pot, taking care to pot evenly.

Dutch Hyacinths should be good, hard bulbs, potted into a thoroughly sound compost of equal parts of loam, leaf soil, and decomposed manure, with a little sand. Pot singly in clean 5-inch pots, with a little manure over the crocks. The crowns must be left exposed, and all must be put in a cold frame for two or three days. Then water them well twice over; two days after this get clean 4-inch pots, and reverse them over each bulb with a piece of slate or tile placed on the holes, fill in between with cocoa-nut fibre or leaf soil; keep the lights off in dry weather, except at nights.

When the growth is about an inch or more up the pieces of slate or tile should be taken away, for a few days first; then remove the pots, but choose a dull day if possible, or shade thinly, as if the pots are removed too soon the growth does not come nearly so strong. If any badly formed ones are found these should be forced, and the remainder well fed and naturally brought along, always being careful not to allow water to get into the flowers or growths. If the above system is carried out the grower may rest assured as to the results.—R. BASSIL, *Panybourne*.

CYCLAMEN PERSICUM.

I CONSIDER that the Cyclamen at fifteen months' growth ought to be at least 1 foot in diameter, having a dense mass of thick variegated leaves standing almost erect, and the flowers not more than 2 or 3 inches above the foliage. The flowers themselves should be broad in the petals, about 2 inches in length, nearly round at the ends, and having a slight regular twist in each segment of the corolla.

I will give a description of how I proceed from the commencement, as I generally prefer raising my own plants from seed. The seeds are sown in June, and put in an old Cucumber or Melon frame, with a temperature of about 65° or thereabouts. In six weeks the first leaf will be seen pushing itself through the soil; and when such is an inch in length the plants may be transplanted to a pan, still retained in the pit, and carefully shaded from hot sun with thin canvas, as a glaring sun I consider at all times highly detrimental to them, but especially when the plants are young. Towards the end of September I select a few of the strongest plants and put them in small pots, still retaining all in the frames close to the glass until the end of October, or even much later, according to the mildness of the season, as I find the young plants do better kept close in an old Melon frame, where a little heat still remains in the fermenting material. As soon as frost or cold weather sets in, all the Cyclamens are placed on a shelf in the conservatory, where the thermometer is not allowed to fall below 45°. Through the winter they do not grow much, but if the above temperature is maintained they will be found to have increased a little, which is all that is desirable. Those plants potted in autumn will require a shift into a size larger pot in April; those in the pans should be potted, and either retained in the conservatory, or, what is better, put in a frame with a little bottom heat for a month or six weeks, then about the end of May put out in a cold frame facing south-east, kept close for a few days, but eventually fully exposed during the daytime. When the plants are in this cool frame they should never be too much crowded, but allowed some few inches between the leaves, so that air may freely circulate, and prevent that drawn appearance which must at all times be carefully guarded against. The system I am advocating, it will readily be seen, is never to allow Cyclamens entire rest, but to always keep them growing, however slowly, and not, as is the custom with some growers I know, to let them partially die during the summer months.

In the management of old plants, if retained, I should adopt much the same system as with the young ones, except that they are not in spring introduced to a frame with bottom heat, but partially shaken out of their soil, potted lightly, not pressed too hard, then placed in a cool frame and kept close for a fortnight or three weeks. If the weather is hot during the months of June, July, August, and September, invariably sprinkle water overhead once in the forenoon, besides the usual watering on the soil; but it must be done with a watering pot having a fine rose, otherwise the foliage will be bent down by the weight of water, and eventually the leaves will not be erect and compact, which they ought to be. Another caution I must also give in reference to watering over the foliage, and that is never to close up the lights for the night until the plants are quite dry, otherwise you will have them tall, which, as I said before, must of all things be avoided. My plants are generally taken into the conservatory in full bloom early in October, when they continue to throw up flowers until the end of April, if not wished to seed from.

About Christmas a little liquid manure is weekly applied with undoubted advantage, and the bloom will be much prolonged by this timely stimulus. Should you wish the Cyclamen to flower for some months, it is of the greatest importance that all blossoms should be removed as soon as the tips of the reflexed limbs become tinted with brown. As soon, then, as the ends of petals become discoloured, they should be pulled out by giving a sharp snatch to the bloom, so as to detach it close to the corm; for if not entirely removed the remaining portion decays, and the decomposition spreads over the whole leaf as well as flower-stalks, and the plant will not completely recover that season, even if the evil be detected in its earlier stages. I mention this because occasionally, with extreme vigilance, it will occur in the most unsuspected way, and I would advise some of the blooms and leaves to be removed and the centre dusted over with sulphur, as the only means of saving the plant, which is sometimes of consequence if a well-known good variety.

The soil best suited to the Cyclamen in all stages is one composed of two-fifths coarse leaf mould, the same quantity of very light soft yellow loam, one-fifth dry cow manure, and sufficient fine white sand to prevent running together. The cow manure should be collected in fine weather, and it would be advisable, after rubbing small, to pour some nearly boiling water over it to kill all seeds, which are very troublesome if not destroyed in this way. The leaf mould should also be well wetted, and mixed with cow manure and sand; the loam should be ground down quite fine in a dry state, and mixed with the other ingredients, and you will then have the very best compost it is possible to make for growing the Cyclamen in.—S. H.

Notes & Gleanings

EVENTS OF THE WEEK.—Horticultural Londoners will find sufficient to interest them during the coming seven days. The National Dahlia Society will hold its annual show at the Crystal Palace on Friday and Saturday, September the 3rd and 4th. On Tuesday, besides the meeting of the Committees of the Royal Horticultural Society at the Drill Hall, the National Chrysanthemum Society will hold its first show for 1897 at the Royal Aquarium. On the 8th and 9th the exhibition of the Derby Agricultural and Horticultural Society will be held.

—— WEATHER IN LONDON.—Very heavy indeed have been the rains in London since last Wednesday. After our pages went to the machines on that day there were several drenching showers, while on Thursday evening there was a constant downpour from about five o'clock until nine, when it ceased until eleven, resuming again at that hour and continuing for some time. Friday was fine, and Saturday showery. On Sunday night the wind gathered strength, and rain fell heavily after eight o'clock. There was more rain on Monday, but the heaviest was during the afternoon of Tuesday, when we had quite a deluge, accompanied by thunder and lightning. Wednesday was very wet.

—— CRYSTAL PALACE FRUIT SHOW.—We would remind our readers that entries for the Show of British-Grown Fruit, which will be held at the Crystal Palace, under the auspices of the Royal Horticultural Society, on Thursday, Friday, and Saturday, September 30th, October 1st and 2nd, close on Saturday, September 25th. After this date none can be accepted. It is confidently anticipated that the exhibition will again be a magnificent one, and possibly superior to its predecessors. There are about twelve dozen classes in the schedule, so that no one should experience any difficulty in finding a suitable one. Schedules and all necessary information may be had from the Secretary, Royal Horticultural Society, 117, Victoria Street, Westminster, London.

—— DERBY SUMMER SHOW.—On Wednesday and Thursday, September 8th and 9th, the summer Show of the Derbyshire Agricultural and Horticultural Association will be held. There are considerably over 100 classes scheduled, of which some are open to all, others restricted to persons who do not employ a regular gardener, and the remainder to cottagers. In each of these sections the prizes are fairly good, the best, of course, going in the open classes. The one that should attract competition is that for a group on a space of 200 superficial feet, to include foliage and flowering plants. The prizes number five, of the respective values of £20, £15, £10, £5, and £4. A table of cut flowers has £21 allotted to it, and a decorative dessert table a similar amount. The sum of £6 is offered for three bunches of black Grapes, and also for three bunches of white Grapes. Special prizes are offered by Messrs. Sutton & Son, E. Webb & Son, and J. Carter & Co. for vegetables.

—— MR. G. W. CUMMINS.—We regret to learn that the above well-known competent all-round gardener has found it necessary to resign his position as head gardener to A. H. Smee, Esq., The Grange, Carshalton, after a term of sixteen years of successful service. Mr. Cummins says that since the great loss sustained by the lamented death of Mrs. Smee, who shared with her husband the delights afforded by their interesting garden, as well as by the death of Mrs. Cummins, "a gloom has apparently been hanging over the place," and he would, therefore, like to obtain an appointment in another district where opportunities are afforded for successful gardening. Apart from the unconventional picturesqueness of Mr. Smee's garden, with its Ferns and hardy plants, the most prominent features are the great collections of hardy fruit and Orchids. Though the garden is a semi-swamp Mr. Cummins has, by dint of thoroughly good work, won many of the silver-gilt and silver medals of the Royal Horticultural Society for collections of fruit, also several cultural commendations, first-class certificates, and medals for Orchids. He has also been awarded the certificate of the Surrey County Council for services rendered in educational work in domestic gardening. He speaks in the highest terms of Mr. Smee as an employer, and feels it an honour to have served him and his late estimable helpmeet so long. Mr. Cummins is in the prime of life—a quiet, persevering man, possessing a thorough knowledge of his business, and all who know him will be pleased to hear of his finding congenial occupation again.

—— ROYAL HORTICULTURAL SOCIETY.—The next meeting of this Society will be held on Tuesday, September 7th, in the Drill Hall, James' Street, Victoria Street, Westminster, from 1 to 5 P.M. A lecture on "Pitcher Plants" (Nepenthes), by Mr. Harry J. Veitch, F.L.S., will be delivered at three o'clock.

—— GARDENING APPOINTMENTS.—Mr. J. Dixon, gardener to Matthew Burnside, Esq., The Lindens, Helensburgh, has been appointed head gardener to J. R. Barlow, Esq., Greenthorne House, Edgworth, near Bolton. Mr. R. I. Inglis has been engaged by J. Stuart, Esq., to take charge of the gardens at Stonehurst, Ardingley. Mr. King has been appointed to succeed Mr. G. A. Bishop as head gardener at Wightwick Manor.

—— A CHARMING COMBINATION.—When walking through the Gardens of the Royal Horticultural Society a few days ago I was much struck with several of the beds that flank the main walk. The arrangements in all cases had been simple, and the results highly satisfactory. Of all, however, the bed that, in my opinion, looked the best was formed of the Silver Pelargonium Princess Alexandra and Ageratum mexicanum compactum The Zoo. All the plants had made splendid growth, and the rich blue of the Ageratum was grandly set off by the white and green leaves of the Pelargonium. I have seen beds of the same combination before, but never one to equal or even approach this for effect. —D. R.

—— WOLVERHAMPTON CHRYSANTHEMUM SOCIETY.—At a recent meeting the Chairman (Mr. G. A. Bishop) expressed his regret that, having resigned his position at Wightwick Manor, he would have to sever his connection with the Society, and vacate the position of chairman. Mr. Bishop spoke at some length upon various matters, and said in conclusion that it had given him great pleasure to have been associated with them as their Chairman in the past, and he wished them every success in the future. Mr. Richard Lowe testified to the loss the Society would sustain through the removal of Mr. Bishop from the district, and suggested as a mark of appreciation a suitable testimonial, this being seconded by Mr. J. E. Knight, and supported by several members.

—— SUTTON'S BEST OF ALL BEAN.—This remarkably fine Runner Bean is the only one now grown at Malshanger, as it so greatly excels all others. The rows of it I saw there the other day are 10 feet in height and perfect in growth and in fruiting from bottom to top. What a wonderful crop each row carried, and what beautiful straight, handsome, clean pods averaging 12 inches long! What a Bean would this be for market, and how the samples would sell as compared with the wretched ones gathered from pinched rows, the pods being short, generally much curved, and dirty, whilst the major portion are quite old and hard. The town consumer of Runner Beans never does taste such beautiful young straight tender samples as were those produced so abundantly at Malshanger.—A.

—— THE CHISWICK VINERY.—The great vinery in the gardens of the Royal Horticultural Society at Chiswick is now at its handsomest. The many Vines are all carrying good crops of fruit, and it is surprising to what size many of the bunches towards the top of the structure have attained. The fact that there is no sign of insect pests apparent on any of the leaves or wood is strong testimony to the careful attention the Vines have from Mr. Wright and his assistants. The house contains about thirty varieties, and affords an admirable place for close comparison between them, and as such is of material value to those not familiar even with the best known sorts. The weight of the whole of the bunches must be enormous, while the thinning of the berries was the work of weeks for half a dozen men.—VISITOR.

—— THE APPLE CROP.—Reports of the Apple crops have much improved from the big orcharding districts within the past few weeks. As the fruit increases in size so it shows up more plentifully on the trees, and owing to the dripping time the latter have held their fruit better than they did last year, when on account of the dryness of the season many Apples fell prematurely from the branches. Furthermore, there have not yet been any strong gales to disturb the immature crop, but the time of the equinoctials, which usually play such havoc, has not yet arrived. Early cooking Apples meet with good demand, and a better hand can generally be made by selling early—before the fruit is quite full grown—than later on, when markets are sure to be more or less glutted. Pears are selling very dear, and it would appear, says the "Rural World," that good early sorts, and late ones, too, for the matter of that, are not cultivated in this country as extensively as they might profitably be, seeing how suited our climate and soil are for producing the fruit.

—— EXHIBITING GRAPES.—Thanks are due to Mr. J. Hudson for showing how "big" bunches of exhibition Grapes were "made" for the recent Palace Show, also to "On-looker," for explaining to the readers of the *Journal of Horticulture* how it was done, and his comments thereon. But as an exhibitor I protest against that "ardent youth" having all the credit. Surely the exhibitor in question could not have been so blind as not to see what "his young man" had done when taking the "big" bunches from his box and staging them—which I saw him do—without noticing how "big" they had grown. I have at the present time 580 bunches of Grapes under my charge, but no "young man" would deceive me by adding shoulders or taking from them.—EXHIBITOR.

—— FIGS AT CHISWICK.—The magnificent collection of Figs in the R.H.S. Gardens is now about finishing its second crop of fruits. An examination of the several varieties here grown causes one to wonder why more are not cultivated in large establishments where the luscious fruits are appreciated. In most places one sees Brown Turkey or Negro Largo, or some other equally well-known variety, but rarely are the choicer flavoured ones in the collection under notice met with. Such as Bourjassotte Grise, Bourjassotte Noire, Nebian, Grosse Violette de Bordeaux, Monaco Bianco, and Pingo de Mel are perfect as regards flavour, while under Mr. Wright's experienced attention they give capital crops of fruit. I consider it is a pity that they are not more frequently seen.—WANDERER.

—— STRIPED FRENCH MARIGOLDS.—A very high class strain of these flowers is that grown by Messrs. Dobbie & Sons at Orpington. They plant several thousands, and resolutely save seed from the very best only, although I could, when recently looking over them, see little difference. Mr. Fyfe showed an interesting trial he was making of the effects of starving in one case by partially pulling a plant out of the ground and of feeding, another close by being occasionally dosed with liquid manure, which had made it very robust. So many blooms in each case will be saved, the seed sown, and planted out to mark results next year. As grown here, and a product of constant selection, the plants are less coarse growing than is usually the case. A distinct novelty has been produced this year, the petals being of a lemon ground instead of orange, and striping is seen in a marked degree. This will doubtless prove to be the progenitor of a new strain.—A. D.

—— EXETER SHOW.—The Devon and Exeter Horticultural Society held its summer exhibition on Friday, August 21st, on the lovely Northernhay. Had the weather been equal to the show many more visitors would have passed the gates. Special prizes were given by the Mayor of Exeter for the best ten dishes of fruit, and by the Rev. A. H. Cruwys for vegetables. In quality the show was the best for three or four years. The groups were better than anything of the sort previously seen in Exeter. Mr. W. Rowlands, gardener to Mr. W. Brock, J.P., of Exeter, took the premier prize of a silver cup, value £5, in each of the two classes arranged. The centre of each group was formed by a pleasing arrangement of cork, with plants judiciously disposed, while at the bottom there was a belt of bloom, which set off the whole very happily. Mr. G. Lock, gardener to Mr. Hill of Crediton, came second in each instance. Mr. Richards' group was also good. There were 109 classes and eighty-one exhibitors. The principal exhibitors were Mr. F. Bradshaw, Mr. G. A. Spottiswoode, the Hon. Lady Walrond, Sir Dudley-Duckworth-King, Mr. W. C. Cleave, Mr. Trehawke Kekewich, Sir John Shelley, Bart.; Mr. B. H. Hill, Mr. W. Brock, and Sir John Ferguson Davie.

—— ISLE OF WIGHT.—The Ventnor and Undercliffe Horticultural Society held its sixty-second show in the beautiful grounds of Ventnor Park on Wednesday, August 25th. Three marquees were well filled with fruits, flowers, vegetables, and plants. The quality of the former was especially good, whilst vegetables maintained their standard of excellence. The exhibit of Mr. W. W. Sheath, gardener to Miss Mitchell, Macrocarpa, Ventnor, consisting of large specimen Fuchsias, and Tuberous Begonias came in for much praise. Mr. A. Richards, gardener to J. Jessop, Esq., Cliffe Dene, Bonchureh, received the I.W. Horticultural Improvement Association's certificate for a collection of vegetables, which secured him the premier award in a special class for Messrs. Sutton's prizes. Amongst the other prizewinners were Messrs. G. Witty, F. Woods, F. A. Hoil, S. Cotton, F. Bastiani, J. and F. Niblett, W. Taylor, and W. Heath. The Secretary did excellent work, and deserves a word of praise for bringing one of the best shows ever held in the Undercliffe to a successful conclusion. The park in the evening was illuminated with fairy lamps and Chinese lanterns, which proved very attractive to the many visitors. Messrs. Peed & Son, Upper Norwood, staged fine blooms of Gloxinias, Tuberous Begonias, and leaves of Caladiums, which were greatly admired.—S. H.

—— ONIONS AT MALSHANGER.—It is an odd thing, but it is so, that hitherto most of the finest Onions grown or exhibited have been raised south of London. At Malshanger Park, Basingstoke, Mr. Kneller has Ailsa Craig in wonderfully fine form, grand bulbs, ranging from 2 lbs. to 3 lbs., and a big lot just a little lighter that should make, if planted, a superb seed stock. Seasons or soils seem to make little difference in the production of these splendid bulbs, raised from winter sown plants, a practice now so common. Whilst the Malshanger soil is light and rather close on chalk, that at Hackwood Park, but four miles away, is stiff loam on chalk, but at a considerable depth. Mr. Bowerman's bulbs are yet of the very finest, as was evidenced at Shrewsbury, where he had the best. Mr. Pope at Highclere and Mr. Lye at Sydmonton are both fine Onion growers.—D.

—— DAFFODILS.—Mr. Wm. Baylor Hartland sends us a copy of the Jubilee edition of his Daffodil album. If our verdant enthusiast will permit, we might almost describe it as the three P's—a combination of poetry, prose, and pictures. It covers what is described as the "starlit era"—1837-1897; but whether he regards the portraits of Watt, Stevenson, Edison, and Röntgen, or the sixty Daffodils that follow, as the bright particular stars, is not quite clear, so those who peruse the album must take their choice. Mr. Hartland says, "If we had such a copy in 1884 it would be worth £100." This reads almost like a confession by the producer that he has been for once a little behind the times, or he would have prepared something of the kind thirteen years ago. However, we happen to have had Mr. Burbidge's beautiful work. Miss Gertrude Hartland has represented the flowers with great clearness in the album, but if we might venture to suggest a correction in the nomenclature of Horsefield's fine variety, we should let it carry his full name, Horsefieldi, and not leave a letter out, as is so common in catalogues.

—— RUBBER PLANTS.—The investigation of rubber-yielding plants has resulted in drawing attention not only to new sources of supply, but in increasing the quantity available for commercial purposes. The remarkable rubber industry started in the Colony of Lagos in 1889 is described (*K.B.*, 1895, p. 241), and a figure is given of the plant, which hitherto had not been known as a source of commercial rubber. The Lagos rubber industry in two years developed into an export value of nearly £400,000. A somewhat similar industry had been started on the Gold Coast by the efforts of Sir Alfred Moloney, with exports in 1893 of the value of £218,162. Practically all the more important sources of commercial rubber are reviewed, while particulars respecting new rubber plants, such as Forsteronia graeilis in British Guiana, F. floribunda in Jamaica, and Sapium glandulosum in the United States of Columbia are also given. It may be added that information is desired at Kew respecting the plants yielding the Esmeralda rubber of Guiana (*K.B.*, 1892, 70) and that exported from Matto-grosso in Brazil. There is a doubt as to the distinction, if any, existing between caoutchoues yielded respectively by the Ule and Tuno trees of Central America. One of these is usually referred to Castilloa elastica, but botanical specimens are necessary of each tree to definitely decide the point.—("Kew Bulletin.")

—— MAIZE AS AN ENGLISH CROP.—Amongst the most useful, as well as valuable, of fodder plants, we may certainly class Maize. Business has recently taken us into Kent, and here on two large holdings we saw Maize growing most luxuriantly. Two, at any rate, of the principal farmers in the district we were in certainly are fully convinced of its value, for we saw not merely small plots but several acres being grown. The weight of its produce is stated to be about 30 to 40 tons per acre. The use it is put to is to provide food for milch cows and rams. Why, then, is so valuable a crop as this, producing in a very dry year such as the present a crop of grand succulent food, not more generally grown? Possibly because of the fact that it is looked upon as being a crop that is uncertain or doubtful, or, perhaps, from want of knowledge as to its great value. That it can be grown, and successfully grown too, is demonstrated not only by its success on the farms we saw, but in numerous other cases that one might quote. Then, again, the procedure of cultivation is very simple. It needs no particular preparation other than a good seed-bed and a fairly well manured piece of land. The great trouble its successful growers find is to keep the rooks from working at it when first sown or just coming up. Experience has, however, proved that if care is taken to properly bury the seed at a depth of 1½ to 3 inches, little or no trouble will arise from this source. Simple and easy then of production is this crop, which, were it more generally known, would soon, we are fully convinced, become not only one of the most popular, but one of the most valuable of all our fooder plants.—("Farmer and Stock-breeder.")

MEMENTOES OF SHREWSBURY.

On page 188 of our last issue we called attention to two medals that were being presented by Lord Kenyon, the President of the Shropshire Horticultural Society, to the two gardeners winning the largest amount in prizes—one in the open section, and the other confined to Shrewsbury. These were taken by Mr. J. McIndoe and Mr. C. Roberts respectively. Of this medal we are now enabled to give a photographic reproduction (fig. 30), showing both the obverse and the reverse. As no others will be cast from this die, which was designed by the Countess Feodore Gleichen, the medals will be the more highly valued by the recipients. On the page facing this appears a representation (fig. 31) of an epergne, two similar to which were purchased by horticultural friends, and presented to the Hon. Secretaries, Messrs. Adnitt and Naunton. These were very beautiful and elegant in design.

We are glad now to be able to state that rather over £160 was taken in the two days, more than has been taken on any previous show. Though rain fell heavily after 4 P.M. on Wednesday, the receipts were £25 above the previous best. The second day was fine on the whole, only slight showers falling, and these not sufficient to mar the proceedings. About 60,000 persons passed the turnstiles on the second day. By this it will be seen that the show was a record in more ways than one.

Fig. 30.—LORD KENYON'S MEDAL.

Shrewsbury Show Notes.

There was much to draw out the observatory powers of every visitor to the great show on the Quarry, Shrewsbury, much on the surface, but much more here, there, and everywhere not specially prominent, which was suggestive of consideration, as "A. D." has shown in his "Comments." If the observer were a thoughtful, ruminant sort of man, fond of noting little things, the side views, these inconspicuous things would be very likely to set him a thinking much more deeply than would those which stood out and compelled attention. Such is the opinion of the writer with respect to one function which, though the pencil of the reporter brought it to the notice of all in its salient features, was yet somewhat of a semi-private character; that was the luncheon where the officers of the Society, the deputation from the R.H.S., the Judges, and other invited guests were assembled.

It was an interesting and impressive scene, and a thorough gardeners' reunion. Let us look at it closely: it will bear it. Take first, as is right and fitting, the Chairman of the Society, the Right Hon. Lord Kenyon, who presided. A county nobleman, inheriting generations of courtly manners and gentle breeding, with a deep-seated love for all things connected with the county and neighbourhood and its people, he presided with easy grace and quiet dignity; not saying too much, but saying it well, he struck the key-note of the gathering in just the right words to make everyone feel at home and comfortable, and that, by the way, is the secret of a happy meeting. Then there was the genial, happy-faced, and pleasant-spoken Bishop of Shrewsbury, the Right Rev. Sir Lovelace Stamer, with Dean Hole, and the Rev. W. Wilks, the clerical Secretary of the R.H.S., representing the interest taken by the Church in horticultural matters. Then the courtly President of the R.H.S., Sir Trevor Lawrence, Bart., speaking with dignified eloquence on many things pertaining to horticulture, what it has done and what it can do, and of the Society he loves and cares for with such anxious care; and of this kindred Salopian Society which had so astonished him by its vigorous life and the glorious beauty of surroundings. And there was the deputation itself, notable in character and person, every member of which is an expert in some of the many phases of gardening.

The speech of the Dean of Rochester was admirable in every way, and characteristic of the man, both as a Dean and a gardener. It was full of wit and humour, "gay wisdom," and cheery optimism, with underlying tones of the higher things which concern all men. It sparkled with gems of thought as well as scintillations of wit and humour, and lifted gardening into that high position it ought to occupy in men's minds. The municipality of Shrewsbury was well represented by Lieut.-Col. Courcy Peele, with his patrician face and cheery speech, who most heartily and courteously welcomed the deputation from the R.H.S. and all other visitors to the town and the show. Then the Committee of the Society with its two efficient and ubiquitous Hon. Secretaries (Messrs. Adnitt and Naunton), composed as it is of every section of Shrewsbury people, from the town clerk, aldermen, councillors, magistrates downwards, all working unitedly and heartily to make the show a success. Then the Judges, representing every position in the horticultural world, from Mr. Owen Thomas, who presides over the gardens of the Queen; Mr. McKellar, who is head gardener to H.R.H. the Prince of Wales; Mr. S. T. Wright, the present Superintendent, and Mr. A. F. Barron, the late Superintendent, of the gardens of the R.H.S.; Mr. John Wright, the editor of "our Journal," down through ducal gardeners, trade gardeners, private gentlemen's gardeners, to the "spade and wheelbarrow" gardener, the writer of this note, and when they stood up together whilst Mr. Owen Thomas was returning thanks for them after the toast of "the Judges," the present writer thought they looked a very reliable, capable, practical body of men, most of them greybeards, having a life experience.

The ladies present must not be left out, as by their presence they lent an additional charm to the gathering; the Hon. Miss Kenyon (sister of the Chairman) and Mrs. Reynolds Hole (wife of the Dean of Rochester), with others, by their smiles and animated conversation most excellently supported the Chairman, and added a liveliness very acceptably recognised. One toast, and a very important one in the opinion of the present writer, was omitted, and that was the "Press." What would gardening and gardeners be or do without the gardening Press? the literature of which is excelled by none in the whole of the professions or trades of the country.

The great feature of the function was its happy, free-and-easy character, and its opportunity for chat with old friends; with intercourse with magnates in the gardening world by those who only knew them by names, but who found them pleasant, genial, chatty, ready to speak to any (even to the "spade and wheelbarrow" gardener), and to be spoken to. In this respect the time was all too short, but it will long remain a pleasant memory with one person at least, who also thought it deserved chronicling in the pages of the *Journal of Horticulture* by a special note.—An Old Provincial.

P.S.—The very interesting part of the proceedings at the luncheon of the presentation of two beautiful epergnes to the worthy Hon. Secretaries of the Shropshire Horticultural Society ought not to have been left to a P.S., but so it is. Of that presentation no more need be written than what Sir Trevor Lawrence so fitly said, that the recipients were so worthy to receive them that the gifts might have been more worthy to receive.—An O. P.

HARMFUL AND HARMLESS GARDEN MOTHS.—7.

A GOOD old gardener I once knew owned to feelings anything but friendly towards the entomological brotherhood. Though aware they killed and captured insects, he looked upon them as, in some sense, guardians or defenders of his enemies, and he had a special grievance. "They get over insects," said he, "from foreign parts. Of course they turn them out, if they have more than they want, in our gardens or fields, and very like they may breed here."

As a matter of fact, however, which is rather surprising, very few exotic insects have settled themselves in Britain, and I do not think entomologists are responsible for the introduction of any one. Still, I happen to be aware that several times, by way of experiment, companies of young gipsy caterpillars have been liberated to see whether they would be the parents of another brood, but either they died, or, if any moths emerged, their progeny perished. Yet the species stands on the list of British insects, formerly not uncommon, it is stated, though now rarely found wild here. Certainly there is no need to re-establish it, since we do not want it in our gardens or orchards. On the Continent this gipsy (Ochneria dispar) is still abundant and mischievous. I am afraid our friends in France and Germany are rather good-natured to the caterpillar, which, having a garb of red, grey, and black, also a large head, is fairly conspicuous at all ages; we probably would soon detect it on our fruit trees. Nor is the large moth hard to find during August, when it emerges, the eggs then laid hatch in spring. Presumably, the name of *gipsy* was suggested by the roving habits of the caterpillar.

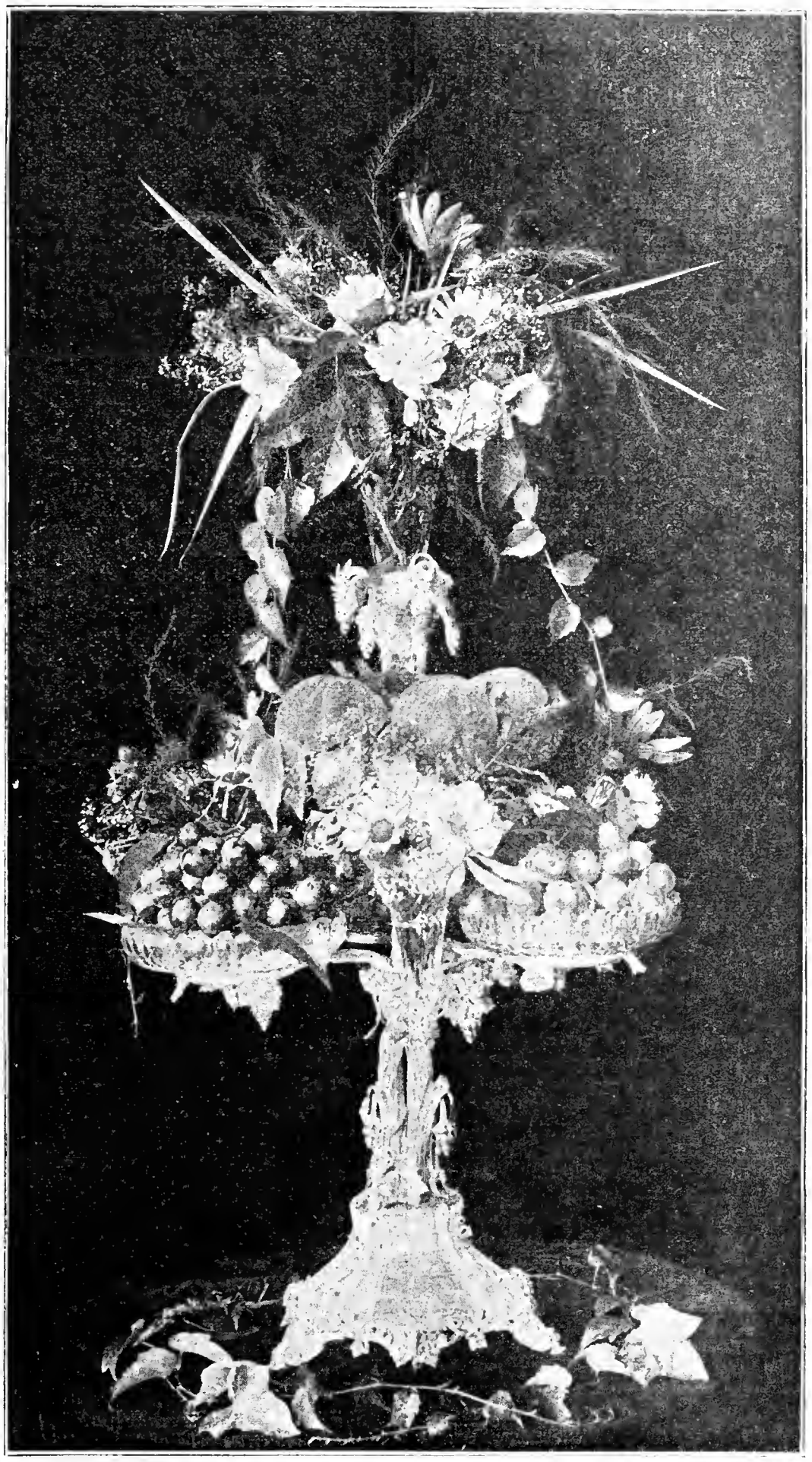

FIG. 31.—EPERGNE PRESENTED TO MESSRS. ADNITT AND NAUNTON.

The lackey moth (Bombyx neustria) is no stranger to us, at least in its caterpillar stage, when it is apt to be a persevering attendant upon the growth of some of our shrubs and trees. It can eat the foliage of many species, but we have to complain chiefly of the harm it does the Apple, especially when it has made a settlement in a large orchard. Both in orchards and gardens the moth secretes itself by day. Occasionally we disturb it from repose amongst grass or herbage in July or August after dark; the females are busy depositing their circlet of eggs round the twigs, which remain unhatched till spring. These should be removed or crushed whenever seen; they are regularly arranged in rows placed closely together, a batch of them numbering from 100 to 200, covered, too, with a glossy enamel, which protects them, and, as Mr. Wood thinks, suggested the name of "lacquer," or lackey moth, but here I consider he is wrong. It is reddish brown, with a faint bar across the fore wings. Some specimens are seen yellow, except the head and body, which are always red. But lackey probably alludes either to a habit of the caterpillar when young—that of going out and returning to the nest they make as a night shelter in parties, one slowly following another; or else, as Westwood remarked, it was given because the stripes on the insect resembled those which used to adorn the coats of footmen, but are now almost out of date.

The nests which are constructed by each colony, though small at first, are soon sufficiently apparent in the forks of branches, and the gardener can easily remove them with their tenants during a shower, or after sunset. Having passed the third moult they scatter about, and each caterpillar is independent; not unfrequently one of the high winds we sometimes have in June brings down numbers of them from the higher boughs. If we examine one it seems slender, and as if its skin was too loose. It is striped in several colours; on the dull blue head are a couple of black spots, which we might take for eyes, but such they are not, the eyes of caterpillars being undiscernible, as a rule. By an old French law, the owners of orchards were liable to a penalty if they had not by a fixed date in spring cut away all shoots containing webs of the lackey. A curious thing about the cocoon spun by this caterpillar is that with its silk and hairs there is mixed a quantity of yellow powder, in which the chrysalis is also enveloped.

Some years ago, a gardener at a house near Wimbledon Common showed me a specimen of the lappet moth he had captured in his grounds, and which he had preserved as a memento; it might have bred there, but more probably had flown over from the Common, where the caterpillar used to be found on Sloe, Willow, and other shrubs. It is a large, handsome moth, reddish brown and black; when at rest with folded wings it is not unlike a dried Oak leaf, so someone called it Gastropacha quercifolia. The caterpillar would also be somewhat of a surprise to a gardener if he came upon one of full growth, then quite 4 inches long, rather shaggy, specially remarkable for the singular lappets or flaps along the sides above the feet. It is generally noticed in early summer, the moth appearing about August. The new brood feed for a time in autumn before hybernating. On the continent, it is stated that the species is often injurious to young Peach, Plum, Pear, and Apple trees, the

insects being probably more plentiful than in Britain, where it is local or occasional, and not regarded as an enemy. Miss Ormerod's researches, however, brought out the fact that it might damage an Apple crop here, specimens of the lappet caterpillar being sent to her in May, 1893, from the nurseries at King's Acre, Hereford, belonging to Messrs. Cranston & Co. The grey variety had been taken upon a number of Apple shoots, which were stripped of all leaves, and even the ends eaten away.

Walking along a garden path one August day my attention was called by a friend to some delicate little moths that were sitting upon a Hawthorn hedge, and a few hours later they were disporting themselves over the path and beds—adjacent beds. This was the harmless species Cilix spinula, which reposes with the wings folded in roof-like fashion over the body, these wings being pure white crossed by a brown band, with also a double row of smoky spots on the margin. This is not all observable. In the centre of each fore wing is a cluster of silvery scales, which fancy compared to Chinese letters, and so the moth got the English name of "Chinese Character." We might find the caterpillars in June if we wanted them; small and singular they are, really worth examining. There is also a second brood in September I believe. Each has the body very much wrinkled and brown; the head has a two-cleft crown, and the two hind claspers are joined into a spike, which, when walking or eating, the caterpillar elevates in the air. Upon a twig we may come upon the compact gummy cocoon that encases the chrysalis.

No need is there, I should hope, to describe the buff-tip moth (Phalera bucephala), for every observant gardener has at various times seen it upon the trunk of a tree or reposing on a fence, taking advantage perhaps of a sheltered angle in a house, even occasionally settled on some low plant. By day the wings are wrapped about the body, giving it a cylindrical appearance, the tip, with its purple and silvery streaks on the grey, being conspicuous. It is a good-sized moth when the wings are expanded. The species is able to fly high and at a tolerable speed, the females depositing their eggs on many species of trees in and near gardens, often on Elm, Lime, and Hazel, these being placed in batches of thirty, forty, or more. We have had reported instances where the caterpillars have occurred on the Plum, clearing the higher twigs of their leaves. When the weather is gusty, buff-tip caterpillars are frequently blown off their food, and fall upon us as we walk under trees; or we see them in a path, hurrying to escape from a by-passer.

It is one of the few caterpillars that, apparently, attempts to bite if annoyed. While young they feed together in small parties as hatched, working on steadily with their heads close together, and their tails slightly raised, after the second moult they separate. At the beginning of August they are full grown, and display black and orange stripes on a yellow ground colour; the legs are deep black, head also, with a yellow triangle on the face. When undergoing the chrysalis change they simply lie on the earth, or just beneath, unprotected by any cocoon, and are therefore easily discovered and removed. To poultry these chrysalids are quite a dainty, and they hunt them eagerly if they have the chance.—ENTOMOLOGIST.

CALLAS.

SHAKING OUT AND REPOTTING.

WHEN the plants are wholly grown in pots annual attention is needed in the matter of supplying them with fresh soil. The readiest method is to turn out the plants and repot. In many cases the drainage will have become choked with soil probably washing in among the crocks. The latter should be picked out, and the old inert soil shaken away. Whether the crowns are potted singly, or two or more together, it is well to detach the young and weak suckers which surround them, leaving only the strongest, which are likely to throw up a spathe or spathes.

For single crowns 6, 7, or 8-inch pots are the most suitable. For larger pots clumps of several crowns may be selected, each crown a strong one. All weak growth among them ought to be pulled out, and as much of the old soil worked out as can be done without separating the clump. In some cases division may be an advantage, especially if the clumps are very large and have been long in one pot. Large pots may be made up with using single crowns if care is taken in spreading out the roots in the compost, not crowding them in one mass in the centre of pots.

In draining the pots it is best to carefully arrange a small quantity rather than introduce too much haphazard. Cover the crocks with a layer of flaky manure, and over this a slight dusting of soot, which will prevent the entry of worms, affording also a little food for the roots when they reach it in the course of growth. The roots ought not to be placed directly on the soot. A layer of soil must first be introduced.

The compost must be substantial loam, preferably of a turfy character, half decayed, and readily broken up. To four parts of this add one of decayed manure, with sand, charcoal, and a dash of soot, mixing all well together. Each bushel of compost may also have about 2 lbs. of some approved general fertiliser intermixed. Thomson's, Clay's, or Standen's are good. Pot moderately firm, especially working the soil in well among the roots when the latter have none adhering to them. Stand the pots in the shade for a few days, choosing a moist but hard base. Give a good watering immediately after the potting, so that those which have been the most disturbed will not droop seriously. Crowns which have not advanced far in growth will not flag at all..

When the roots begin to work freely in the compost the plants may have the benefit of the full sunshine. Attend regularly to watering, maintaining the soil in a healthfully moist state. In the earliest stages when the weather is dry and sunny, syringing daily will be advantageous. The plants are quite safe and better outdoors than under glass until frosts are imminent in October, when they had better be housed in a cool airy structure, and have abundance of light.—E. D. S.

BOWDEN HILL HOUSE.

FEW, if any, gardens in the West of England have made such rapid progress during the last three years as the above, the country residence of Herbert Harris, Esq. It is situated on a hill side, five miles from Chippenham, having some lovely views to the south and south-west, and commanding a most charming outlook as far as the eye can reach; it is well sheltered on the north and north-east by shrubs and woodland, intermixed with large and healthy specimens of Sequoia gigantea, Austrian Pines, and other Coniferæ. The pleasure grounds are not extensive, though many alterations are being carried out to improve them. The flower beds and borders are very bright indeed; the specimen Fuchsias which are plunged, and the Ivy-leaved "Geraniums" trained over arches, showing up to great advantage.

The gardens are about 200 yards distant from the house, through the newly planted orchard, which contains all the leading varieties of kitchen and dessert Apples. Between the rows of young trees, healthy crops of winter and spring vegetables look quite happy. Here, too, is to be seen a large batch of Czar Violets, with strong, dark, leathery foliage, which promise to render a good account of themselves, the maiden soil evidently being much to their liking. The new potting sheds, Mushroom house, fruit room, packing sheds, all of which have been erected under the supervision of Mr. Penton, are capital structures for their various uses. Near here are some well-arranged flower beds and borders, forming masses of brilliant colours. Chrysanthemums look promising; part of them are grown for large blooms, and others on the bush system. If hard, well-ripened wood is a good criterion, surely these will be in the ascendant during their flowering season. On entering the kitchen garden proper, the beauty of the border Carnations is worth going a long way to see, but as these have been previously noted in these columns, I will leave them, and say they are a grand lot, of which the energetic gardener may well feel proud.

The glass structures, some eighteen in number, consisting of vineries, Peach houses, Melon and Cucumber houses, ferneries, Orchid houses, with a good number of heated pits and frames, are all filled to overflowing with good produce. The early Vines were almost cleared of their fruit; the later ones were carrying good crops of under average quality, and not to the satisfaction of Mr. Penton. Endeavour is being made by root lifting and replanting to rectify the serious mistake committed by planting young Vines in too large and rich borders, thereby encouraging strong and succulent growth to the detriment of fruit-bearing qualities. The Peach trees are practically receiving the same treatment, gross growth difficult to ripen being too prevalent; Melons and Cucumbers showing full crops of good quality.

Orchids have made rapid strides during the last three years, both in quality and quantity, large numbers of imported and semi-established plants having been added to the collection. All are doing remarkably well, and will ere long form one of the largest collections in the West of England. In the Odontoglossum house are about 600 crispums and Pescatorei, mostly imported and doing well, as well as some Miltonia vexillaria. Hanging under the roof glass in the same house are Oncidium Rogersi, Dendrobium infundibulum, Masdevallia Roezli, M. bella, M. Backhouseana, and others. An intermediate house is filled with Cymbidium Lowianum, C. eburneum (which is a great favourite with Mrs. Harris), Sobralia leucoxantha, S. xantholeuca, S. Veitchi, and S. macrantha, with fine plants of Odontoglossum grande, O. citrosmum, and Cattleya citrina. Then there is practically a Dendrobium house, filled principally with good pieces of nobile, D. Schröderi, D. formosum giganteum, D. suavissimum, D. Brymerianum, D. chrysotoxum, D. Pierardi, D. Dalhouseanum; also a good batch of Oncidium ampliatum majus, and pans of seedling Orchids. Following is the Cattleya house, completely crammed with healthy inmates, including such varieties as C. Harrisi, C. labiata, C. Lawrenceana, C. gigas, C. aurea, C. Sanderiana, C. Warneri, C. Gaskelliana, C. Mendelli, C. Trianæ, C. Leopoldi guttata, also Vandas, Lælia anceps, L. a. Stella, L. a. Sanderiana, and many others.

The end house of this range is used for a fine-foliage plant stove, consisting chiefly of useful sized Crotons and Dracænas, splendidly coloured pieces. Arranged on shelves near the glass I noticed useful Calanthes, also a few plants of the Gold Fern (Gymnogramma) which are much cherished for their splendid colour and dense habit. In the fernery we meet with some very fine specimens. Adiantums trapeziforme, Lawsonianum, concinnum, farleyense, cardiochlæna, and cuneatum, with Goniophlebium appendiculatum, all really good specimens, and some other varieties that would soon be equally as good had they more room to develop themselves. A house adjoining the fernery is at present used for decorative flowering plants, such as Lilies, Tuberoses, and Begonias, and is used later for winter flowering Carnations, of which I noticed

numbers plunged in their summer quarters, Carnations, Roses, and Violets being especial favourites with Mr. and Mrs. Harris.

The conservatory is a very prettily arranged building, quite out of the ordinary type. The inside walls are so arranged as to form miniature rocks planted with various Ferns, Begonias of the Rex varieties, small waterfalls trickling down, and fountains playing in the shady nooks having a very cool, refreshing appearance. In the centre of the building is a very fine Tree Fern, around which is arranged a circular group of choice flowering plants. Quantities of plants and cut flowers are required for the decoration of the mansion.

In the kitchen gardens the crops show little signs of the drought; the vigorous growth at once clearly demonstrates that no mere "tickling" of the surface is allowed, but deep tilth and good feeding, cleanliness, and doing the work at the proper time are the most certain roads to "success." Strawberry culture, both forcing and outside, is well carried out at Bowden, Royal Sovereign being the favourite variety, though many others are cultivated successfully. Mr. Penton has a high opinion of Leader, and predicts for it a prominent position. Lettuce Sutton's Mammoth Cos and Summer Favourite were conspicuous with immense crisp heads. The whole surroundings reflect the highest credit on all concerned in the maintenance and management of this garden.—J. F.

STAG'S-HORN FERNS.

THE Ferns popularly known by the above name belong to the genus Platycerium (literally Broad Horn). They form a natural group of plants, and were originally united with Acrostichum; but to my mind they have nothing in common with the species which represents that genus in our ferneries.

Platyceriums are characterised by their large sterile fronds, which are entirely different in shape from the fertile ones; they are sessile, and grow erect and flat, overlapping each other as they increase in numbers and in size. The fertile fronds are stalked, standing out erectly or horizontally from the barren fronds (or shields, as they are not inaptly called in a popular way); they rise from the little depression at the base of the sterile fronds, and are many times dichotomously forked, having more or less broad and obtuse segments, which are thick and leathery in texture, and clothed with a dense covering of peculiar stellate scales, which give the young fronds the appearance of having been dusted over with a white powder; the veins are somewhat indistinct, but are coarsely anastomosed, whilst the receptacle is irregular, but usually occupies he greater portion of the apices of the under side of the segments.

Platyceriums grow naturally upon the trunks and branches of forest trees, and are most successfully grown under cultivation when treated as epiphytes, and placed upon blocks of wood or in baskets. I have grown them in pots; but I do not recommend that system, because the peculiar habit and beauty of the plants cannot be developed under such treatment, even in cases where pots are made specially for them.

In providing blocks of wood for these plants the operator must not go to work with a narrow mind, for although the plant may not now have shields or barren fronds more than a few inches in diameter, it will, if properly treated, soon produce others, which may probably attain some 12 inches or more in breadth, and if a block sufficiently large is not provided the shields will clasp round it instead of being kept spread open, as they would be if upon a broad block, and thus in the case of the small block half the beauty of the plant is lost. This is a point too often overlooked, and therefore I would specially draw their attention to it.

Having selected a block of wood of sufficient dimensions, first fasten the plant upon it with some fine copper wire, and then take some living sphagnum moss and rough peat from which all the fine earthy particles have been beaten out, and pack down behind the barren fronds so as to make the plant quite firm; give it a good soaking in a tub or pan of water, and nothing more remains to be done but hang it up in the desired position, and keep it abundantly supplied with water from the syringe. Care must be taken to prevent the lodgment of either thrips or scale, for if either be suffered to gain a footing they will speedily turn the fronds from their lovely green colour to a nasty, dirty, rusty brown, which will present quite the reverse of the effect desired; therefore examine them occasionally, and promptly remove any of these pests should they put in an appearance. I do not recommend the sponging of the fronds if it is possible to avoid it, as by this means the covering of stellate scales is removed, and thus, to my mind, the plant becomes disfigured.

There are but few species of Platyceriums known to science, and nearly all of them have been introduced to cultivation; but perhaps there are more species or varieties yet to come which will lend an additional charm to our ferneries. This much can be said of those we have, they are all so entirely distinct that a block or bracket may be found for each in even a small Fern house, without producing a sameness or monotonous appearance, whilst their habit is so peculiar and extraordinary that no Fern house should be without them.

P. alcicorne.—I before mentioned baskets as being suitable for the growth of Platyceriums, but this is the only one to which that style of culture is applicable. The shields or barren fronds are small, and as it throws up innumerable young plants from its roots, in the course of a few years it forms a large globular mass, producing fertile fronds from all parts of its surface. It is not the most beautiful of the genus, but is specially deserving the attention of those having only a greenhouse fernery, as it succeeds admirably under cool treatment; moreover, in a young state, and for several years, it may be grown with advantage by those who have only a Fern case to indulge their taste. In such a position the half of a cocoa-nut shell forms a capital basket, and when suspended from the roof of the Fern case does not present an unsightly appearance. This species is widely distributed through the islands of the Indian Archipelago, and is also common in Australia.

P. alcicorne majus.—As its name implies, this is a large form of the original type, and as such it is well deserving the attention of Fern growers. Although it may be grown in a basket, the large size of its barren shields and the more forked character of its fertile fronds induced me to give preference to a large block of wood. It has been introduced from Australia.

P. biforme.—This species is a native of Burmah and various localities in the Indian Archipelago, and must be treated to stove temperature. The sterile fronds are somewhat broad, whilst the fertile ones are long and pendulous. The sori in this species are not produced near the apex of the segments, but upon a scutiform lobe near the first divisions of the fronds. It is a most beautiful species.

P. Stemmaria, known also in collections by the name of P. æthiopicum, is a very distinct plant, but is not such a general favourite, because the barren shields die and turn brown every season. This, however, should not deter or discourage the amateur from finding a place for it in the fernery, as each year's growth completely covers the old ones. The shields are large, and densely clothed with stellate scales, which give them a what glaucous aspect. The fertile fronds are broad and short, several times forked, and very leathery in texture. Native of Western Africa.

P. grande.—This species must be provided with a large and broad block of wood, or half its beauty is lost. The sterile fronds are erect, the upper edge variously forked, but plain and rounded below. Fertile fronds from 1 to 3 feet in length, coriaceous in texture, dichotomously forked, and light green in colour. Too much cannot be said in praise of this charming plant. It must be grown in the stove fernery. Native of Australia and the Malay Archipelago.—C. E.

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

THE Committee, Treasurer, and Trustees, acting on behalf of the members and subscribers of the above Institution, with the concurrence of its President, the Duke of Westminster, recently forwarded through the Home Secretary a loyal and dutiful address to the Queen, for forty-six years the Gracious Patroness of the Charity, congratulating her Majesty on the completion of the sixtieth year of her beneficent reign, and the following reply has been received from the Right Hon. Sir Matthew White Ridley, M.P., by the Secretary:—

Secretary of State, Home Department,
Whitehall, S.W., August 24th, 1897.

SIR,—I have had the honour to lay before the Queen the loyal and dutiful address of the Gardeners' Royal Benevolent Institution, congratulating her Majesty on the completion of the sixtieth year of her reign, and I have to inform you that her Majesty was pleased to receive the same very graciously. With reference to the application for permission to make use of the words "Victorian Era" in connection with the title of a fund now being raised by the Institution, I have to acquaint you that her Majesty graciously approves of the desired permission being granted.—I am, Sir, your obedient servant,

(Signed) M. W. RIDLEY.

KENT CHAMPIONSHIP BELT COMPETITION.

THE Kent belt competition instituted by Mr. Cannell, of Swanley has done an immense amount of good for horticulture in the county. A few years ago it would have been deemed an impossibility for vegetables to be grown to their present quality. So successful has the competition in vegetables become that fruit and flowers are now introduced, and these new features have added to the beauty of the competition. The struggle for possession of the county championship this year took place at the annual exhibition of the Rodmersham Amateur and Cottage Gardeners' Association, which was held in a large booth in Rodmersham Park on Wednesday and Thursday, August 25th and 26th. It was here that the competition for the Kent championship belt took place two years ago, after the honour had been won by Rodmersham from Milton in the previous year. Two years since the Miltonians came to Rodmersham, and wrested the championship from their neighbours. Last year the fight took place at Milton, and here Rodmersham once more turned the tables on the Miltonians, and for the past twelve months the coveted belt has found a resting-place at Rodmersham. Now the contest for the title of the champions of Kent has again taken place at Rodmersham, and, by a singular coincidence, the championship has gone to Milton for the third time. Meanwhile, other societies in the county do their best to stop this "little game," as it has been not inaptly termed, but so far they have been powerless to prevent it. There were eleven entries for the competition this year—viz., Eynsford, Strood, Ash, Penshurst, Charing, Ightham, Milton, Linton, Milsted, Westgate, and Rodmersham (the holders). At the last minute Charing, Ightham, and Eynsford withdrew, leaving eight stern and determined competitors to enter the lists. The prizes went to Milton first, Rodmersham second, and Penshurst third. The competition is open to all amateur and cottage garden associations in Kent.

ROSES

Own-root Roses and the Mangold Heap.

Poor Mr. Raillem has been so signally worsted in the Medea *versus* Maréchal Niel controversy that it is a pleasure to be able to afford him a feeble flutter (and it is a feeble one) at my expense over own-root Roses. It is quaint, though, and the more humorous since the author seems to be so sublimely unconscious of it, to note the comparison between his eighth paragraph and his first. Truly we are advancing in the knowledge of how to beautify our flower gardens when we are taught to turn our Rose beds into Mangold heaps! Consider the exquisite grace of a series of such mounds. The suggestion gives us new conceptions of garden decoration. Once put on the track by Mr. Raillem, we can evolve many new and striking ornaments. Amongst others I might suggest turning our Roses upside down, decorating them with an old coat and a battered hat, and making them serve as scarecrows. They would then be not only beautiful (as beautiful as the Mangold heaps any way) but useful. I venture to recommend this as a hardy perennial worthy of attention. It will not exactly crop up fresh every year, but by changing the hat occasionally we shall get some choice effects.—W. Pea.

SHRUBBY VERONICAS.

Our indebtedness to New Zealand and Tasmania for the many new and rare additions to our already large collections of garden plants can hardly be over-estimated when the surprising way in which some of them adapt themselves to our average English winter is taken into consideration. That much remains yet to be done in the way of fresh introductions before we can form an adequate idea of the richness of the vegetation in those countries is shown in the words of a popular writer, who, in reference to Tasmania in particular, says, "Somersetshire cannot surpass her orchards, nor Devon match her flowers;" and even in the handbooks of the floras the many plants we see described as exquisite garden plants that have not yet been introduced lead us to hope for not a few genuine surprises, and anxiously await the result of some enthusiastic and enterprising collector's researches.

Of the New Zealand plants already introduced shrubby Veronicas form a fair proportion, and are useful in many ways, among which the decoration of the rockery and to give variety to the mixed flower border are not the least prominent, some few also being specially adapted for pot culture, and when well grown they are by no means to be despised either as window or table plants or for the greenhouse. Their cultivation is comparatively easy, the principal object being to obtain well furnished plants, which is by no means difficult, as they will stand any amount of pinching back without injury, and may be left to the discretion of the grower.

I have found stopping the shoots early in spring the most successful way of obtaining dwarf bushy plants, and it does not in the least retard their free flowering. It is always advisable to keep them in rather small pots, giving a top-dressing of stable or liquid manure in small quantities to compensate for the restriction.

Traversi, hardy except in very severe winters, is free flowering and of neat habit. It seldom grows more than a foot to 2 feet in height, and its large spikes of white and purplish flowers, somewhat in the way of the well-known Andersoni, are very attractive; they are produced in the greatest profusion, and last more or less throughout the summer. The leaves are of a lively shining green, and for this reason the plant is extensively used in some large gardens for greenhouse decoration, together with many other fine-foliage plants to intermix with spring flowers. It is increased from cuttings with the greatest ease in the ordinary way. A native of the Middle Island, where it is found abundantly.

Salicifolia is one of the most variable of all the Veronicas, and under cultivation runs into many forms. It is one of the principal parents of the many hybrids which we have in gardens, among the best of which are kermesina, Lindleyana, Andersoni, versicolor, linearifolia, and many others, the merits of which are pretty well known and appreciated. The flowers are produced in the same way as the above, and are variable both in size and colour. This is a desirable plant for the conservatory, and very useful for planting between Camellias in beds.

Of hardy species we have a large number to choose from, and no one who has them nestling among the stones in the rockery can doubt their usefulness or appropriateness for this purpose. Indeed, it would be difficult to find another class of plants more suitable, and possessing the twofold quality of enlivening with their flowers, which, if not very attractive, are interesting through the summer, and of breaking the monotony of bare stones and rocks with their shining green or glaucous leaves during winter.

In favourable situations elliptica (syn., decussata) attains considerable dimensions in the course of two or three years, on account of which it should be planted in bold positions with good backing. It has been confounded with formosa, but how I am unable to determine, the latter being a small-leaved species from Tasmania, while elliptica has large, broad, oval shaped leaves, and is very distinct. The flowers, which are produced in clusters, are white or purplish, becoming more intense as they grow older. The figure shows a small flowering branch of this plant.

Diosmæfolia is a dwarf bushy species, seldom attaining more than 1 foot in height. It has been appropriately named "The Rockery Gem," the numerous flowers covering the plant. Among others equally desirable are lævis, amplexicaulis, anomala, chathamica, epacridea, Haasti, pinquifolia, salicornioides, and ligustrifolia.—M. S.

HORTICULTURAL SHOWS.

PERTH.—August 20th and 21st.

The annual exhibition of the Royal Horticultural Society of Perthshire was held in the City Hall, Perth, on Friday and Saturday, 20th and 21st August. Owing to many local shows being held on the same date the entries were considerably under the average, but the merits of the exhibits were in most cases quite up to the usual high standard.

The main feature of the show was the groups of plants 9 feet in diameter, open to all; and the tables of plants, 10 feet by 5 feet, open to gardeners. In the former there were three entries. The premier position was gained by Mr. E. Rogers Bush (of Messrs. Harley & Sons, florists) with a gracefully arranged group, having a nice Phœnix as a central plant, surrounded with Crotons, Pandanus, Cocos, Eulalias, and Cyperus distans, intermixed with Carnations, Chrysanthemums, and Gloxinias, nicely set in a groundwork of Maidenhair Ferns and Coleus. The second prize was gained by Mr. Wm. Little, gardener to P. W. Campbell, Esq., Muirtonbank, with a somewhat similar arrangement; and the third by Mr. Leslie, gardener to Andrew Coates, Esq., Pitcullen, whose group contained some excellent Crotons, Cocos, and Cockscombs.

There were four entries for the tables, all of which were of very high merit. The first place was adjudicated to Mr. F. Nicol, gardener to Thomas Roy, Esq., of Craigclowan, for a table principally composed of Orchids, Liliums, and Adiantums. Amongst the Orchids were some nice Odontoglots, Dendrobes, Cypripediums, Oncidiums, and Cattleyas, all combining to make an exceedingly pretty table. Second, Mr. Wm. Little, who had splendidly coloured Crotons, Dracænas, Pandanus, interspersed with Pancratiums, Liliums, and Clerodendron fallax, gracefully set up in a background of Ferns, and edged with Panicum, Selaginella, and Asparagus deflexus. Third, Mr. Leslie; fourth, Mr. T. Dobbin, gardener to James Ramsay, Esq., Balhousie Castle, whose table contained some handsome little Crotons. Specimen plants were not numerous, the leading positions were gained by Messrs. Leslie and Little.

Fruit, considering the season, was fairly good. For collections of twelve and eight sorts Mr. Leslie was the only competitor, showing very good fruit in both collections. Grapes were very good. For two bunches Black Hamburghs Mr. Lawrence, Oakbank, was first with beautifully finished medium sized bunches; Mr. Dobbin second. For two bunches Muscat Mr. Leslie occupied first place. One bunch black, any sort, Mr. Little first with Gros Colman; second, Mr. Leslie with Madresfield Court. Hardy fruit was largely shown and of fairly good quality.

Cut flowers were shown in the various sections and helped to brighten the hall. Messrs. D. & W. Croll staged excellent Roses, both H.P. and Teas. For Chrysanthemums, twelve blooms, ladies' sprays and buttonhole bouquets, Mr. Bush occupied first place; twelve greenhouse and stove trusses, Mr. Little was first with an excellent stand; while in the class for bouquets Mr. Harris, Greenbank, was winner.

Vegetables were of the usual excellent quality, the principal prize-takers being Messrs. Harper, Tulliebelton; McFarlane, Kilgraston; and Robertson, Springland. In the amateurs' section there was a considerable falling off, owing to the numerous local shows being held at the same time.

BRIGHTON.—August 24th and 25th.

Good as the exhibitions at Brighton have been of late years the last summer show was in advance of its predecessors. Groups, both of Ferns and miscellaneous plants were good, while the stove and greenhouse plants from Mr. J. Warren, Hand Cross Park, Crawley, were remarkable for their rich colouring and general excellence. The Dome, Corn Exchange, and Western Lawn proved none too large for the exhibits.

Mr. W. C. Hollands, Tunbridge Wells, won for a circular group, 18 feet by 10, with a light and graceful arrangement. This secured the Society's silver medal and possession of the Corporation challenge cup for the year, in addition to a substantial prize. Mr. G. Miles, Dyke Road, Brighton, was a good second, but appeared too heavy in the background.

This exhibitor's group of Ferns was one of the prettiest features in the show, although closely run by Mr. Adams, gardener to the Rev. Sir George Shiffner, Bart., Coombe Place, Lewes, who always has Ferns in grand style. Tables of flowering and foliage plants were good, Mr. Lawrence, gardener to Mr. T. Oliver, Horsham, just beating Mr. W. C. Hollands.

For six stove and greenhouse plants in bloom Mr. A. Gibson, gardener to Mr. T. F. Burnaby Atkins, Halstead Place, Sevenoaks, beat Mr. J. Warren, Hand Cross Park, but Mr. Warren was ahead for six exotic Ferns, a specimen Croton, a specimen Palm, and a stove or greenhouse plant in bloom. Mr. T. Fairs, gardener to R. Clowes, Esq., Clayton, Hassocks, was first for twelve Begonias, Mr. E. Meachen, gardener to Miss Armstrong, Woodslea, Preston, being a good second. Mr. E. Boyling, gardener to Miss Willett, Hurstpierpoint, went before Mr. Fairs for six Gloxinias. Mr. Lawrence beat Mr. H. Garnett for six well-coloured Crotons, but the positions were reversed for the same number of

Dracænas. For six British Ferns Mr. G. Miles, Dyke Road Nursery, won from Mr. F. Collis and Mr. J. Lewis, Preston Road. The twelve table plants were good, Mr. Lawrence, Messrs. W. Miles & Co., Hove, and Mr. J. Warren, Hand Cross Park, taking honours as placed. For a small collection of Orchids Mr. J. Harper, gardener to E. A. Tucker, Esq., Vernon Lodge, Preston, was ahead of Mr. H. Garnett, gardener to R. G. Fletcher, Esq., Mount Harry, Preston, Mr. F. Collis following.

For twenty-four varieties of stove and greenhouse cut flowers the silver medal and first prize were awarded to Mr. W. Archer, gardener to Miss Gibson, Saffron Walden, Essex. There were only two competitors in the class for twenty-four Roses, Mr. W. Taylor, Hampton, Middlesex, and Mr. T. Durrant Young, Eastbourne, being close together, but placed as named. Mr. Harris, gardener to Mrs. Eversfield, Denne Park, Horsham, was well ahead of Mr. Young for twelve Teas or Noisettes. One of the most attractive features of the show was the Dahlias. These were exceptionally bright and good, and we can do no more than say the arrangement of Cactus and Pompons left nothing to be desired. Mr. T. Mortimer was ahead of Mr. F. W. Seale, Sevenoaks, for forty-eight Show or Fancy varieties. Mr. Seale beat Messrs. Keynes & Co., Salisbury, for twenty-four varieties of singles, and also for twelve Pompons. Messrs. Keynes & Co. were well ahead for twelve bunches of Cactus varieties, making a grand show. Hardy perennials and annuals were good and numerous. Floral designs were more numerous and varied than was the case last year, and all were good. Mr. J. Charlton, Tunbridge Wells, was first for a ball-room bouquet, and also for a wreath device of flowers, being closely followed by Mr. F. W. Seale in the latter class. Mr. Seale was first in a strong class for a centrepiece suitable for the dinner table.

Mr. J. Gore, Polegate, staged a grand collection of fruit, and won from Mr. G. Goldsmith, gardener to Sir E. G. Loder, Bart., Leonardslee, Horsham, in what was a strongly contested class. Grapes were good. Mr. T. Davey, gardener to E. J. Pope, Esq., Horsham, was first for three bunches of well finished Black Hamburgh, Mr. T. Osman, gardener to L. J. Baker, Esq., Chertsey, following. For three bunches of black and three of white Grapes, Mr. D. Gibson won, Mr. Osman again taking second place. Mr. Harris, Denne Park, was first for one bunch in the amateurs' division. Mr. Lawrence, gardener to T. Olivier, Esq., Horsham, won for two distinct Melons ; and Mr. R. H. Knight, gardener to Mrs. Bannister, Cuckfield, for one Melon. Peaches were good and highly coloured, Mr. F. Potter, gardener to R. Worsley, Esq., Cuckfield, winning for two dishes, and Mr. J. Allen, gardener to G. H. Field, Esq., Ashurst Park, Tunbridge Wells, for a single disb. Other fruit was exceptionally good for the season.

The bronze medal and first prize for a collection of nine vegetables were strongly contested, as was that for six dishes of Potatoes. Mr. W. Manton, gardener to Mrs. Clifford Borrer, Pickwell, Bolney, and Mr. F. Draycott, gardener to Lieut.-Col. Dudley Sampson, Lindfield, were first in these classes. A special prize for a collection of six distinct vegetables, gentlemen's gardeners only, was won by Mr. H. Knight, gardener to Mrs. Bannister, Cuckfield.

Non-competitive exhibits need some little mention. Lilies, bulbs, and various decorative plants came from Messrs. W. Balchin & Sons, Hove and Hassocks ; Messrs. Veitch & Sons, sent new and rare plants ; Messrs. Peed & Sons, well coloured Caladiums ; and Messrs. J. Laing and Sons, Begonias. Each gained the Society's silver medal.

KINGSWOOD AND WEST GLOUCESTERSHIRE.—AUGUST 25TH.

THIS comparatively young society has made such rapid strides that it bids fair to soon become the most popular in the West of England. Upwards of £220 is offered in prizes, these including three handsome silver cups, and competitors were attracted in large numbers from far and near. Four large tents were filled with the various exhibits, the quality of which was remarkably good throughout. Last year the date of exhibition was a most unfortunate one, and a serious loss had to be chronicled. This time they were favoured with delightfully fine weather, and the consequence of this and the good reputation of the society was a "record gate," or upwards of 10,000 visitors. Messrs. Jullion and Cottle once more proved themselves to be capable honorary secretaries.

In the premier class for a collection of stove and greenhouse plants Mr. J. Cypher, Cheltenham, was well first, having fine plants of Kentias, Crotons, Bougainvilleas, Ericas, and the like. Mr. W. Vause, Leamington, was second, and Messrs. T. B. Woods & Son, Chipping Sodbury, third. The first prize for six Ferns was easily won by Mr. W. Rye, gardener to Captain Bellfield, Frenchay, whose best plants were Todea pellucida, T. superba, Davallia elegans, and D. fijiensis. Mr. F. W. Lockwood was second. Fuchsias were good. Mr. G. Tucker, Trowbridge, was first for six varieties, showing huge pyramids, not, however, so fresh and freely flowered as the second prize plants shown by Mr. W. J. Mould, Bath. Zonal Pelargoniums made a fine display. First, Mr. W. J. Mould ; Messrs. J. B. Woods & Sons were second. Tuberous Begonias, both single and double flowered, were numerous and good. Messrs. J. Rogers, W. Rogers, and T. J. Farr were the most successful with these. Mr. D. Jefferies had the first prize for Petunias ; second, Mr. F. Baynton, gardener to P. Fussell, Esq., Kingswood, both showing excellently.

There were five competitors in the class for a group of plants arranged for effect on a space not less than 100 square feet. Mr. J. Cypher was first for a light and effective arrangement, in which choice Orchids were conspicuous. Mr. T. Wilkins, gardener to Lady Guest, Henstridge, was second, Mr. W. Vause third, and Messrs. E. S. Cole and Son fourth, all acquitting themselves in good style.

Amateurs' plants showed marked improvement on previous years. With six stove and greenhouse plants in flower there were five competitors, all staging most creditably. The first prize, a silver cup value 5 guineas, went to Mr. G. Tucker, who staged grandly flowered plants of Lapageria alba, Dipladenia Brearleyana, Bougainvillea Sandersi, Ixora Morsei, Stephanotis floribunda, and Erica McNabiana. Mr. T. Wilkins followed closely with large specimens, his best being a fine Bougainvillea and Stephanotis floribunda. The third prize went to Mr. W. Rye. The silver cup for six fine-foliaged plants was well won by Mr. T. Wilkins, who had fine healthy specimens of Cycas circinalis, Kentia Canterburyana, K. Belmoreana, Dasylirion longifolium, and large richly coloured Crotons Williamsi and interruptum. Mr. Rye was second, and Mr. E. Towill, gardener to Mrs. Gale Coles, third. Mr. Wilkins also succeeded in

FIG. 32.—VERONICA ELLIPTICA.

winning the first prize for six exotic Ferns, Mr. W. Rye again being second. Zonal Pelargoniums were well shown by Messrs. E. Towill and S. Bryant, gardener to Dr. Grace, Kingswood ; Coleus by Messrs. S. Bryant and J. Bainton, gardener to D. Jefferies, Esq.; Begonias by Messrs. Cornish and J. Rogers ; and Gloxinias by Messrs. E. Sheppard and W. Towill, who were respectively first and second in each instance.

Dahlias as usual were well represented, several leading growers competing. The best twenty-four were shown by the veteran exhibitor Mr. T. Hobbs, Bristol ; equal seconds, Mr. G. Humphries, Chippenham, and Mr. J. Walker, Thame. For Fancy Dahlias Mr. Humphries was first, and Mr. T. Hobbs second. The best singles were shown by Mr. J. Burgess ; second, Mr. G. T. Bryant, while for Cactus-flowered varieties Mr. G. Humphries was first, and Mr. J. Burgess second. Mr. S. Tresider, Cardiff, was easily first for twenty-four varieties of Roses, three blooms of each ; second, Mr. G. Garraway, Bath. Mr. T. Hobbs was first for twelve varieties. Asters were good, and with these the most successful were Messrs. T. Evry, C. H. Vicary, and F. Hooper. Hollyhocks were particularly good ; Mr. W. Smith, Kingswood,

was first, and Mr. F. Burgess second. Tuberous Begonias were well shown by Messrs. J. B. Blackmore, J. Cornish, and J. Rogers. Hardy herbaceous flowers in bunches were quite a feature. With these Mr. W. Smith was first, and Mr. G. Garraway second. Mr. J. Cypher was first for stove and greenhouse flowers, and Mr. A. T. Robinson second. Sprays, buttonhole bouquets, memorial wreaths, and vases were all numerous and good.

Asters in the amateurs' classes were particularly good, and with these the prizewinners were Messrs. Isaac and J. Burgess. Mr. Towill was first, and Mr. E. Shepherd second, for hardy herbaceous flowers in a well filled class. Mr. W. Rye staged the best bunches of choice flowers, Mr. Towill taking the second prize. Mr. T. Hobbs gained all three first prizes for Roses, Mr. J. Newman also showing well. Hollyhocks appear to be more popular about Kingswood than in most other districts. With these Mr. J. Burgess was first, and Mr. S. Bright second. Mr. J. Newman was first, and Mr. T. Hobbs second for double Dahlias, and Mr. J. Burgess first, and Mr. S. Bright second, for single varieties in well contested classes. Mr. F. J. Tarr was first, and Mr. J. Burgess second, for Zonal Pelargoniums.

There was a slight falling off observable in the quality and quantity of the Grapes shown, but all the other fruit classes were better filled than might reasonably have been anticipated. The silver cup offered for a collection of eight varieties of fruit was awarded to Mr. W. Marsh, Bath, who had fine, well-coloured bunches of Muscat of Alexandria Grapes, a good fruit of Sutton's Perfection Melon, Dymond Peaches, Pineapple Nectarines, Brunswick Figs, Goliath Plums, and Morello Cherries. Mr. J. Lloyd, gardener to Vincent Stuckey, Esq., Langport, was a close second, but staged Grapes that had previously done good service. Mr. T. Wilkins was third. In another class for a collection of eight dishes of fruit Mr. J. Lloyd was first; Mr. G. Garraway, Bath, was second; and Mr. W. Allen third. Local growers had also another chance of excelling with a collection of fruit. In this instance Mr. S. Bryant was first.

Mr. Marsh showed the best black Grapes in the open classes, well coloured clusters of Alicante, though these would have been beaten by the large and remarkably well "finished" bunches of Black Hamburgh shown in a local class by Mr. F. Bainton. Mr. J. Marshall, gardener to J. Dole, Esq., Clifton, was second with Gros Maroc in good condition. In the class for any white Grapes Mr. Marshall was first for a perfect bunch each of Muscat of Alexandria and Buckland Sweetwater; second, Mr. J. Lloyd. The other exhibits of fruit call for no particular comment beyond the fact that both culinary and dessert Apples were remarkably good, notably Lord Suffield, Warner's King, Peasgood's Nonesuch, Irish Peach, and Quarrenden.

Classes were provided for all kinds of vegetables in season, all of which were well filled, while the quality of the produce was first-class throughout. The numerous collections staged made a most imposing display. Mr. T. Wilkins was well first with a collection of eight varieties. Mr. G. Garraway was second, and Messrs. J. B. Woods and Son third. In the local class for a collection Mr. D. Jeffries was first, and Mr. A. Fox was second. The cottagers also made a grand display of fruit, flowers, vegetables, and honey.

Special mention ought to be made of the efforts of the ladies in classes for table decorations. Not only were the competitors numerous, but they displayed excellent taste throughout. The most successful were Mrs. T. Meaden, Miss Jessie Martin, Miss F. Bush, Miss Louisa Haskins, Mrs. J. Rogers, Miss Howes, and Miss Florence Bush.

SWANSEA.—August 26th.

Horticulturists in Swansea and the surrounding district are to be congratulated on their first horticultural exhibition. They succeeded admirably so far as the number of entrants, the high standard of the various charmingly arranged groups, the beautiful stands of cut flowers, and the highly creditable display of fruit and vegetables, were concerned.

For the best arranged group, occupying a space of 100 square feet, there were five competitors. The first prize collection was staged by Mr. G. Hawkins, gardener to Mrs. Turbeville; Mr. Farrant, Swansea, taking second honours, and Mr. Carpenter third, each showing creditably. In the class for a smaller group there were four exhibitors. The first prize went to Mr. R. Downing, gardener to H. Bath, Esq., Swansea; second, J. C. Gorvin, Esq. For six stove and greenhouse plants, distinct, Mr. Carpenter was awarded the prize; Mr. Bowen, Swansea, being a close second. The last named was successful with Ferns, showing well. The class for twelve table plants was a good one, Mr. Farrant winning; Mr. R. Crossling, Penarth, was second. Mr. Hughes, gardener to J. Taylor, Esq., staged the best Begonias.

Wreaths and crosses were well shown by Messrs. Treseder, Cardiff, and Barron, Swansea. The last named staged the best ball and bridal bouquet, both being creditable examples; Mr. Farrant taking second place. Mr. Pride was first for the best arranged epergne; and Miss B. Gibbon second. Mr. W. Treseder won for buttonhole and sprays, and Mr. Wm. Brown for the best arranged basket. Sweet Peas, Dahlia; and hardy annuals were well shown, also Asters, while in the Rose classes Mr. Ralph Crossling proved invincible.

Mr. J. Cleeve, gardener to J. H. Rogers, Esq., Llanelly, was first for a collection of fruit, with good Muscat Grapes, Williams' Pears, Rivers' Orange Nectarine, a good Melon, Peaches, and Plums. Mr. G. Hawkins was second. J. H. Rogers, Esq., took first for the best six dishes of dessert Apples, and followed up by taking the prize for a similar number of kitchen varieties. For a single dish of dessert Apples, Mr. Wilkins won. For six bunches of Grapes in three varieties, Mr. P. Richards was to the fore with creditable pieces, Mr. Hawkins taking second place. In the class for Black Hamburgh Mr. G. Davidson was a good first with medium bunches, splendidly finished. The best Muscats were staged by Mr. Richards, and Mr. Cleeve, Llanelly, the first named winning for any other black Grapes, Mr. Hawkins taking second place.

The Society's class for nine vegetables was well contested, Mr. Pleasants, gardener to T. Penrice, Esq., and Mr. Jones, gardener to N. Powell, Esq., were equal first, staging good produce. J. Morgan, Esq., third. Potatoes were put up in large numbers. For the best six dishes D. Thomas, Esq., was awarded the prize, J. H. Rogers, Esq., being a very good second. Mr. S. Pugh staged the best Tomatoes, Mr. Hawkins second. Mr. J. Crofts had the best brace of Cucumbers, and D. Davies, Esq., the best Runner Beans. Carrots, Celery, Leeks, and Onions were all well staged in their several classes.

Mr. W. Treseder, Cardiff, had a pleasing show of Dahlias and hardy flowers in variety. Messrs. Wm. Clibran & Sons, Manchester, sent hardy cut flowers in great variety, and Messrs. Kelway a very fine exhibit of Gladioli, Delphiniums, Gaillardias, and Dahlias.

THE YOUNG GARDENERS' DOMAIN.

Men of the Future.

As in previous quarters, marks of merit have been accorded to the literary productions of young gardeners. During the second quarter of the year, the greatest number was obtained by Mr. W. Tyndall, The Gardens, Charleville Forest, Tullamore, and a gold fountain pen was forwarded to him. He was, however, run dangerously close by another correspondent, who did not seem able to write for a few weeks. We have received the following acknowledgment from the recipient:—

Your kind letter, also the gold fountain pen, are received safely, for which accept my best thanks. Surely young gardeners ought to take advantage of the facilities offered in the *Journal of Horticulture* for recording some of their experiences, in the hope that some at least of the probationers may in due time be able to follow with credit in the footsteps of those able men who have done so much in raising the standard of gardening to its present position.—W. Tyndall.

P.S.—This is written with fountain pen.—W. T.

[Very well written too, indicating that the pen and the man are both good.]

The Means and Modes of Propagating Plants.

(*Continued from page* 204.)

As a general rule it may be stated that seed should not be buried below the earth's surface at a depth greater than its own thickness or diameter, though it may be safely assumed that the depth may be increased with perfect safety in the case of seeds of leguminous plants, which are large and bulky in comparison with the generality of seeds. Thus, the tiny seeds of the Auricula should be sprinkled on the surface, and dusted over with a little fine soil and sand, covering with moss until they have germinated, in order to promote and preserve surface moisture. Larger seeds, such as Onions, Carrots, and Parsnips, should be sown in drills made with the end or back of the rake, and have the ridge that is thus thrown up drawn over them. Peas and Beans may be set at a depth several times their thickness or diameter in shallow trenches made with a hoe. The smaller the seed the finer should be the soil for its reception; it must also be dry enough to crumble lightly when worked with the hand, and not so wet as to clot together in a pasty mass. Therefore, dry weather should be chosen for seed-sowing, and if just before a gentle shower, or when the weather bids fair to be showery, so much the better.

In propagation by bulbs or offsets, all bulblets should be placed in light soil at a depth equal to their own height below the surface immediately after removal from the parent plant, otherwise they will dry under exposure to the air, and lose vitality.

In propagation by slips or cuttings, slips which spring from the collar or upper portion of the roots of herbaceous plants, as in the Auricula or Chrysanthemum, or from shrub-like plants, as Thyme and Sage, are stripped away from the parent plant in such a manner as to secure a heel. The heel should then be trimmed with a sharp knife, and inserted in suitable soil, shading to prevent the leaves flagging. When slips are taken from the collar they will often have roots attached, and may be described as offsets, these usually growing rapidly. Want of success in many cases may be traced to neglect in trimming the heel or base of the slip, or properly preparing it for insertion, as a callus is produced more quickly on a smooth surface than it is on a ragged one.

In propagation by division the original plant is broken up, and each piece, which will be found to consist of stem, leaves, and roots, may be planted separately, and will soon form a young and vigorous plant. This mode of propagation is resorted to in the case of most kinds of herbaceous plants. Solomon's Seal may be cut into pieces, provided that each piece has an eye or bud. Border perennials should be divided in the spring when growth is commencing. They will then separate readily into portions, each replete with buds for its upper growth and roots for its growth below ground.

In propagation by runners, it is necessary to peg them down, or place a weight on them so as to keep them in position unmoved, and in contact with damp soil. Roots are then emitted, and in due time the young plants are removed, as in the case of the Strawberry.

In propagation by suckers, these should be separated with care, and cut away as near the parent plant as possible, so as to retain the roots which have issued from the stem, exercising care in their removal to bruise them as little as possible, otherwise they will decay.—C. W. M.

(To be continued.)

Mignonette in Pots.

This sweet-scented flower is appreciated by everybody, and never more so than when grown in pots for winter flowering. Many growers sow a few seeds in 5-inch pots, and after thinning the plants to four or five grow them on and flower them without giving any shift whatever. This method is a good one if only a small quantity of bloom is desired, but where an abundauce is looked for the following method, though an old one, will be found to answer well.

Seeds should be sown the first week in July in 4-inch pots, containing a mixture of two parts rich fibrous loam, one part broken mortar rubble, and one part leaf soil and sand, the whole being thoroughly mixed together and made firm in the pots, which may be assigned to a position on a bed of coal ashes in a cold frame having a north aspect. One good watering with occasional syringings will suffice until the seedlings are large enough to thin. This should be promptly done, leaving four plants in each pot. When the plants have made six leaves stop them, the result being several side shoots.

As soon as the roots have well filled the pots, and before they become matted together, give the plants a shift into 8-inch pots, this time using a eompost consisting of loam two parts, mortar rubble one part, sand and old Mushroom bed refuse one part, with a good sprinkling of soot and some approved artificial manure. The mortar rubble is an important part of the compost, inasmuch as it keeps the soil open and sweet. The potting requires to be firmly done, and the soil should be in just such a friable condition as will allow of its being rammed without any fear of it adhering to the potting stick.

Throughout the entire season of growth the plants ought to be kept in the frame quite close to the glass, as much air as possible being given, and the lights put on only at night or during showery weather, and then well tilted. Towards the end of September remove the plants to a shelf in a cool house where they will receive plenty of light. Watering must at all times be carefully done, each plant being examined. As the plants gain in size peg them down until the pots are well covered, staking as required and removing every flower until the beginning of November. Liquid manure and soot water is useful now as a stimulant, and the plants will attain to almost bush-like dimensions, covered with large spikes of flowers, at a season when cut flowers are none too plentiful viz., November onwards for many weeks.

The essential points to remember are - timely thinning, cool treatment, firm potting, and cautious watering, which if carefully attended to are certain to give good results.—Youngster.

Culture of the Grape Vine.

The Grape Vine, botanically named Vitis vinifera, has long taken a foremost place amongst the choicest fruits of the land, not only for use as dessert, but from its juice we get our best wines. It is not intended to give an historical sketch of the Vine, although that might be very interesting to readers of the "Domain," but to give a few notes on the cultivation of this grand fruit as observed by the writer. Let us hope I shall succeed in my endeavour, but should I err in any of my statements I trust I may be put on the straight path.

Propagation.—There are many ways of increasing the Vine namely, by budding, grafting, inarching, layering, euttings, eyes, and seeds. It is intended in this article to deal only with eyes, as that mode of propagation is mostly practised by private gardeners. Commence by preparing a sufficient number of clean 3-inch pots by well draining, and firmly filling with a compost consisting of good loam, leaf mould, and sand. Make a hole in the centre of the pot, so deep that when the wood is placed in it the eye just protrudes above the soil. In preparing the eyes select well ripened wood with prominent round eyes. Cut the wood through at about half an inch from the eye each way, the cuts being made diagonally from the top downwards. About a quarter of the wood is cut off from the side opposite the eye. All is then ready for insertion. When placing the eye in the pot it is better to let the wood rest on sand, as this tends to keep it sweeter, and so quicker root action is aided. Draw the soil round the eye, making all firm, afterwards sprinkling silver sand on the surface of the pots.

From the middle of January to early in February is the best time to perform this operation. When all the eyes are inserted, plunge the pots in a bottom heat ranging from 75° to 80°. The temperature of the house should be about 70° by night, with a proportionate rise by day. Should the soil not be thought sufficiently moist, afford a light watering, care being taken not to get the compost too wet or failure will ensue. When the young plants are well rooted and growing nicely, remove to 6-inch pots, using a eompost as before, only the loam should be rougher and more fibrous. If these pots ean be plunged in bottom heat so much the better. When well rooted take the plants from the plunging material and stand them as near the glass as safety will permit, in order that sturdy, short-jointed wood may be formed.

Use the syringe freely about the foliage, both in the morning and at closing time, not only to keep away insect pests, but to aid a clean, free growth. Air should be admitted very sparingly at first, gradually increasing the amount as the days become brighter and warmer, but on no account allow so mueh as to eripple the young growths and tender leaves. Pinch the laterals when they have made one leaf, but do not stop the leader; let it run as far as it likes, tying down to avoid entanglements. As the pots fill with roots an oceasional application of some proved fertiliser is very beneficial.

Assuming the plants are nicely growing, we will leave them for a time, and turn our attention to struetures for Grapes, borders, and planting.—Semper.

(To be continued.)

FRUIT FORCING.

Cucumbers.—As the days become shorter and the nights colder, closing the house earlier, also syringing sooner, must be attended to in order to secure as much advantage as possible from sun heat and prevent exeess moisture on the foliage during the night. In cold, wet weather fire heat becomes necessary to secure clean, straight fruits, maintaining a temperature of 70° to 75° by day and 65° to 70° at night. Allow the heat to rise to 85° or 90° from sun heat, and close so as to secure the latter temperature to 95° or more for some time in the early part of fine afternoons. Keep the growths fairly thin, removing old shoots so as to make room for young ones, and thus provide a succession of bearing parts. Stop the shoots one joint beyond the fruit unless growth is wanted, then allow more extension, always, however, avoiding crowding. Encourage root action by a steady bottom heat of 80°, surface dressing with lumpy loam and sweetened horse droppings, and sprinkle a small handful of soot on each square yard of bed. This gives the fruit a fine deep green colour —a point of considerable importance—besides promoting the health of the plants, and with liquid manure in a tepid state whenever water is required secures an abundant crop. Do not, however, overcrop; but the output can be materially augmented by cutting the fruit directly it becomes fit for use.

Autumn Fruiters.—The foregoing remarks apply to plants in bearing some time, and to these in measure of temperature and nutrition, but the autumn fruiters will only require stopping to insure an even spread of foliage, and on the corresponding bearing growths keeping tendrils and male flowers removed. The plants will now bear the sun unshaded, avoiding morning syringing, and only using it on fine afternoons, then lightly and early, keeping the house damp as required. Ventilate in moderation, avoiding draughts, as they chill and stunt the growths and fruits, and if no air is given the foliage becomes thin and flabby, yet a somewhat close, warm, and moist atmosphere is necessary for clean growths in both shoots and fruits. Remove the first shows of fruit on weakly plants, and seek to encourage sturdy, thoroughly solidified growths by judicious ventilation and gentle fire heat when needful.

Winter Fruiters.—The plants from seed sown in August will now be ready to plant out. The house being a light one, the heating means adequate to maintaining a temperature of 70° to 75° in all weathers, with a bottom heat of 80° to 90°, the prospect of having Cucumbers in winter are favourable, not otherwise. First of all thoroughly cleanse the house, removing every particle of old soil, and scalding the whole of the interior with boiling water, then wash the woodwork with petroleum, softsoap, or carbolic soap, water and a brush, cleansing the glass with elear water, limewashing the walls with hot lime and a small handful of flowers of sulphur in each pailful. If rubble is used about and over the pipes for bottom heat see to eleaning it by taking out and washing. Make the drainage secure with a layer of turves previously eharred or scalded. Put in hillocks or ridges of soil 2 feet wide at the base, 10 to 12 inches deep, and 1 foot across at the top. Turfy loam laid up until the grass is killed (and with it 14 lbs. of basic slag phosphate and 7 lbs. of kainit per cubic yard), chopped up rather roughly, two-thirds; fibrous sandy peat one-third, chopped or torn up, rejecting any woody matter; old mortar rubbish freed of laths and other pieces of woody substance, the rough broken small, form, thoroughly incorporated, a suitable compost. Being neither wet nor dry, it may be made moderately firm.

Plant when the compost is warmed through, press the soil gently, and seeure the plants to stakes reaching to the trellis. Rub off the laterals to the bottom wire, and stop the leading growth at about the second or third wire of the trellis. Shade from bright sun until established. Syringe on fine afternoons lightly and early, damping in the morning, at noon, and early in the evening. Maintain a day temperature of 70° to 75°, 85° to 90° from sun heat, and a night temperature of 70°, falling to 65° or even 60° in the early morning. The plants thus attended to will fruit in late autumn, but they must not be cropped too much if they are to give a plentiful supply from Christmas to the spring.

Where seed was not sown in August, and Cucumbers are required at the new year onward, sow early in this month. The varieties are legion; none is better than Improved Telegraph, Rochford and Cardiff Castle being excellent. Snow's Winter, a very old variety, and seen in the Syon House type, may not now be procurable, otherwise it has no equal for swelling in the winter months. Sow the seed singly in small pots a little more than half filled with soil, and cover half an inch deep. Keep the plants near the glass, and earth them up as they grow, and transfer to 5-inch pots when they need a shift, placing a stick to each, to which secure the growth as it advances. Train with one shoot by rubbing off the laterals as they show. The plants will be fit to place out during the first fortnight of October.

In Pits and Frames.—If the growths are trained somewhat thinly, watering done early and judiciously, the plants will continue in bearing some eonsiderable time. A light sprinkling of water may be given at closing time on fine afternoons, but it will not be much needed after this, or very little of it, the plants deriving sufficient moisture through the decay of

the fermenting beds. Line the beds with sweetened stable litter, and admit a little air at the back to allow of any rank steam escaping. The night temperature should be kept at 65°, a little air given at 75°, and keeping through the day between that and 90°. On cold nights employ a covering of mats over the lights.

Melons.—The fruit ripening is improved in flavour by a brisk heat in the daytime, and with sufficient ventilation to insure a circulation of air constantly. Keep water from the house and the soil somewhat dry as soon as the fruit commences ripening, supplying moisture only to prevent flagging. Melons are really good in September if well ripened, and so also are October ones. The later fruiting plants have the Melons in an advanced swelling condition, and will be assisted by a little weak liquid manure. Keep the laterals well in hand, but not very closely pinched where the old leaves are not in a healthy state, and have a sharp eye on red spider, applying a little sulphur to the pipes, vapourising with nicotine essence or fumigating with tobacco paper for aphides and thrips, while for canker rub quicklime into the affected parts, repeating as necessary. If cracking occurs cut the lateral about half through a little below the fruit. It will check the flow of sap and afford some relief if accompanied by a circulation of air constantly. But the chief cause of cracking is stunted growth in the early stages of swelling and when nearing ripening, a moist soil and a close moist atmosphere causing the deposition of moisture on the fruit during the night. Ventilate freely, and keep the air moderately dry by a little ventilation constantly as a preventive of canker and cracking.

Latest Melons.—The plants now are well up the trellis and showing fruit blossoms; these should be fertilised daily, keeping the atmosphere rather dry, a little ventilation being given at night so as to insure a circulation of air and prevent the deposition of moisture upon the blossoms. Stop the shoots at the time of impregnation one joint beyond the fruit. As soon as a sufficient number of fruits are set on a plant, remove all staminate and pistillate flowers, reducing the fruit to three or four on a plant, or according to their vigour. Earth up the plants after the fruit is fairly swelling, and be careful in syringing the foliage, only using it on bright afternoons, but maintain a genial condition of the atmosphere by damping in the morning and afternoon. Be careful not to give too much water, but encourage healthy root action by moderate moisture in the soil. Maintain the temperature at 70° to 75° by day, and 80° to 90° from sun heat, with 65° to 70° at night.

Melons in frames and pits will not require further damping over the foliage, and should only have sufficient moisture in the soil to preserve the plants in health, keeping the foliage thin, and the fruit well raised above it on flower pots, each fruit resting on a piece of slate. Apply good lining for affording the requisite heat to finish the fruit properly, and maintain a dry atmosphere with free ventilation. Damp ruins Melons in frames late in the season.

Strawberries in Pots.—Runners not over early rooted on account of the dry weather may now be placed in 5 or 6-inch pots, and getting well hold of the soil and given due exposure in the autumn, the plants will produce some good fruit in April and May, though not so plentifully and large as those potted earlier. For introducing to heat in January and February we have found them excellent, especially Noble, Vicomtesse Herieart de Thury, Royal Sovereign, Sir Joseph Paxton, Lucas, Gunton Park and British Queen.

Plants potted some time ago should be examined and if making side buds too numerously, they, where fine fruits are desired, should be removed with a piece of hard wood, so as to throw the vigour into the central crown. If the plants grow vigorously liquid manure will not be required, but those that are weakly should have supplies of it twice a week. Remove all runners as they appear, and loosen the surface of the soil, especially round the sides of the pots, so as to secure the more thorough and even moistening of the ball. As the plants grow set the pots wide apart. If red spider attack the plants hold each inverted with one hand, and with the other dust the under sides of the leaves with a mixture of air-slaked chalk lime, flowers of sulphur, and soot in equal parts, finely sifted and applied by means of a dredger.

THE FLOWER GARDEN.

Ageratums and Heliotropes.—Sowing seed in the spring is the best way to raise Ageratum plants. Those obtained from cuttings are, however, the most compact, and, if desirable, a stock might yet be propagated with a view to having abundance of cuttings next spring. Select soft, flowerless tops from the best plants, and dibble them thinly in 5-inch pots, placing in gentle heat. Old plants of both Ageratums and Heliotropes often fail to lift well, but if a number of the latter have been kept for flowering in pots during the autumn and winter, these will produce abundance of cuttings next spring. Failing these root a good number of tops as advised in the case of Ageratums.

Verbenas.—There is no lack of soft clean cuttings on Verbenas, and abundance of these must, if not already done, be taken off and rooted. It is the young flowerless shoots that should be preferred, and these ought to be shortened to the third joint, dibbling them before they flag badly in well drained 5-inch pots filled with a mixture of fresh loam, leaf soil, and sand. A partially exhausted hotbed is the best place to root them on, and they should be kept close, shaded from bright sunshine, and moist till rooted. Much dry heat ruins either cuttings or well rooted plants.

Zonal Pelargoniums.—If cuttings are soft and sappy they are somewhat difficult to root and save. The old-fashioned plan of preparing the cuttings for pots and pans, and then spreading them out in the sunshine to flag and dry for a whole day or two, gets rid of much superfluous moisture, and has much to recommend it. Late rooted cuttings can be wintered most surely in 4-inch or slightly larger pots, as these can be stored thickly on shelves in cool dry houses. In these the cuttings may be dibbled in quite thickly, giving them more room in the spring. At this late date they must not be exposed to showery weather and heavy fogs and dew, but should have the benefit of glazed coverings, and all the light, air, and sunshine possible. No water ought to be given at first, and only enough later to keep the stems from shrivelling badly.

Iresines, Coleuses, and Alternantheras.—Rooted cuttings are preferable to lifted old plants, even when the latter recover well from the check. The first frost will cripple these delicate bedding plants, and no time, therefore, should be lost in rooting a number of young tops. Use 5-inch pots well drained and light soil. Place six cuttings in each pot and root them in heat. All are liable to damp wholesale, and the frames or glass covering them will require to be well dried every morning.

Fuchsias.—These are now very popular as bedding plants and also for plunging separately on the turf. If young flowerless shoots can be had, these might be rooted in pots or pans in heat, much as advised in the case of Verbenas. Instead of wintering them in the cutting pots the better plan would be to pot them separately, and keep them steadily growing all through the winter. They sometimes make good pyramids without any pinching other than stopping the side shoots, but more often they require to be stopped frequently in order to form a good bottom, after which a strong central leader may be trained to a stake, this and the side shoots being pinched back as often as flowering threatens. A moist gentle heat suits Fuchsias, and they must not be allowed to become badly root-bound prior to shifting into larger sizes.

Narcissi and Daffodils.—These are rightly extremely popular, and no class of bulbous flowered plants better repays for the little trouble necessary to take with them. The commoner kinds, notably of the Polyanthus Narcissus intended for the flower beds, must perforce be kept out of the ground some time longer, but there should be no further delay in the case of the choicer sections. In many positions the latter succeed well when not disturbed oftener than every third year, but some few of the delicate species require to be moved more frequently. If single bulbs of rare or expensive varieties are planted from 4 inches to 5 inches deep in good loamy soil they will flower next spring, and also form several offsets, which will attain a flowering size in the course of two seasons, always provided they are not detached from the parent bulb too quickly. The present is also a good time for lifting, sorting, and replanting any species that last season gave signs of either failing health or of being unduly crowded. Plant all the medium-sized to large bulbs either in lines or thin groups where they will be best seen, and they are suitable plants for fruit borders alongside garden walks, and the smaller offsets in nursery beds. The common Daffodils and Pheasant-eye Narcissi may also now be procured for growing in shrubberies, alongside woodland walks, and such like. They are well adapted for planting under the turf in patches or singly, as they flower and die down again before it is necessary to mow the grass.

Alstromerias.—There would be fewer failures with these if more judgment were exercised in the selection of sites. They fail in cold sites and heavy soil, and succeed admirably when planted in the narrow warm borders often formed close up to sunny house fronts. Plant rather deeply and do not disturb again for many years. Under this treatment they will increase rapidly and flower grandly every season.

Irises.—The bulbous rooted species of these beautiful plants ought to be taken up, divided, and replanted every second or third season. They all succeed well in a fresh, moderately rich, and not too heavy loamy soil, this being worked to a good depth. Plant from 6 to 8 inches apart and 4 inches to 5 inches deep, and surface the beds with Pansies, Violas, Alpine Auriculas, or other plants that will not take more than their share of food and moisture out of the soil. Plant new bulbs as soon as they can be had.

Various.—Crocuses permanently planted in borders should be lifted, divided, and replanted every third or fourth autumn. If returned to the same site give a change of soil, and always bury the bulbs 4 inches deep. Snowdrops can be lifted, separated into patches, and replanted without detriment to their flowering next season. They move best after fresh roots have been formed. Either these or newly purchased bulbs should be buried 2 inches deep. During this month plant Cyclamen Coum and C. europæum. These are rockwork plants, and should have a sheltered position and light sandy soil to grow in. They are most effective in groups of threes. Triteleia uniflora flowers very early and grandly at the foot of sunny fences or walls, and when in bloom is only slightly checked by severe frosts. Plant in groups of nine or more bulbs, and 2 inches deep. Treat Jonquils similarly to Narcissi.

THE KITCHEN GARDEN.

Cauliflowers.—Caterpillars are very plentiful this season, and unless well looked after they soon spoil Cauliflowers. Tying up the leaves closely over the centres soon after the hearts commence forming excludes butterflies, and leads to the perfect blanching of hearts. Those who desire extra large Cauliflowers should apply liquid manure to the roots freely directly they commence hearting-in. With the introduction of quick maturing varieties there has been less need to sow seed in the autumn with a view to having strong plants for hand-lights or frames than formerly. There is yet much to be said in favour of the practice. Sow seeds now, or not later than the first week

in September, on a sunny border, and winter a portion of the plants in hand-lights, frames, or on cool greenhouse shelves in pots. If the first sowing fail owing to neglect to protect from birds, slugs, or Turnip flea, sow more seed broadcast in shallow frames, and do not disturb the plants till next March. By sowing seeds of Autumn Mammoth and Autumn Giant with the earlier varieties it will be possible to have these fine varieties fit to cut late in July and onwards.

Mushroom Beds in Outhouses.—Mushrooms can be successfully grown in snug outhouses, more especially those with thatched sides and roofs, through the late autumn and greater part of the winter months. They fail in very cold weather only, always provided the beds are properly protected with strawy litter, and are not spoilt by overmuch water. The same remarks apply to disused cellars. In these instances the beds should be formed of thoroughly sweetened droppings from horses in full work and fed on hard food, leaving only the shortest straw with them. While in preparation by fermentation the heaps of these droppings should be turned inside out sufficiently often to prevent them becoming overheated in the centre. They ought to be gently watered whenever they become dry, and must be protected from saturating rainfall. Form nearly flat beds, not more than 15 inches deep at the back and 12 inches deep in front, after the manure has been trampled or beaten down as firm as it can be made. The heat should soon rise to about 85°, spawning taking place directly it has declined about 5°. Plunging thermometers can be dispensed with, and the condition of the bed arrived at by means of sticks forced in the bed. When the plunged portion of these can be borne comfortably in the palm of the hand spawning may safely take place. Use moderately large lumps of spawn, opening shallow holes 8 inches apart for these with the hand or trowel rather than with a dibber. Dispose the spawn flat surface upward, burying it nearly flush with the top of the manure, and packing the latter firmly about it. If there is no likelihood of the heat rising to an injurious extent cover the beds with about 2 inches of fresh fine loam three days or so after spawning, and soon after cover the beds with 6 inches of soft strawy litter. New spawn should be employed, and an excess of either heat or vapour be guarded against.

Onions.—When the tops die down, or as soon as the roots come away readily from the ground, Onions should be drawn and well harvested on wattled hurdles, or in dry positions, ready for storing. Any late in maturing to have their tops twisted down. If the weather prove unfavourable for harvesting Onions in the open, spread them on stagings in early vineries, or on a dry base in empty glazed pits, turning them occasionally. They will not keep well unless thoroughly harvested. Seed of both Tripoli and White Spanish Onions may now be sown, the plants obtained standing out through the winter and maturing next season considerably in advance of any sown in the open in March. A well-prepared, sunny, open spot should be selected, and the seed be sown thinly in shallow drills wide enough apart to admit of hoeing between.

Tomatoes under Glass.—Where houses are wanted for other purposes during the winter, fruit set later than the first or second week in August will not have a chance to ripen. All superfluous growth should, therefore, be freely shortened back to near where the fruit is swelling or ripening, as the case may be; also cut away all badly diseased leaves, of which there are only too many this season, a very few of the younger or green leaves left near the fruit serving to keep up the life of the plants. Fire heat, coupled with a moderate amount of air, hastens the ripening, also prevents cracking of the fruit. Plants that are to produce ripe fruit during the winter should have the same treatment as regards fire heat and ventilation, as, unless the crops are set during the next few weeks, there will not be many fruits to ripen in the winter. Train thinly up the roofs, and if the old leaves are diseased reserve the side shoots that form thinly about the stems and top these, otherwise there will soon be no leaves to draw up and elaborate the sap. Painting the pipes with sulphur mixed with skim milk and making them thoroughly hot occasionally serves to check the spread of disease, and so also does coating the leaves with a mixture of sulphur and newly slaked lime applied with the aid of a bellows or other distributor. Plants that have already set good lower clusters of fruit must be fed liberally at the roots, or the later bunches of flower will fail to give fruit. A good circulation of warm dry air is favourable to the setting of fruit, and to the prevention of the spread of fungoid diseases. A few hours of a warm moisture-laden atmosphere, such as suits Cucumbers, means a bad attack of cladisporium and other diseases this season.

Lifting Tomato Plants.—Plants, both against walls and quite in the open, have set excellent crops of fruit, but the ripening is slow and a partial failure is threatened. The smooth round varieties are usually the first to suffer from disease and are most given to cracking. In order to be certain of the crops of these ripening it is advisable to lift a portion or all of the plants, and either place in pots or boxes or else replant temporarily under glass. When pots or boxes are used these should be large enough to hold a moderately large ball of soil and roots, and the potting or boxing ought to be done where the plants are growing, using ordinary soil and at once carrying them to a warm dry house, where if need be they can be shaded from bright sunshine for a few days. A roof newly cleared of Cucumbers or Tomatoes might be partially re-covered with Tomato plants set with large fruit, moving these in boxes with one side only, and sliding them on to the ridge of soil that supported the previous crops. Pack them closely together, making the soil firm and level about the roots, keep them well supplied with water, and shade from bright sunshine.

PLANT HOUSES.

Poinsettias.—These if brought forward under cool conditions will be sturdy plants with foliage to the base. Give more air during bright warm days; in fact, no harm will result if the lights are thrown off for a few hours during the hottest part of the day. Do not excite the plants into fresh growth by closing the frame too early in the afternoon. It will be wise to close it at night. Weak stimulants may be given occasionally, or better still, apply a little artificial manure to the surface of the soil. When the pots become filled with roots feeding must be resorted to, or the lower leaves will turn yellow and fall.

Euphorbia jacquiniæflora.—Well established plants may be given the same treatment as Poinsettias. Those in a more backward condition may be encouraged to grow, but must be fully exposed to the sun and given a free circulation of air daily. Firm sturdy growth must be made or they will fail to flower satisfactorily. Centropogons and Justicias may be grown under the conditions advised for these plants.

Crotons.—Good heads that need re-rooting should be moved at once. Side shoots that are well coloured may be taken off and rooted without delay in small pots; these will be found useful during the winter. Small plants that are well rooted may be placed into 4-inch pots and arranged on a shelf close to the glass in a warm moist structure. In this position the plants will colour freely and make capital decorative material before winter. Few plants are more effective than Crotons when well coloured for grouping during the winter months when flowers are scarce.

Gardenias.—Clean these thoroughly if infested with mealy bug by an application of petroleum and water; this should be continued at intervals until every trace has been eradicated. After syringing them with the solution a light shade should be applied until the oil has been evaporated. If plants are grown annually from cuttings they ought to be rooted at once. Select for this purpose young soft growths, which may be inserted in thumb pots, as every one will root in brisk heat if kept close and shaded from the sun.

Gloxinias.—Where these are appreciated, plants that flowered early and have rested may be shaken out of their pots and started again into growth. Young stock raised from seed will also flower profusely if they are placed into 4 and 5-inch pots. Do not grow them too warm, but shade them from bright sunshine.

Panicum variegatum.—Insert cuttings thickly into 3, 4, and 5-inch pots. They will root freely in a close shady place. A good stock of these plants are always useful for grouping during the autumn and winter. To have them in good condition no time should be lost in starting them, for unless well established they do not look well. A good stock of Mosses, Coleus, Fittonias, and other variegated plants should now be prepared.

Adiantum cuneatum.—If the fronds of these are to be of service when cut the plants must be grown freely exposed to the sun and given air daily; in fact, the fronds stand best when the plants are prepared in a cool house fully exposed at this season of the year. Plants that have yielded fronds for a long time, and have rested in a cool place, may be started into growth in heat. They will soon push up fresh fronds and yield a good supply for winter. Young plants in various stages of growth may be repotted if they need more root room. They will grow strongly and continue to produce capital fronds until February. Seedlings may be placed singly into thumb pots. Where seedlings are raised annually it is a good plan to place pieces of turf underneath established plants that have old fronds upon them. The spores will fall upon the turf and germinate freely. This is the easiest method of raising a stock of young plants.

Eulalias.—For grouping these are invaluable, and they are exceptionally effective in conservatories of large size. Plants that were divided in spring and have filled 6-inch pots with roots may be placed into others 2 inches larger. They increase much more rapidly when given liberal root room. When grown mainly to yield stock the plants should have a position where an intermediate temperature can be given them, as they increase much more rapidly than under cool conditions. Plants that are repotted now will continue growth until late in the year, and can be cut up into several good pieces next spring. Seed can be easily saved, but so far we have only succeeded in raising plants with green foliage. These, however, are useful, and afford variety if associated with other plants of a suitable nature.

TRADE CATALOGUES RECEIVED.

Armitage Bros., Ltd., Nottingham.—*Bulbs.*
Dobie & Mason, 22, Oak Street, Manchester.—*Bulbs.*
F. Dicks & Co., 66, Deansgate, Manchester. *Bulbs.*
Fisher, Son & Sibray, Ltd., Handsworth, Sheffield.—*Bulbs.*
W. B. Hartland, Patrick Street, Cork.—*Bulbs.*
J. Nicholl, Green Lane Nurseries, Redruth.—*Bamboo and Rhododendron Catalogue.*
A. Perry, Winchmore Hill, London, N.—*Bulbs and Plants.*

POTATO DISEASE.—We are informed that a good deal of disease has appeared in Devonshire. Those Potato plots dressed with Bordeaux mixture have the foliage still standing, but the leaves of adjoining undressed plots have decayed. The sulphate of copper and lime have done good service, although some persons would not have wept if no good had followed the demonstration.—C. B.

THE BEE-KEEPER.

Queen Introduction.

It is advisable to examine all stocks at this season to ascertain if they are headed by fertile queens, as the future success of each colony depends, to a certain extent, on this being the case. There is no comparison between a stock of this description and one that is headed by an old worn-out queen. It may not be so apparent at this date as it will be next spring, as many old queens die during the winter. It is, however, useless raising young queens unless one has a simple plan of introducing them to strong colonies, and this can only be accomplished by close attention to detail. It is quite possible to remove a condemned queen from a colony and at once place another on the same comb without any harm coming to it. It is a plan, however, not to be recommended, as it would more often end in failure.

Caging Queens.

More queens are introduced by caging them than by any other means. It has the advantage, too, of being safe when properly carried out. Still, numerous instances have come under my notice where it has not been a success. The cause of failure could usually be traced to what the operator would at the time think a very trivial matter. The old queen should always be removed before the young queen is introduced. This is best done in the middle of a fine day, and if the sun is shining brightly so much the better, as during dull weather bees will cluster somewhat closely on the combs. It is then not so easy to find the queen as during a bright spell of weather when they are more thinly distributed.

Lift the frames one by one out of the hive and run the eye quickly over them, and with a little practice the queen may be found quite easily. There are numerous cages recommended for the purpose, some of which are much better than others. But the one I prefer, and always use, is home made and answers the purpose admirably. It has the advantage of being cheap, so no bee-keeper should be without one. It is made thus:—Take a piece of perforated zinc about 6 inches square, turn the edges down about half an inch. This will form a box without a lid. This is placed over the queen and pressed firmly into the comb. Whilst this is being done the queen and comb should be taken into a room, otherwise she may fly away and be lost. Place the frame in the middle of the brood nest and cover up warm. Forty-eight hours afterwards liberate her by simply removing the cage, and the bees will take readily to her. If from any cause the bees are inclined to ball her, cage her again for twenty-four hours.

Direct Introduction.

If a stock of bees is queenless, and the owner has no means of raising a young queen, direct introduction is recommended. But if there is a doubt as to them being queenless then caging is preferred. But if the condemned queen is removed in the middle of the day and the bees are again covered up warm, the young queen may be safely introduced the same evening, the later the better. Having first secured the young queen and placed her in a box quite alone—a matchbox answers the purpose admirably—place the box containing the young queen in a warm place until evening; then take a light and the box containing the young queen to the stock from which the old queen has been removed, lift a corner of the quilt, and with a puff or two of smoke drive the bees down between the frames; open the box and allow the queen to run down; replace the quilt and coverings, and do not examine the stock for at least forty-eight hours. By this means queens may be successfully introduced without failure, and as it has the advantage of being simple should be more generally practised than it is. If the bees have ample stores it is still advisable to give them a little syrup for a few days, when it may be withheld altogether.

Balling Queens.

This is usually the result of carelessness on the part of the bee-keeper; or, as will happen when a queen goes into a wrong hive, as is often the case with young queens when on the wing, before being fertilised. When this occurs they are at once balled by the rightful owners of the hive, and in this way she is killed; sometimes the cluster of bees surrounding her is as large as one's fist. By this means she is suffocated. A queen is sometimes balled for at least twenty-four hours before being cast out of the hive; often the strange queen is seized before she is able to gain an entrance to the hive. She is then balled in the same manner. When this is observed it is pretty certain to predict that it is a queen from one of the other colonies.—An English Bee-keeper.

TO CORRESPONDENTS

*** All correspondence relating to editorial matters should, until further notice, be directed to "The Editor," 8, *Rose Hill Road, Wandsworth, London, S.W.* It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Exhibiting Vallotas as Liliums (*J. J. K.*).—By no stretching of interpretation can Vallotas be made admissible in Class II. for a pot of Liliums, as Vallotas belong to the natural order Amaryllideæ, and under the most favourable definition the term "pot of Liliums" ought to be confined to genera of the natural order Liliaceæ. Strictly, however, a pot of Liliums means species or varieties of the genera Lilium. The alteration to "Lilies" would render Vallotas admissible, but that clearly is not the meaning of the term "Pot of Liliums in Bloom." As for Class I., "Three Plants, distinct species," a pot of Vallotas and a pot of Amaryllis could be shown in strict accordance with the schedule, as there would not only be distinct species, but different genera.

Gravenstein Apple (*Venus*).—We do not know an Apple bearing either of the names you cite; and although it is often difficult to identify a variety by the inspection of a solitary fruit, we suspect the fine specimen you have sent is the Gravenstein. We are not surprised to hear of its being "a favourite with the youngsters" as its fine appearance, tenderness, and sweetness when ripe would account for that, and the same qualities equally render it a favourite with persons who have advanced far along the journey of life. It is one of the favourite Apples of Germany, particularly in Holstein, where it is said to have originated in the garden of the Duke of Augustenberg at the castle of Grafenstein. We have seen Apples exhibited under the name of Gravenstein, which were certainly not "true."

Tomato Fungi (*C. B. W.*).—The "black spot" or "black stripe" fungus (Macrosporium tomato) is distinct from the "scab" fungus (Cladosporium fulvum syn. lycopersici), and though in some respects similar in their effects on the fruits, are very different in their action. "Black stripe" fungus very rarely breaks through the skin of the fruit, but converts the pulp into a black mass. It is not of English, but American, origin, and has probably been introduced into this country in seed. Scab fungus also is not British, but has been introduced, probably from America. It is semi-epiphytic, works in or just beneath the skin of the fruit, which it breaks through and bears innumerable spores, but on the leaves produces these most abundantly, so much so that showers of yellow or brownish dust-like conidia are scattered when touched. It readily yields to dusting with a powder fungicide containing 10 per cent. of sulphate of copper. Not so the "black stripe" fungus, for it is almost wholly endophytic, and cannot be got at by external dressings once it gets hold. It is unquestionably the worst enemy of the Tomato fruit, and must not be confounded with the Cladosporium and Macrosporium sometimes attacking Potatoes and Tomatoes, and frequently associated together in the self-same infection.

Diseased Grapes (*Pyke*).—The bunches are infested by the Grape anthracnose fungus (Sphaceloma ampelinum or Glæosporium ampelophagum), and easily distinguished from all other Grape diseases by its characteristic and peculiar injury. It attacks all the green parts of the Vines, but in this country chiefly the shoots and fruit. On the shoot there first appear small round brown spots, and as the disease progresses they become depressed owing to the death of the tissues. The effect on the fruit first appears as a small greyish spot, with a dark brown margin. This spot gradually enlarges, and has a vermilion coloured wing just inside the dark brown margin, hence the name, at this stage, of "Bird's-eye Rot." The fungus pursues its way, checks the growth of the berry, and it finally becomes a dry, withered mass of skin, surrounding the partially developed seeds, which is well seen in the smaller of the two bunches. Nothing could be more characteristic. The bluish mould has nothing to do with the disease. The spores of the fungus are produced here and there just beneath the cuticle, which burst through and escape, setting up the disease over extensive areas. The diseased Grapes should be cut and burned, but the disease may be arrested or kept from spreading by using a powder of air-slaked lime and flowers of sulphur in equal parts. In winter, burn the prunings and dress the Vines with a solution

of iron sulphate (copperas), 1 lb. to 1½ gallon of water, applying with a brush, removing the loose bark, but not peeling the rods into the live bark. As a preventive in the spring dust the Vines as soon as the bunches commence developing with the lime and sulphur mixture, and repeat at intervals of three weeks till the berries are half grown. If the houses and Vines are properly dressed in winter the anthracnose is not likely to appear.

Diseased Chrysanthemum Leaves (*I., Maidenhead*).—The leaves are infested by the leaf-rust fungus (Trichobasis Artemisiæ) a rather uncommon parasite on the Chrysanthemum, but destructive when it does occur. The spores are very abundant on the specimen, the tissues of the leaves being almost destroyed by the mycelial hyphæ of the fungus; hence we should remove the worst affected leaves, but not until after spraying the plants on the under side of the foliage with potassium sulphide solution, half an ounce to a gallon of water, in order to destroy as many spores as possible. The best preventive of the infection is dusting the plants occasionally with a preparation of sulphate of copper in powder, such as the advertised fungicides called antiblight and fostite, applying with a bellows apparatus, coating the leaves as made with the finest possible coating and delivering upward, so as to distribute the poison chiefly on the under side of the foliage.

Preparing Carnation Border (*J. S.*).—On a light soil the best plan is to dress it with marly clay, using about half a cartload per rod, and either allowing it to lie on the surface till dried through, then pounding and digging in, or let frost act upon it, then when fallen, as it will after a thaw, mix with the soil evenly by digging with a fork and taking small spits. Thoroughly decayed manure could then be applied, and either dug in or left on the surface till near planting time, for Carnations like thoroughly sweetened material. As for the wireworm and also eelworm (Tylenchus devastatrix), the best preventive we have found, after several experiments, to be mustard dross, but it has a pernicious effect on vegetation, and must not be used over growing plants. For general purposes it suffices to use 1 oz. per square yard, not more, if anything rather less, or 1¾ lb. per rod, 2½ cwt. per acre. Specially for wireworm and as a preventive we advise the mustard dross, distributing it evenly and leaving on the surface or very lightly pointing in. Then supply basic slag phosphate 7 lbs. per rod, and kainit 3½ lbs. per rod, pointing in in the autumn and leaving until spring, when the land may be dressed with decomposed manure, if humus be needed, and superphosphate with quickly acting potash and nitrogen, nitrate of potash, and some gypsum (sulphate of lime). This we have found the best way of treating land infested with wireworm, eelworm, and white worm, and giving the best results in crops, especially of flowers, seeds, and "roots." If you do not use the foregoing a dressing of gas lime would be of service, as it would kill all wireworms reached and leave sulphate of lime behind, or rather the gas lime would gradually become that or gypsum. Quicklime is not a desirable dressing for light land, as it eats the "heart" out of it, but it is good against wireworm, eelworm, white worm, and, above all, finger-and-toe fungus. We do not, however, advise either in your case.

Names of Fruits.—*Notice.*—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. *In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing.* The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. *They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state.* (*F. H.*).—1, Beurré d'Amanlis; 2, Nouveau Poiteau; 3, Devonshire Quarrenden; 4, unknown. (*D. C.*).—1. Emperor Alexander; 2, Ribston Pippin; 3, Gravenstein; 4, Sandringham; 5, Roundway Magnum Bonum. (*G. L. O.*).—We are of the opinion that the Apples you send are local seedlings, and certainly they are of no value. (*C. M.*).—1, Lane's Prince Alfred; 2, Blenheim Pippin; 3, Lord Derby; 4, Beurré d'Amanlis; 5, Beurré d'Aremberg; 6, Beurré Capiaumont. (*N. P. D.*).—The Apple is Scarlet Nonpareil, and the Pear being unripe cannot be named. Read instructions above before sending again. (*V. F.*).—Alfriston. (*H. S.*).—Greenup's Pippin. (*P. J. P.*).—Irish Peach.

Names of Plants.—(*M. P.*).—1, Asplenium flaccidum; 2, Nephrolepis exaltata; 3, Osmunda regalis; 4, Adiantum farleyense; 5, Impatiens Hawkeri; 6, Allamanda Hendersoni. (*F. W.*).—Be good enough to read our instructions relative to florists' flowers, when you will find that we do not undertake to name them. (*T. H. C.*).—Pellæa rotundifolia, known also as Platyloma rotundifolia. (*K. W. G.*).—1, Lychnis dioica fl.-pl.; 2, Monarda didyma; 3, dead; 4, specimen insufficient; 5, Chrysanthemum maximum; 6, a Polygonum, species undeterminable without a description of the habit of the plant. (*C. N.*).—Owing to delay in the post and faulty packing your specimens were withered beyond recognition. We think they are distinct varieties, but whether they were admissible in a class for six hardy Ferns depends entirely on the wording of the schedule. (*J. G.*).—Montbretia Pottsi. We do not know the tree pruner to which you refer, but you can procure the Standard tree pruner from any seedsman. It is an excellent tool.

COVENT GARDEN MARKET.—Sept. 1st.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	1 0	to 3 0	Grapes, lb....	0 8	to 2 0
Cobs	24 0	0 0	Lemons, case	11 0	14 0
Filberts, 100 lbs.	22 6	0 0	St. Michael's Pines, each	3 0	8 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, ½ sieve	0 0	0 0	Onions, bushel	3 6	4 0
Beet, Red, doz	1 0	0 0	Parsley, doz. bnchs	2 0	3 0
Carrots, bunch	0 3	0 4	Parsnips, doz	1 0	0 0
Cauliflowers, doz.	2 0	3 0	Potatoes, cwt.	2 0	4 0
Celery, bundle	1 0	0 0	Salsafy, bundle	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Scakale, basket...	1 6	1 9
Cucumbers...	0 4	0 8	Scorzonera, bundle	1 6	0 0
Endive, doz.	1 3	1 6	Sballots, lb.	0 3	0 0
Herbs, bunch	0 3	0 0	Spinach, pad	0 0	0 0
Leeks, bunch	0 2	0 0	Sprouts, ½ sieve	1 6	1 9
Lettuce, doz.	1 3	0 0	Tomatoes, lb.	0 4	0 0
Mushrooms, lb.	0 6	0 8	Turnips, bunch	0 3	0 4

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var. doz. ...	6 0	to 36 0	Foliage plants, var., each	1 0	to 5 0
Aspidistra, doz....	18 0	36 0	Fuchsias, doz.	3 0	5 0
Aspidistra, specimen ...	5 0	10 6	Heliotropes, per doz. ...	3 0	5 0
Chrysanthemums, per doz.	6 0	9 0	Hydrangeas, doz.	8 0	10 0
,, ,, single plants	1 6	2 0	Lilium Harrisi, doz.... ...	12 0	18 0
Coleus, doz.	2 6	4 0	Lycopodiums, doz.	3 0	4 0
Dracæua, var., doz.	12 0	30 0	Marguerite Daisy, doz. ...	4 0	9 0
Dracæna, viridis, doz. ...	9 0	18 0	Miguonette, doz.	4 0	6 0
Euonymus, var., dozen ...	6 0	18 0	Myrtles, doz.	6 0	9 0
Evergreens, var., doz. ...	4 0	18 0	Palms, in var., each... ...	1 0	15 0
Ferns, var., doz.	4 0	18 0	,, specimens	21 0	63 0
Ferns, small, 100	4 0	6 0	Pelargoniums, doz.	8 0	9 0
Ficus elastica, each	1 0	7 0	,, Scarlet, doz.	2 0	4 0

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms ...	2 0	to 4 0	Lilium longiflorum, 12 blooms	2 6	to 4 0
Asparagus Fern, bunch ...	1 0	2 6	Lily of the Valley, 12 sprays	1 0	2 0
Asters, per bunch	0 2	0 6	Marguerites, 12 bnchs. ...	2 0	3 0
Bouvardias, bunch	0 4	0 6	Maidenhair Fern, doz. bnchs.	4 0	8 0
Carnations, 12 blooms ...	1 0	3 0	Mignonette, doz. bnchs. ...	2 0	4 0
,, doz. bnchs. ...	3 0	6 0	Orchids, var. doz. blooms.	1 6	12 0
Chrysanthemums, 12 bnchs.	2 0	6 0	Pelargoniums, 12 bnchs. ...	4 0	6 0
,, ,, 12 blooms	0 9	2 0	Pyrethrum, doz. bnchs	1 6	4 0
Cornflower, doz. bnchs. ...	1 0	2 0	Roses (indoor), doz.... ...	0 6	1 0
Eucharis, doz.	2 0	3 0	,, Tea, white, doz. ...	1 0	2 0
Gardenias, doz....	2 0	4 0	,, Yellow, doz. (Nicls)	1 6	4 0
Geranium, scarlet, doz. bnchs.	3 0	4 0	,, Red, doz. blooms ...	0 9	1 0
Gladioli, doz. bnchs. ...	4 0	8 0	,, Safrano (English) doz.	1 0	2 0
Lavender, doz. bnchs. ...	6 0	8 0	,, Pink, doz....	1 0	2 6
Lilium lancifolium, per bnch.	1 6	2 0	,, outdoor, doz. bnchs.	2 0	6 0
Lilium lancifolium, short, per 12 blooms	1 0	1 6	Smilax, bunch	1 6	2 6
			Tuberoses, 12 blooms ...	0 3	0 4

HER MAJESTY'S COMMISSIONERS AND THEIR REPORT.

"By a thorough knowledge of the laws of health, and by a strict regard to the working of these laws, good health can be made almost a certainty."

Appearances are deceptive, and it is not the pale and feeble alone who fall ready victims to disease and death. A wise doctor is not misled by outward show. He knows so much of his profession as to be certain that things are not always what they seem, and nothing will satisfy him but a minute and careful examination of his patient—his present condition, his earlier life, and even the habits and health of his progenitors and near relations. No fact is too minute, and no symptom, however obscure, can be passed over. Given all possible data to work on, he has a chance of arriving at the true state of his patient's health, and then is at liberty to prescribe the necessary remedies. Whether the remedies are applied or not, he has done his duty; and should the patient have reliance on the skill of his doctor, and a mind eager and willing to follow out the rules of

life thus laid down, there is every hope of a cure being effected, if the case be not already desperate.

It is of no use working in the dark, and accepting and using every nostrum prescribed by anxious friend or fussy busybody. It is only repeating an old tale to speak of the fearful depression which has of late years fallen on our English agricultural community—a depression that has stolen on us so gradually and so surely that at times we are nigh overwhelmed by its density.

That there have been times of trial and bad prices occurring at different periods we all knew, and we, hoping against hope, trusted that this heavy cloud would in due time pass away, and that things would regain their normal prosperity. As promotion cometh neither from the East nor the West, so hope begins to seem as far distant; indeed, so distant that it is hope no longer.

It was in the year 1893 that the Royal Commission appointed to inquire into the causes of agricultural depression began to sit; it is in July, 1897, that their report appears. There has been no undue haste, and we think they have treated the matter exhaustively. We are not quite sure whether they as a body are fully alive to the awful struggle it has been to many a tenant farmer to keep his head above water the last few years. The landlord seems to get the greater share of their pity; perhaps we are looking at their deliberations with a jaundiced eye.

As to the main causes of the trouble we agree—the falling markets and the need of thorough readjustment of rents. How to stay the fall in prices is more than anyone dare say. We might offer a suggestion, but possibly our suggestion might not be taken in good part by our readers. In many parts and on many estates there has been great abatement (permanent) of rent, but some landlords appear yet incapable of grasping the fact that bread cannot be got out of a stone, and that from a commercial point of view rents and the value of produce must be somewhere approximate.

Bearing in mind the fact that prices of grain have fallen over 40 per cent. during the last twenty years, and that beef has declined from 24 to 40 per cent., mutton from 20 to 30 per cent., wool 50 per cent., dairy produce 30 per cent., and Potatoes from 20 to 30, with Hops at an unprofitable price, the reduction in the rent of land must be something very material to meet the exigencies of the case. The fact that we now only grow about 25 per cent. of the Wheat we need proves that somewhere and somebody can grow that Wheat much more cheaply than we. At one time we felt safe if we had good Barley crops. Now the market is flooded with the produce of Eastern Europe, which quite knocks our prices on the head. In the same manner our Oats have to give place to Maize, so that we have literally nothing that will aid us to stem the flowing tide of misfortune.

The only people who appear to have made a living profit of late years are those whose holdings are suitable for the cultivation of dairy produce, fruit, and greengrocery, and who are close upon their markets—*i.e.*, near large towns, thickly populated districts, and the mining villages.

There is one thing in favour of small holdings—viz., the lessening of the labour bill. The farmer and his family do all the work, do it better, but at a lower price than hired labour. Well, we suppose if they are willing to be losers it is their own look out; but in a properly drawn balance-sheet we cannot see where the advantage comes in, it appears rather a case of robbing Peter to pay Paul. Whether any of us really understand the true meaning of bimetallism is an open question; yet a majority of the Commissioners agree that one of the steps back to prosperity will be the adoption of bimetallism in England. They ground their assertion on the fact that while agricultural depression is so wide spread throughout the countries of the world, the only two countries that are free have respectively, one a silver and the other a paper currency.

The heavy charges of the railways and the preference given in price in favour of foreign produce has been, and still is, a serious blow in the face to the English farmer. Legislature here seems powerless to step in to our aid, although there is great room for some radical change. The labour bill cannot well be touched with any safety; poor tilling means poor crops, and it is very false economy to deny the land proper attention. As to the sale of manures and feeding stuffs, well, this matter is practically in the hands of the farmers themselves. That it was not so some years ago we are the first to admit; but every farmer now knows the advantage of buying these commodities as per analysis.

The farmer wants a freer hand, too, as regards the management of his holding; in many cases he is treated more like a child or a person who is suspected of evil deeds. He is risking his capital, practically his all, and yet he is supposed to need the most stringent of agreements. That the burdens on the land are ever increasing we know sadly to our cost, and the present relief is but a flea-bite compared with our needs.

Unless something is done to attract the best class of farmers to the land, the chances are that the occupiers will be men totally unsuited to the pursuit of agriculture—men who have adopted this calling merely as a pleasant change from town life, and who, though they may have the capital, yet need the necessary skill to apply it in the best possible manner.

WORK ON THE HOME FARM.

When we were saving a fine crop of splendid Clover and hay in June and early July, we did not realise to the full the true value of it, but we know it now. For the past three weeks both horses and milk cows have been practically dependant on the haystack, for pastures have been dreadfully bare, and it is a marvel where the animals get a bite.

The rain of the 8th August, though not heavy, is now beginning to bear fruit, and the more recent heavier fall will assist the growth of herbage of which we are sorely in need. The weather now is of a very forcing nature. We hope after a good rain we may again have sunshine, for grass grown without it is of little value, as we found last autumn.

A large portion of the grain crops are now safely in the stackyard. Wheat is nearly all in, the principal crop left out being Barley. Rain in moderate quantity would still do the Barley much good. We have ourselves found the outside of the stook, which had been exposed to a few showers, much superior in quality to the inside which had been kept absolutely dry. Of course our last year's experience makes us dread the recurrence of such a disastrously wet time; but, nothing venture nothing have, and we are giving a part of our Barley the chance of a bath or two before stacking. There will most likely be an increase in the yield, apart from the quality.

Rain has kept Potatoes growing, and may be in time for the latest kinds. For second earlies it will do more harm than good, and these sorts would be better sent to market at once before second growth takes place.

Crops promise to be light all round, Giants and Up to Date, especially the latter, being the varieties that promise the best. New kinds are always promising, but it is seldom one finds the promise so well fulfilled as in the case of the Potato Up to Date.

We hear of thrashings of Wheat, and they are fairly satisfactory. The yield per acre will vary very much from 2½ to 6 qrs., but it is uniformly heavy proportionately to the straw.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet

DATE. 1897. August.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of soil at 1 foot.	IN THE DAY. Shade Temperature. Max.	IN THE DAY. Shade Temperature. Min.	IN THE DAY. Radiation Temperature. In Sun.	IN THE DAY. Radiation Temperature. On Grass.	Rain.
	Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Inches.
Sunday .. . 22	29·630	61·7	55·2	W.	61·7	69·1	54·8	118·6	49·6	0·072
Monday 23	29·771	61·1	56·7	W.	61·4	65·4	53·7	103·1	50·2	—
Tuesday 24	29·653	63 6	59·7	S.E.	60·9	68·3	54·5	106·0	49·1	0·153
Wednesday 25	29 6o5	62·6	59·7	N.	60·6	67·9	53·4	112·3	48·6	0·454
Thursday .. 26	29·781	61·5	57·6	S.	59·8	68·9	51·7	104·9	47 9	0·234
Friday 27	29·807	61·2	57·4	W.	60·3	69 2	54·1	112·3	50·0	0·021
Saturday .. 28	29·946	61·1	57·7	W.	60·0	69·7	52·8	116·3	46·9	0·010
	29·751	61·8	57 7		60·7	68 4	53·6	110 5	48·9	0·944

REMARKS.

22nd.—Generally fine and sunny, but heavy showers between 3 and 4 P.M.

23rd.—Generally overcast, but sunny intervals.

24th.—Fair early; almost continuous rain or drizzle from 9.30 A.M. to 1 P.M., and heavy rain at 0.30 P.M.; fair after with occasional sunshine and spots of rain. Halo and parhelion at 6 P.M.

25th.—Generally overcast, with frequent thunder between 10 A.M. and 2 P.M., almost continuous rain from noon to 4 P.M., heavy at 0.10 P.M. with a little hail and two flashes of lightning. A little sun about 10 A.M. and after 3.30 P.M.

26th.—Generally sunny early; fair day; steady rain from 6 P.M. to 9 P.M., and rain at 11.15 P.M.

27th.—Bright sunshine generally, but cloudy for an hour or two at midday.

28th.—Bright early and much sun in morning, but a smart shower at 9 A.M.; drizzly afternoon; sunny evening.

A very showery week, but with much bright sunshine. Temperature very equable, but slightly below the average.—G. J. SYMONS.

Journal of Horticulture.
THURSDAY, SEPTEMBER 9, 1897.

THE JOURNAL OF HORTICULTURE *can be obtained from the Office,* 171, *Fleet Street, London, post free for a Quarter,* 3*s.* 9*d. Editorial communications must be addressed to* 8, *Rose Hill Road, Wandsworth.*

DECORATIVE WORK.

THE question of decorating, under some of its diverse forms, is one that is always with us. At all seasons of the year one or other phase of this work enters into the lives and duty of most gardeners. Church festivals and public functions provide the chief examples on the one hand; on the other, and nearer home, all sorts and conditions of decorating, from that pertaining to the gay and festive scenes of social gatherings to the solemn and sad last duties paid to poor humanity. It has become an established custom to use the innocent forms which the kindly Mother Nature bestows on man, who finds that "For his gayer hours she has a voice of gladness, and a smile and eloquence of beauty;" and that "She glides into his darker musings with a mild and gentle sympathy that steals away their sharpness ere he is aware."

So much has been said from time to time upon the different forms of our subject by those eminently capable of treating of it; so much has been seen by most of us in the shape of work which, whether participated in or not, must to the observant mind have its correlative educational value, that at first sight the subject may be viewed as one upon which nothing remains to be said or to be shown worthy of occupying further space. This conclusion, hypothetically arrived at, would veto the subject as being exhausted, which, I venture to think, is as far from being the case as is any other of the great branches which spring from the ever-spreading tree of knowledge we fain would climb.

In a life's experience one has seen many examples of this kind of work, which may be termed good, bad, and indifferent, and in the same comparative degree we may see them still. Such being the case, as well as the subject in its comprehensive form being of more or less importance to most gardeners, it is purposed here to make a general review, as well as to propound some simple rules to form collectively outlines for beginners. As this, probably, will carry us beyond the limits of one paper the brief explanatory introduction appears necessary.

Those errors which are noticeable in one phase of our subject generally apply to all. These are over-elaboration; incongruity from the employment of

unsuitable foliage with certain flowers; a puerile effect from the introduction of too much variety; a disregard of working in harmony with architectural outline on the larger scale; and, generally, a want of forethought, which commences the work with the vaguest anticipation of results, and too often falls short of the desired effect.

Apropos of the latter may be mentioned the case of a worthy man and a good gardener, who was bidden to prepare his decorations for a marriage in high life. The time was ample in which to do it, and his cultural skill as a gardener left nothing to be desired in that direction, quantity and quality being conspicuous when, prior to the eventful day, all was transported to the village church. All the munitions of war (or of peace) having been so plentifully—nay, even lavishly—provided, one would reasonably suppose that victory lay in his own hands; but a confusion, perhaps paucity, of ideas of decorative art prevailed, which was evidenced at the start by "My Lady," whose anxiety had led her to inspect the initiatory stage, and ask for particulars respecting the more prominent parts, eliciting the reply, "I don't know myself what will be put there yet." And so the work proceeded, with endless shifting and re-shifting, doing and undoing, worry and confusion. Good effects close at hand were lost in the distance; and the elaboration of petty details, well enough for draping a greenhouse stage or furnishing a dinner table, were lost in the "dim religious light." Probably no man ever worked harder than our friend the head gardener, or received so few compliments for his pains.

Again, here is another sketch from life—a gardener's life; of one who bitterly complained of torments he endured over floral decorations in the mansion. The daily filling of the vases was a daily source of vexation, increasing up to that stage where patience was exhausted, and the last complaint hurried him out into the grounds to cut rough sprays of hardy flowering shrubs haphazard, with the remark, "That will settle the matter and settle me." He really thought he was to receive his *coup de grâce* by dismissal when the "mistress" sent for him to say, "B——, I am delighted with the vases, they look so light and natural; always do them like that;" and he did, losing in one accidental hit all the stiffness and constraint which had tied his hand till late in life. Similar instances of playing at cross purposes are somewhat common, and although some of the happiest effects have been, like many inventions and discoveries, the result of pure accident, which in no wise minimises their value, few decorators can afford to work upon lines so desultory.

For the benefit of young gardeners it may be well to inquire into the essentials which compose a good decorator. In the first place our subject is too elastic to be confined within any hard-and-fast lines, at the same time there are ethics of harmony and design which may not be disregarded. The eye and hand which have been conjointly trained in but the simple elements of geometrical drawing, with some knowledge of harmony in colours, will seldom lead the inventive faculties astray in this direction. For work on the largest scale our ideas should be as broad and as bold, one might even dare to say as noble, as those which have produced some stately pile we may be called upon to adorn. Work of this magnitude will, we may allow, be required but rarely at the hands of a gardener; church festival decorations being usually co-operative work, the several sections of it are usually undertaken by parochial volunteers; but whether a gardener is called upon or not to perform, to direct, or to advise upon such matters, it ought to be well within the scope of his intelligence to be able to do so; and not only able to advise, but from the very nature of his work and observation he should be better qualified to do it than anyone else.

In the main these sentiments will, perhaps, be endorsed by our liberal-minded readers, and in that expectation one may go so far as to say that it is essentially necessary that the eye should be trained at a glance to take in the chief outlines in order to form a ready and accurate plan. The critical eye will always seek for error, and, moreover, dwell upon it to the detriment of otherwise good work; in fact, one note of discord is sufficient to mar the harmony of the whole piece.

What could have prompted one decorator to spoil some really good work by hanging surplus wreathing swing fashion across a noble Gothic window, which had been beautifully outlined with the same greenery in conformity with its requirements, it is not easy to imagine, unless it proceeded from a weakness which could not let well alone. He could not stop when he had finished. Trivial as this may appear, it is a very common fault, and not less a fault that it springs from the best of motives. Much good work is spoiled by over-elaboration, particularly in dinner-table decoration, by those who have the greatest wealth of material at their command. A study of each form and phase of floral decorative art may worthily, I think, if briefly, engage our attention; hence the indulgence of further space is asked for.—

DECORA.

(To be continued.)

HARDY FLOWER NOTES.

LIKE all other occupations, gardening, even if followed for pleasure alone, brings with it its disappointments. Things do not always go smoothly; something happens to upset our calculations or expectations, and we are, as a matter of course, disposed to look upon the gloomy side of life. At these times we might do worse than become followers of Mark Tapley, and seek to find enjoyment even from the misfortunes of the day. Now and again we feel the need of a double inspiration of the spirit of that philosophy, and it is perhaps never more needed than when bad weather brings ruin to our hopes and mars or destroys our favourite flowers.

Such a time has come as these lines are written. Rain, not in showers, but in torrents, batters down the flowers and defaces or utterly ruins their beauty. What though the Sunflowers shine as gold through the driving rain! others there are which look weary of the element they at other times long for. The Gladiolus would fain have less now that it has reared its spike clad with beauty among the other flowers. The Sweet Peas "winged for flight," as Keats says, look as if they longed to fly to sunnier lands where their soft or gay-tinted blooms would enjoy a brighter time. The autumnal Roses look draggled and forlorn as they struggle against the storm, and other flowers are in no better plight. But this talk is profitless, and hardly in keeping with the Tapleian philosophy. Let us then see the flowers of the time through glass of brighter hue.

Much of the garden's attraction comes now from the Composites—from the Helianthuses, the Heleniums, Inulas, Coreopsis, and allied flowers, with the chastening coloured Asters. We must admit that the annuals, less enduring so far as regards duration of life, are priceless at this time, as are Dahlias, Gladioli, and other half-hardy flowers. The Cannas themselves are delightful in many gardens, with their handsome leaves and brilliant flowers. Let us not despise any of these. Let us draw from their ranks some to grow beside and associate with the perennials, which are the main subject of these notes. Others who make a special study of these half-hardy and annual plants can better tell of their respective merits than I. To them the duty of telling of these flowers in detail must be left, but it is surely permissible to speak favourably of them in general terms here. This said, we may turn once more to the perennial flowers which are, and must ever be, our principal topic.

Among these yellow-flowering composite flowers there are some with stiff and ungraceful habit, or with heavy, lumpy blooms. Fine flowers do not always go with graceful foliage, any more than are talent and beauty always combined in individuals of the human race. There are, however, among the Coreopsis some plants combining elegant foliage and pretty, if not handsome, flowers. None of these is prettier or more elegant than Coreopsis verticillata, a comparatively old plant, conspicuously absent from many gardens.

My first acquaintance with it was made a good many years ago at a flower show held at Carnforth, in Lancashire, where it was exhibited in a class for herbaceous plants. I was struck with its grace as shown, and this admiration was heightened when it was seen in the border. Some woodcuts give a very imperfect idea of its habit when it has formed a good-sized plant, and would give anyone a poor impression of its merits. It is vaguely defined as coming from the "United States" and has been in cultivation for nearly 120 years. The bright, golden yellow flowers are very pleasing, and from being held erect on their wiry stems are all the more effective. Much of the charm of the plant is undeniably due to the leaves. These are in whorls, and are very finely divided, so as to give them a very light and attractive appearance. It grows from 1 to 2½ feet high. C. tennifolia is a synonym. C. verticillata likes a light soil, with a fair supply of moisture in summer. In some gardens it appears to die out occasionally, but this seems to be only in exceptional cases, and it is difficult to suggest a cause for this, as it is quite hardy in even colder districts.

The Platycodons are justly general favourites with all. Their beautiful flowers are appreciated when fully open, and they are likewise admired when their buds are nearly ready to open, their peculiar, inflated appearance being the origin of the popular name of "Balloon Flower." There seems little conflict of opinion as to the respective merits of P. grandiflorum and its variety Mariesi: the latter, by a general consensus, being admitted to be of more perfect beauty than the taller typical form. P. g. Mariesi album is very beautiful also, and its greater novelty will in all likelihood lead to its rapid introduction into gardens now that it can be procured at a low price.

I do not think it is generally known that there are not only a white form of P. grandiflorum, but also some others seldom offered in nurserymen's catalogues. These are more expensive, but some may like to know of the existence of these forms, and what they are. There are semi-double blue and semi-double white varieties; also single, pale blue, and single striped plants. Such fine autumn flowering plants as the Platycodons deserve and require more attention than has been given them by many in the past. Once established, they should be let alone, and removed as seldom as possible.

Now that September has begun to run its course, the rock garden has lost much of its colour. Heaths, Autumn Crocuses, Campanulas, and some others yet help to keep up the interest so far as regards flowering plants; but the days of its greatest beauty are past for the year. Still some flowers of bright colour recognise the influence of the sun, cooler though it is, and spread their petals when it appears through the gloom. Among these are yet a few of the Oxalises, a class of plants but rarely grown on account of their reputed tenderness. One would not like to hazard the statement that this want of hardiness is not too common among the plants of the genus. Among them, however, we find a few which may be called hardy in gardens in mild localities where a light, well-drained soil, and a sunny, warm position can be found.

One of these is Oxalis lasiopetala, the Hairy-petalled Oxalis. This has what have been called deep rose-coloured flowers, with perhaps a tinge of that purple so prevalent in the genus. This tint of purple is a defect with many of the flowers; but we must take them as they are, and find counterbalancing advantages if we can. Another defect is that the flowers are sun-lovers, and hardly condescend to open except when the sun shines. It is a failing from one point of view, but only helps to give strength to the pleasure we have in brighter weather. These flowers are produced in what is called by botanists a cyme, and the flowers are thus more effective than if produced singly. The leaves are radical, are raised on rather long petioles, and have obcordate, deeply notched leaflets; the root is tuberous. O. lasiopetala comes from Monte Video and Buenos Ayres. It is a wise precaution to give it a slight covering in winter.

Those—and their number is fast increasing—who find in Alpine gardening a pleasant hobby might do a service to many others by experimenting with other members of a genus little known in the outdoor garden, and not sufficiently appreciated by those who make perennial flowers their study and care.—S. Arnott.

DECADENCE IN TRAINING WALL FRUITS.

Your correspondent "H. D." (page 213) writes well on the "decadence of wall fruit culture;" but I wonder how old he is. I am old enough to believe two things—1, that fruit, generally speaking, is "cultivated," so far as size and quality are concerned, as well as ever it was, though there are exceptions; but (2) that the training of trees against walls has, as a rule, degenerated into a procedure of huddling and shuffling. In innumerable instances this is pitiable to see; and not in all of them, or in half the cases, is the true cause want of time or the pressure of other duties, but lack of interest, zeal, or knowledge, or perhaps of a little of all combined.

Gardeners, as a body, worked quite as hard a generation and more ago as they do now, and if not harder, certainly more hours. The best of them, who took real pride in their work, would no more let their wall trees suffer by want of timely attention than they would allow the Grape crops to be spoiled through negligence in thinning; and they would as soon devote two hours before 6 A.M. or the same time after 6 P.M. to one duty as the other, and this without whining and grumbling, or preaching about "slavery." It was not regarded in that light at all, but the work was done cheerfully by head men and under, for the credit of the garden and of themselves.

What, however, it may be asked, has all this to do with "H. D.'s" age? Nothing; but something else has, and this something he furnishes himself in the following words:—"I yield to no one in my admiration of a well-balanced, fan-shaped tree, in which every angle is a correct one; but they are expensive objects of beauty, which gardeners can scarcely afford to grow in these utilitarian days, for much labour is needed to keep them in the best condition."

In my wonder as to how old "H. D." is, it is not to be presumed that he is thought to be a mere boy, or anything of that kind. The excellence of his article as a whole forbids any such presumption; but while admitting he has had good experience in some, and perhaps many, things, I am all the same convinced that he is not old enough to know what he is talking about when he proclaims a well-trained tree, be it fan, horizontal, or any other shape, as "too 'expensive' to keep in the best condition." He has fallen a victim to, by becoming a believer in, a popular fallacy.

What he has written in the sentence cited cannot have been founded on experience. If he had ever had really well trained trees with "every angle correct" to manage he would not have written such nonsense. All the old masters of the art of training wall trees know perfectly well that those which they prized as approaching their standard of excellence as "objects of beauty" ("H. D.") cost less, and a good deal less, in keeping them in the desired condition than do those which are managed (?) in the rushing and crushing higgledy-piggledy fashion, miscalled training, now so prevalent in many gardens.

Then comes in the blessed word "utilitarian." It seems to have become quite fashionable of late. One purpose it serves is that of a great garden umbrella, under which "modern" men who do not (cannot) do what the ancients did, take shelter. It is certainly easier than working—in hot weather. "We have to make the most of everything in these days," say the moderns. "We have even to sell all we can, and make all we can—quite different, you know, from what it used to be." Used to be! How do they know the customs of the time before they were in "button clothes?" If they had worked in gardens half a century ago they would have found something else to do than going a tripping.

Though it was not proclaimed from the house-tops, there was plenty of selling in those far-past days. There was as much of it in a ducal garden, and another of a knight of the shire, in which the writer served, as could be got out of them by the most strenuous exertions; and there was—and here is the point—as much money made from the splendidly trained wall trees as I venture to say "H. D." has ever obtained, or ever will obtain, from an equal area of surface, which trees are made to cover on, what I call, the anyhow plan, but which he euphemistically terms the "less methodical" system.

By the "anyhow plan" you rush the trees into bearing a year or two sooner, crowd them with fruit which is more stone than luscious pulp, more core and kernel than flesh, thus deceiving the public and shortening the lives of the trees, then thinking yourselves clever enough to be knighted like Sir Joseph Paxton. Do not be vain; do not harbour the false notion that bad training (unsightly trees) means good crops, and good training (handsome trees) means bad crops. The idea is too stupid to be discussed.

If a man, be he of the ancient or modern school, cannot grow crops of fruit quite as valuable from well-trained as from ill-trained trees he does not know his business, and ought not to pose as a gardener, but step into his right place as a not over-intelligent labourer. He may do good and honourable service there, also, perhaps, make a "bit of money" and be happy.

I have been watching the tone of the moderns for some time in silence—publicly at least, but not privately, for there I call them wildings—until I can stand it no longer, and at last, like the old hunter, have broken loose for a dash after the hounds, as if the cub-hunting season had come round again. In full cry are you? Well, I think I can stand the music.—Melton.

"H. D.," at the close of his paper on this subject in the *Journal of Horticulture* (page 213), asks for a sort of vote or expression of opinion as to the reasons why this phase of gardening should have gone back, as it undoubtedly has gone back, in garden management during the last ten or twenty years. There is no question in my mind that the two causes given by "H. D." are the strongest influences in the matter. First, reduced labour, partly caused by the depression in agriculture and in everything pertaining to land, plus increased society expenditure, which contribute their quota to the expenses of an establishment, and when economy has to be enforced it is usually, more's the pity, the garden department which feels it first and heaviest.

Second, fashion in table and house decoration, which has gone up by leaps and bounds for some time now, making an excessive demand on the labour that is left, and causing the strength of the establishment to go towards productions for decoration both indoors and out, so that the fruit and vegetable departments have to make shift with what they can get. The other work *must* be done, the latter as it can; thus it comes to pass that the garden walls, which were one time the pride of the gardener by reason of their order of training and fruitful health, are now left untrimmed till late in the year, and that which has to be done is done in a hurried and slipshod manner, distressing to a quiet, orderly mind, and this with insect visitations, which cannot be attended to at the proper time, soon reduce the fruitfulness of the trees.

There is another cause, though, which was unknown in the higher class gardens years back, but which is increasing slowly but surely every year, and that is, the commercial spirit which has entered into nearly all private establishments, great and small. When a nobleman opens an emporium in one of the principal streets in London, and sends to it the best products of the garden, the farm, the dairy of his estate, and makes no secret of it, and he only one of many who trade in one way or other, we may well say that market gardening has become the trade of the aristocracy. When this shop supply has to be kept up day by day, and week by week the year through, then the gardening at that establishment has to go on quick, up-to-date lines. More orchards of the new, attractive, and quick bearing Apples, Pears, Plums, and Cherries are planted, larger breadths of land laid down for the bush fruits, and more and larger areas of the garden, and sometimes farm land, devoted to Strawberries. Everything is arranged to bring in the "nimble ninepence" and the "slow shilling" crops, including the wall trees, have to get what attention they can.

This is enough to make the hair stand on end of the old gardener who has been accustomed to take things calmly, to have time for everything, and to distribute what he had of overplus to those on the estate, who would be benefited thereby. Oh, yes! "the old order changeth." Now all is push and "go," and jobs that used to be done steadily by the workman are very often pushed on, and the workman is unceremoniously told that, "It'll do," and sent on to the *next* job. Well, gardeners who are wise will recognise this state of things, and adapt themselves to them as well as they can, and even we old fogies must bend to circumstances, and adapt ourselves to them. It is no use moaning and lamenting over past days. We may groan over our neglected wall trees, which have been our hobby for many and many a year, and sigh over the decadence of wall tree fruit tree growing, but *cui bono*?

To my mind these are the strongly operating causes, and I send them in as my vote or opinion to account for the decadence of wall fruit tree culture.—An Old Provincial.

LIFTING AND POTTING CALLAS.

The Callas (Arum Lilies) which have been planted out in the open ground should now be lifted and potted, so that the plants may have time to become established before the advent of frosty nights demands that the shelter of glass be afforded them. The size of the pot the plants require will depend on their strength, and whether a number are growing together, or only a single crown. Fairly strong and vigorous single plants may be placed in 7 or 8-inch pots. Two plants, if strong and well furnished with roots, cannot be easily accommodated in a less size than a 9-inch pot, unless the roots are freely reduced to fit a smaller pot. Larger specimens may be made by employing clumps with an increased number of plants, or placing smaller clumps together to fill the pot. Provided the plants were given good material when planted in the open in early summer, they may be lifted with the soil adhering to the roots, only sufficient of the latter being cut off, along with the slicing of the soil, to make the ball fit the pots.

Some check may be afforded to the rapid growth of the plants previous to lifting by running a sharp spade round them about a week in advance of potting. They may need the roots still further reducing at the time of lifting, but the check will be less sudden and severe.

It is an advantage to have the roots and soil moist, though not in a wet mortary state. To insure a moist condition water copiously the day before lifting. This, however, would be unnecessary if the operation is carried out on the first dry day after a good downfall of rain.

The pots required ought to be clean, moderately drained, and in readiness to be occupied as the plants are lifted and prepared. Over the drainage of crocks consisting of two large pieces and a few smaller, place a layer of flaky manure, scattering upon that a dusting of soot. Very little prepared compost will be required, but some may be conveniently at hand to fill up spaces when potting. Loam, with one-fourth decayed manure and a little sand, forms a suitable mixture.

When each plant is lifted with the spade chop round it to the approximate size of the pot and cut off the base to the necessary depth. Carry out the final reduction of the roots with a sharp table knife, reducing the ball so that it may be sunk into the pot just about level with the rim. Then, by gently jarring the pot on firm but yielding ground, the whole may be sunk low enough to afford room below the rim for the supply of water. Any spaces left may be filled in with compost.

After potting stand the plants in the shade, giving a good soaking of water. Syringe freely every dry day, and when established bring out the plants to a sunny and open position, where they can remain until the period of housing for the winter.—E. D. S.

HOME-MADE WINES.

(*Concluded from page* 214.)

Raisin Wine.

When we consider that raisins are merely Grapes deprived of their water by evaporation in the sun, we have no difficulty in seeing how well they are adapted for wine making. The best for this purpose are Valencias, and, if these cannot be had, the next best are Malagas. Before using them the raisins must all be separated from the stalks.

To make an 18-gallon cask of wine, 20 gallons of must has to be provided, and 6 lbs. of the picked raisins must be added to each gallon of water, so that it will require 120 lbs. of raisins to make the 20 gallons. After the raisins are stripped from their stalks they are to be put into an infusing cask, with 20 gallons of soft water, heated to the temperature of 90°, and then the whole is to be well stirred. The stirring and bruising of the fruit in the infusing cask is to be done three times a day for eighteen days, and a sample of the must is to be taken out morning and evening for the purpose of being examined by the saccharometer, and the gravity noted. As soon as the saccharometer indicates a gravity of 80, the must is to be drained off from the infusing cask and strained through a sieve into the fermenting tub, the fruit being well pressed with the hands and thrown into another vessel ready to receive it. The 20 gallons of must, which will now indicate a gravity of 80 or 90, is to be brought up to the standard of 135 by the addition of sugar, which will be a little over $1\frac{1}{4}$ lb. for each gallon, and also 6 ozs. of argol.

As the making of this wine takes place in the winter, the temperature of the apartment where it is conducted should not be less than 55°. The must is to be well stirred every morning, and if all goes well the gravity will probably fall in the course of a week to between 90 and 100, but this will greatly depend on the warmth of the weather. When the must has attained this gravity, it is to be put into casks for the final fermentation, and the casks ought to be washed out with boiling water, and the must put in while they are warm. If fermentation through this has been checked and the must remains in a dormant state, put in three table-spoonfuls of good thick brewers' yeast, mixed with a quart of the must, heated to a temperature of 85°. The heated must and yeast are then to be put in a vessel capable of containing two quarts, as it will expand. In about an hour after this expansion will take place, and be accompanied by an early fermentation. It is then to be put into the 18-gallon cask, which is to be kept full to the bunghole so long as the vinous fermentation lasts, and afterwards bunged up.

To Clarify Wine.

If the wine be good and rich but not bright it may be fined by any of the following methods:—

Milk Fining.—This is only used for white wine, as it would injure the colour of red wine. The quantity to be used is 1 pint of skimmed milk to every 5 or 6 gallons of wine. Pour upon the milk some of the wine drawn from the cask, mix it well by stirring with a stick, then pour it into the cask; rouse it up well with a stick, without disturbing any dregs there may be at the bottom. In three or four days it will be fine, and must be bottled off as soon as possible. Wine is always spoiled by leaving it long in contact with the fining, whatever the fining may consist of. Milk fining is preferred when the wine is harsh and has acquired a dark stain, which milk removes.

Isinglass Fining.—This fining is preferable to milk for general use, and is applicable to red as well as white wines. The best method to pursue is as follows:—For a hogshead of wine take a quart of warm water in a large jug, and put to it 1 oz. of isinglass broken small; add to this 1 pint of white wine if for general use, or some of that which is to be fined; stir the whole up three or four times before the water is cold; let it remain two or three hours, or if not dissolved, two or three days—the time is immaterial, but it should be quite cold and quite dissolved before going further—now add a pint more wine; stir the whole up well, and strain it through fine linen. This is wine fining, as sold by the makers in wine countries, and 1 pint of it is sufficient for 15 gallons of wine.

According to the size of your cask, take so many pints of this fining; mix more wine with it, which will perhaps occasion a floeculent deposit; this must not be lost, but the whole tubbed through the hair or wire sieve, or, still better, milk strainer. The fining will be ready now to put into the cask; and the reason of diluting it first is, that if you put it in too strong it coagulates immediately and falls down in lumps, rather than in the fine particles which are required. Stir the whole up well after the diluted fining is poured in, bung the cask down tightly, let it stand till the wine is fine, which will be from three or four days to a week. Bottle off without disturbing the lees or sediment.

Egg Fining.—For English home-made wines and for the red wines of France, the white of an egg is generally employed. The white of seven eggs is sufficient for a hogshead of wine, and to employ

them it is only necessary to beat them up in a quart or two of the wine; then put the mixture into the cask, and rouse or stir it up well with a stick. Egg fining is generally longer in settling than isinglass, and to fine a hogshead occupies from two to three weeks. If it is not intended to bottle the wine, it must, after fining, be racked into a clean cask in all cases.

Sulphuring Wines.

To prevent wine from fermenting too long, and thereby becoming too much attenuated, and also to prevent a second fermentation, by which the wine would be converted into vinegar, it is necessary to what is termed "sulphur" them. This is done by burning a sulphur match in the cask, after a portion of the wine has been withdrawn to give room for the match to be burned. The match is a strip of linen or cotton cloth 6 to 7 inches long, 1½ to 2 inches wide, dipped in melted sulphur. These matches are attached to the bung, and when set on fire are introduced into the cask and the bunghole is closed. By burning the sulphur sulphurous acid gas is generated, and this acting on the wine arrests the acetous fermentation.

ESCALLONIA LANGLEYENSIS.

Many of the Escallonias are cultivated in gardens, and are, as a rule, very highly appreciated. The majority of them are exceedingly beautiful, and do thoroughly well on walls, or even in the open borders in sheltered places, or by the seaside, where they thrive splendidly. As the well-known forms are so popular, the hybrid depicted in the illustration (fig. 33), and which was shown at the Drill Hall in June by Messrs. J. Veitch & Sons, Ltd., will most certainly be welcomed. E. langleyensis resulted from a cross between E. macrantha and E. Phillipiana, and, as may be seen, partakes somewhat of both parents. The flowers are produced in clusters on the branchlets of the strong growths, and are, of course, much more numerous towards the top than they are at the bottom. The colour of the flowers on first opening is bright rose, but they pale slightly with age. An award of merit was granted by the Floral Committee.

A NORTHERN TOUR.

A few days' relaxation from the ordinary routine of labour, with a change of air, scenery and company, is oftentimes productive of physical, moral, and mental good. Perhaps few would anticipate a beneficial change from the Garden Isle to the busy and smoky counties of Yorkshire and Lancashire, but in a "tyke" there is an in-bred affection for old friends and old scenes. Brief notes of my tour may interest if not instruct a few of your readers.

I left the Garden Isle the last day in July, staying the night in London and proceeding to Bradford from King's Cross on the following day. The harvesting operations round Hatfield and Hitchin seemed to be in advance of the Isle of Wight, which I considered was mainly due to the former places being minus the sea breezes which are constantly experienced in the latter place. Many of the stations on the route were made gay and cheering by hanging baskets which contained flowering and foliage plants in variety. What a great scope there is for development in this direction. May we hope that the various railway companies will still further encourage their officials to make not only the approaches to the stations but the platforms and waiting rooms gay with plants and flowers?

Shortly after leaving Doncaster a change came over the scene; huge chimneys towered high above the masses of houses here and there, being only separated by a few miles of country. The hedges were replaced by walls, and instead of hamlets there were busy and thriving towns, the landscape being adorned with pit shafts, pit hills, and coal waggons. Bradford was my first stopping place. This town has lost one of its greatest benefactors in the late Sir Isaac Holden, Bart., of Oakworth House. After a night's repose several town gardens and the parks were inspected. Lund Park is on the west of the town in a thriving and populous district. The situation is rather exposed, but since my visit two years ago several alterations have been made by Mr. J. Slater, the able gardener, which will prove beneficial. The carpet bedding is very appropriate to the season, and is well done; whilst the mixed bedding of flowering and foliage plants is effective. The inhabitants of the district take great interest in the park, and are highly satisfied with its present condition. Devonshire Park is to the north of the town. It is in excellent condition under the direction of Mr. Bainbridge, and affords a welcome place of rest. Victoria Park to the eastward is a large expanse of land where huge trees relieve its monotony and afford shelter not only from passing storms but also from the sun's powerful rays in the hot days of summer. It is admirably suited for galas and fêtes.

Town gardens are by no means numerous, no doubt largely due to the difficulties which have to be encountered. R. Edmondson, Esq., Acres House, is an enthusiastic floriculturist, and spares no pains or expense in doing things thoroughly. Mr. W. Shaw, his gardener, shows excellent results, considering the manifold difficulties under which he labours. J. B. Summerscales, Esq., Rockfield, is another gentleman passionately fond of horticulture, but has to labour under unenviable climatic conditions. Under glass plants are looking exceedingly well; Tomato crops excellent; Grapes are fine, bunches and berries large, well shaped and a good colour. Mr. J. Sugden, the gardener in charge, is thoroughly at home in the various branches of gardening.

On Saturday, August 7th, I paid my first visit to Tong Agricultural and Horticultural Society's Show, and to Tong Hall, the residence of Sir Robert Tempest, Bart. The old-fashioned mansion is situated in a lovely and well-wooded park of over 300 acres. The horticultural department is under the superintendence of Mr. R. C. Turner; the condition of the kitchen, fruit, and flower gardens, the vineries, Peach, and plant houses marking him as a man of exceptional abilities. The Chrysanthemums are very fine indeed, whilst the Tomatoes are cropping freely and show no signs of disease.

In the evening I was privileged to join the members of the Bradford Paxton Society in their visit to Bowling Park, which is one of the far-

Fig. 33.—Escallonia langleyensis.

famed Bradford parks, and is ably managed by Mr. J. Spencer. Considering the park has been made out of pit-hills and is so situated as to have more than its share of wind and smoke, it certainly reflects great credit to the gardener and his staff. There were several fine plants of Centranthus alba, which had an imposing effect. Looking down on the flower garden with its many beds filled with flowering and foliage plants, judiciously arranged, as the sun was sinking in the west, one saw an effectively beautiful picture.

From August 9th to 12th a few profitable days were spent in Darwen and district. Since my last visit to this progressive town two parks and a technical school, with reading room and free library, have sprung into existence. Bold Venture Park I consider, for its size, one of the most picturesque and natural I have ever seen. The undulations, deep ravines, and miniature waterfalls, relieved by the greensward, with here and there beds planted with the choicest of trees and shrubs most suitable to the district, give it an effect that words cannot describe. Its close proximity to the centre of the town renders it an invaluable acquisition, whilst at the rear only two or three fields separate from it the famed Darwen Moors, which rise to a great height above the sea level, affording a magnificent view for miles around. Whitehall Park is esteemed by the inhabitants of the far end of the town; it is not only well laid out, but ably managed.

Woodlands, the residence of W. B. Huntington, Esq., J.P., is picturesquely situated in a well wooded estate. The conservatory, stoves, greenhouses, vineries, and Peach houses are very extensive, and are under the superintendence of Mr. Wm. Neale, the head gardener. Astley Bank, the residence of C. P. Huntington, Esq., J.P., is another local place noted for horticulture. Mr. C. Grey is an adept in most branches of gardening.

One of the most instructive things to me round Darwen was to see the interest the amateurs and cottagers took in the things they were growing for exhibition. These men are nothing if not enthusiastic; fighting as they have to do against soil and climate, the results they obtain are surprising. A visit to Blackburn Park was a treat not to be missed, whilst my Lancashire tour was brought to a close with a hurried glance into Milnshaw Park, Accrington.

On the 12th I returned to the broad-acred shire, with a few days to take leave of my friends ere proceeding to my home in the Garden Isle. What one sees and hears on these short visits would fill columns. One gardener is a strong advocate for hotbeds; another thinks the periodical lifting of Peach trees and root-pruning, with the addition of new material, is a necessary operation to obtain the best results; whilst a third dissents from this altogether, believing that feeding with liquid manure and top-dressing is quite sufficient. And so I might go on, giving the opinions of men I met whilst on my northern tour.—S. Heaton.

IS GRAPE GROWING DEPRECIATING?

Doubtless we are very reticent in these go-ahead times to admit that in any phase of the gentle art we are in reality not going forward, but losing ground. It is, however, questionable whether such is not the case, and though "Traveller," on page 170, ventured on dangerous ground, there appears to be a good deal in what he says that it is difficult to refute. His arguments will doubtless be met from different standpoints. In the first place, there are men who are always ready to uphold anything that favours the good old days, and are unwilling to admit the effectiveness of any modern development. "Traveller's" notes will serve as a balm to their spirits, and if I mistake not his sentiments will be fully re-echoed in the mind of many a gardener of the old school. Secondly, there are the young bloods—gardeners trained in a more recent school, who are apt to look disdainfully on the methods of the "old fossils," as your correspondent terms them, and think that nothing can be good if it is not original. It is somewhat surprising if this section of the craft do not pour the vials of their wrath on the offending head of "Traveller," or set him down as being some ancient fogey, who stands up for old times simply because they were the days before he was bowled out by some youngster, who perhaps had once upon a time crocked pots for him.

Thirdly, there is another section of readers, men who have no particular prejudice either way, but are ready to look at any argument fairly and squarely, and then attack or defend it as their convictions direct. There is a distinct tone of sadness running through the article on page 170, and one gathers the idea that the writer is fully decided that the whole thing is going to the dogs as fast as it can, and in a few years the time-honoured craft will be nothing more than a name. Fear not, "Traveller;" the ground gained is considerably wider than that which is lost, and if as the Editor suggested, you went to Shrewsbury, let us hope that you returned home a re-assured man, with some feelings of satisfaction that after all everything relative to gardening is not in a state of decay.

In agreeing with the sentiments respecting the decadence of Grape-growing to some extent, perhaps I may be referred to the great provincial exhibition as an undeniable proof of the high standard of excellence still maintained in the cultivation of this popular fruit. It is true that magnificent Grapes are always seen at Shrewsbury, and is it surprising when we consider the magnitude of the show, the wealth of prize money, and the all-important fact that it takes place at the very best time of the year for the exhibition of Grapes? The Grapes at Shrewsbury are an exception, and allowing their excellence by no means does away with the contention that we rarely see the quality that was exhibited years ago. Even the Shrewsbury prizewinners may be counted on the fingers, and while we worthily sing their praises we must remember that some of the chief of them belong to the same school as Mr. Henderson, who did great things at the time to which your correspondent refers.

Leaving Shrewsbury out of the question, let us turn to the earlier shows, when to get white Grapes an amber colour and black Grapes like Sloes is an art worthy of the best of gardeners. "Traveller" speaks of Hamburghs weighing nearly 20 lbs., doubtless exhibited at a summer show; I refer to Hamburghs that were subjected to hard forcing through the treacherous early months of the year, and exhibited in May and early June in a high state of excellence, that nowadays is rarely seen.

There will doubtless be those among the readers of these lines who remember the splendid examples of Grape-growing skill that used to be staged at the Whitsuntide shows at Manchester. There I have seen perfect bunches of Hamburghs weighing from 2 to 3 lbs., and similar bunches of Foster's Seedling and Buckland Sweetwater, with large highly coloured berries, in every way fit for table. Consider that the Vines which bear Grapes at that time of the year have to be sharply forced, and the most consummate skill of the gardener must be brought into play to bring them to anything like perfection. The question asked is, Are such Grapes shown now at the early shows? I append also my answer—an emphatic No.

Again, turn to the great R.H.S. show in the Temple Gardens. In most respects its excellence and magnitude have extended wonderfully, and visitors attend in increasing numbers yearly with the expectation of seeing the highest results of gardening skill. There is indeed much to admire, but what of the Grapes? Neither at the last nor the preceding show was there anything worthy of more than passing recognition. It might be that the Society's award is not considered sufficient by gardeners to repay them for the expense and labour incurred in showing at the Temple; but, on the other hand, gardeners or their employers exhibit collections of vegetables, fruit trees in pots, and groups of plants. No, the argument is not strong enough, so it must be that first-class Grapes at Temple Show time are scarce so scarce, that a meritorious exhibit rarely now appears on the tables.

The Crystal Palace Fruit Show is rapidly drawing near, and "Traveller," with others who are interested, will have an opportunity of noting whether there is or not real ground for fear. At a great show devoted entirely to fruit, and held directly under the auspices of the premier Society, we certainly *ought* to see the best examples of Grapes that our gardeners can produce. Yet is it so? According to last year's standard a negative answer can only be given. With a few exceptions the bunches were loose, and the berries lacked the colour and finish that all good Grape growers love to see. In the black Grapes there was a redness easily noticeable, and with the white ones there was a tinge of green instead of the golden amber that should characterise them in September. I hope this year will see an improvement, as the Show, in the deterioration of the Grape section, will lose one of its brightest features.

At the Drill Hall meetings, too, we get almost everything in the way of fruit, flowers, and vegetables, but rarely any Grapes. The solitary instance I can call to mind was the exhibit last year which came from Chiswick Gardens. Gardeners show collections of Apples and other fruit, including Melons galore, and why not Grapes? The only answer seems to be because they have not got them. Drill Hall meetings in magnitude and variety have grown amazingly during recent years; yet no one ever seems to look for Grapes, and would doubtless be surprised to find any there. Surely this ought not to be if the art is not declining.

I have recollections of gardeners who would have proudly exhibited their Grapes before the Fruit Committee, and been satisfied with the award it gave. No such feeling appears to exist in these days. If these defects are so apparent in the greatest centres of horticulture, what must it be at shows of lesser importance? But perhaps, and let us hope there are, shining lights in the Grape-growing world who as yet are only glimmering in a little local hemisphere. Like your correspondent, I claim to be by no means of a pessimistic turn of mind, yet when I compare the Grapes of to-day with those of not many years ago I agree with him that so far as this important branch is concerned gardening is decaying.—A Kentish Man.

Improving Vines.

The paper that first drew attention to the state of our Navy could certainly have caused no more astonishment than have "Traveller's" Notes on the above subject (page 170). We have been accustomed to read of the progress of gardening during the Victorian era, and of classes being set apart at some of our great shows to demonstrate the advance in horticulture, and then to find we are so far behind our forefathers in the cultivation of the king of fruits comes as a revelation. That "Traveller" was not struck with anything in the Grape classes, except it was an absence of finish in so many of the bunches, I have no doubt, but I feel that there are many beside myself who think that if the glass and money were forthcoming there are still men who can turn out noble bunches, and so uphold the reputation of British horticulturists.

"Traveller" has pointed out why Roses are not shown so well as formerly, but his inference cannot be applied to gardeners. Why is the high-class cultivator being crowded out? Why is the smart (with his tongue) up-to-date young man taking his place? Cannot employers afford to pay a good cultivator? This is the only reason I can assign for any decadence in gardening.

I will close this, my first contribution, by a few cultural notes. If the Grapes are unsatisfactory (and this is the time of year to judge), endeavour to ascertain the cause. If spurs or rods are too crowded cut the weaker out. If there is a doubt about the roots being in an unsatisfactory state lift them. What is the best compost to use, and how the border should be made would be a good text for a cultivator who has proved the material. We are not allowed turf, yet we have lifted most of our Vines. What we have used with the most satisfactory results some may like to know.

We get a good accumulation of rubbish, and this we burn, as described by Mr. Iggulden (page 115). We commenced the work of lifting in November, taking three Vines at a time. We removed all the soil from among the roots, and as this was thrown out the burnt earth was mixed with it, this frequently being red hot. This with mortar rubbish was freely used, and after all had been well mixed and stood, while the drainage was seen to, till in a condition suitable for potting, the soil was returned and trodden as firmly as possible until nearing the surface. The roots were then laid in and the soil pressed moderately firm about them. How much burnt material may safely and advantageously be used in making up a Vine border I cannot say, but I do think that if a great deal more were used with the turf that is so frequently recommended, and that put together firmly, we should improve our Grapes.

We may not get canes so quickly or stout, but what we have last longer and finish the crops better than those grown in decaying turves. The manure our Vines get is from earth closets, with liquid manure from the home farm. They are watered with weak liquid through the summer, and during wet weather, when the liquid is weakened by autumn rains, we throw it on as brought from the farm.—S. B. O.

[A very good "first contribution." We like to hear from gardeners who can describe clearly how they succeed under difficulties, and "S. B. O." may treat his pen to a little exercise again. Perhaps the "Traveller" had not had a good day among his clients, and sought solace in publicity.]

SIXTY YEARS' PROGRESS IN HORTICULTURE.

(*Concluded from page* 215).

FLOWERS.

I HAVE given precedence to fruits and vegetables because they form two of the staple foods of our country, and are considered necessities of life. But when I come to treat on plants and flowers that have been introduced or raised during her Majesty's reign, I confess I hardly know where to commence, and shall find it more difficult to stop. The old brick flues with which I have had some sad experience have been superseded by the clean, sweet, easily controlled hot-water systems. The tubular, the Trentham, or Cornish, and saddle boilers have taken the place of the brick furnaces, so that we have been able to nurse and bring to perfection the many choice exotics that have come to us from all parts of the globe.

One has only to look in at the cottage windows to see the difference in the window plants from those of olden days. One rarely sees the old Candle Cactus, the Onion plant, and the old red-veined Begonia sanguinea that used to be in nearly every cottage window in the country forty years ago. I do not wish to disparage these old plants. There was a charm about them that made them a part and parcel of the family. The owners were so much occupied in those days in the fields and otherwise that they had not time to attend to the more tender plants even if they were procurable. The old plants would bear to be left for a time without water or other attention, hence Cactuses and other succulents were largely grown to what they are now. Some of the old people would always have their Balsams for the summer months, sowing the seed on a given date in spring, growing the plant in an old teapot or basin, and top-dressing with tea leaves just before coming into flower. Now the cultivation of flowers is getting more understood, and the very great variety to hand is filtering through to the humblest cottager. The formation of cottage garden shows enables him to exhibit his produce, and encourages him to renewed energy for another year, giving him healthy occupation in his spare time, and beautifying and brightening his home.

Then, too, the greater facilities for travelling have enabled collectors to search for and quickly import many valuable additions to our stoves, greenhouses, and flower gardens during the past forty years. If we look at the choice exotics that are grown for the beauty of their foliage or flowers, or in the wonderful development of the orchidaceous family by introductions from their native clime or by the scientific hybridising by our own eminent men, or at the extraordinary transformation our flower gardens have undergone, or the types of florist flowers or the several occupants of the conservatories as they follow on in their successive seasons, we can get but a slight conception of the marvellous changes of the past sixty years.

True there were enthusiasts then, but their devotion was centred in a limited number of plants. Chief of the florists' flower was the Tulip, for which we hear and read of such fabulous prices being paid. It was part of my duty when a lad serving under a grand old florist, whose memory I shall ever revere, Mr. Adam Spary of Ventnor, to look after a collection of Tulips. We had the bizarres, byblœmens, and selfs planted on a particular date and taken up on a certain day. I had to unroll or roll up the calico covering that was over the wooden framework of the bed in which they grew at every outburst of sunshine after they began to show colour; and although not old enough then to enter into the spirit of the thing, in after years I could understand better the delight ovinced by the grand old florist when he saw a certain variety breaking eut into its natural colouring, or a seedling showing some great improvement on its parents. Auriculas, Polyanthuses, Carnations, and Pansies were the chief florists' flowers handled and exhibited by specialists at their various shows, which were held chiefly in the Midland and Northern counties. I must confess to a partiality for the florists' Auricula, having grown a collection and taken prizes at the National Auricula Society, that now holds two exhibitions yearly, one in London and one in the Midlands. Dahlias, Balsams, and Cockscombs also I should mention. Persian Ranunculus used to be grown and shown with the Tulip, and later Show Pelargoniums and Fuchsias were the chief plants in which the gardens in private establishments used to try to excel in those days. Camellias were in great force and highly appreciated; Humea elegans is another graceful flowering plant that was in much favour, and is still grown by many.

The mention of Zonal Pelargoniums revives the whole history of the bedding-out panic, of which I could write pages. In my younger days I used to follow dear old Donald Beaton in all his writings in the *Journal of Horticulture*, and when he hybridised and sent us out those beautiful Nosegays Stella, Amy Hogg, Helen Lindsay, Christine, and Trentham Rose, they gave a fillip to the bedding-out system that was just then getting a hold on the public taste. My early impressions of bedding-out plants are associated with Tom Thumb and Little David "Geraniums;" the variegated varieties Bijou and Brilliant, mixed with Cuphea platycentra, Alonsoa Warscewiczi, and Purple King Verbenas. Then came the golden variegated "Geraniums" Golden Chain, a rather weak grower; and later, Crystal Palace Gem, Flower of the Day, Flower of Spring, and British Flag, followed by Madame Vaucher, a good white and François Desbois, one of the first of the salmon-shaded varieties. Compare these with the wealth of very fine varieties that we have now, and realise, if you can, what we owe to earnest workers in hybridisation. The double Zonals caused a sensation when they made their appearance about thirty years ago. We are indebted to our continental friends for these, and I think Mons. Lemoine gave us the first one. About this time Mr. Peter Greive raised and sent out Mrs. Pollock, the first tricolor "Geranium," which became all the rage. Soon after we had Sunset, supposed to have been an improvement on the older variety; and many cultivators turned their attention to this class, and the trade did a brisk business, Messrs. Smith & Son, Dulwich, and Rollisson and Son, Tooting, two old firms, making a speciality of them. Messrs. Rollisson guarded them as securely as possible, and it was quite a favour to get a glimpse of their propagating house, or the show house wherein they were grown. I remember a bull dog being tied up near the houses to protect them during the night. Two fine varieties, Star of India and Moonstone, at a guinea each were being distributed at the time of one of my visits there about twenty-eight years ago.

Following these came the bronze Zonals, Mr. John Wills, gardener to Sir Philip Egerton, Oulton Park, making a hit in that direction. Beauty of Oulton and Black Douglas were two of his best in this section. He also raised a dwarf bedding variety with small golden foliage, named Robert Fish. Mr. Wills told me the story of how it received that name, which was something as follows:—When his friend Mr. Robert Fish, a well-known horticulturist, came to visit him and inspect his new seedlings, he told him that he would name either of them after himself if he would make his choice, thinking one of the many seedlings of the bronze section would be chosen, instead of which the choice fell on a dwarf distinct variety with plain yellow foliage. Years revealed the wisdom of his choice, as Robert Fish was well adapted for ribbon and carpet bedding, and was grown by thousands when some of the others were forgotten.

Plants with self-coloured foliage were in great demand about this time for ribbon and parterre bedding. Coleus Verschaffelti, Iresine Herbsti, and Perilla nankinensis with dark foliage, Centaurea candidissima and elegantissima of the light foliage being much sought after, and very widely grown. Carpet bedding followed, and then all kinds of dwarf plants with plain foliage were much used, the various Echeverias, Sempervivum, and other succulents harmonising well with the bright-coloured foliage of tho Alternantheras and other plants. Thence came the more general use of foliage plants, which developed into subtropical gardening, Mr. W. Robinson being a strong advocate of this, *versus* the bedding out or the parterre style. At the present time the prevailing fashion in the public parks and other gardens is a combination of all three. Fine-foliage and tall-flowering plants are utilised, to break the formality and add to the effect of the arrangement.

Begonias belong to the past twenty-five years of the reign. Who could have thought when Messrs. Veitch & Sons of Chelsea sent out Chelsoni and Veitchi, hybrids, I believe, from boliviensis and fuchsioides, that they were the forerunners of such excellent varieties as John Laing and others have produced?

Of Chrysanthemums I have not time to say much, not because I have no wish, but they have been talked about and written of so much lately, that it would be only repetition if I were to enter into particulars. They are, without doubt, one of the flowers of the reign, and the introduction of the Japanese has made them one of the most popular flowers of the day. English-raised varieties have superseded the continental ones to a large extent, and I am proud to say we are indebted to the Isle of Wight for some of them.

Many very beautiful flowering shrubs, hardy foliage plants, as well as tropical ones, creepers to adorn our houses, such as Ampelopsis Veitchi and the beautiful varieties of Clematis; flowering bulbous plants, including the splendid golden-rayed Lily of Japan, with many more, have all been introduced during the latter half of the period under notice, and have added to the attraction and adornment of our homes and gardens.

The Rose is our national emblem, and ought not to have had last place. The old Cabbage Rose, the Moss, the Provence, the Boursault, and Noisette varieties have all been hybridised and superseded by the Hybrid Perpetuals. The beautiful Tea scented varieties from which we have the Hybrid Teas, are grand improvements on the old varieties, and will ever keep up the regard and esteem for our national flower.—(*Paper read by* Mr. C. ORCHARD, *Bembridge, at the Ventnor Institute, on August 7th.*)

SECURING FRUIT.

A VERY proper and concise answer to Mr. W. J. Murphy (page 194) would be to ask him kindly to practise those directions given many times in this paper. To read his letter of appeal for guidance in fruit tree culture, while he himself gives the very reasons, I believe, for his trees' barrenness, is most disheartening to those who have written and taught so patiently and well. Mr. Murphy states not whether his trees are on walls or free in the open. By his own admission neither soil, varieties, nor management—which appears limited to pruning and insect destruction—are to blame. Without further aberration, the cause of the evil leads us to settle directly upon that "unfortunate spell of frost" which was not warded off. Two hundred years ago pomologists took little heed of their trees' roots, but were careful to protect the blossom often by laborious means. They had walls with projecting copes; used bass nets and draw curtains, and even troubled themselves when building fruit walls to insert tiles or flat pieces of wood between the bricks or stones at distances over the face of the wall. These protectors protruded 1½ or 2 inches, and sloped slightly downwards.

Such simple, yet laborious, contrivances saved blossoms from many degrees of frost. We do not trouble ourselves nowadays with such methods; no, we give our trees too little care. Destruction comes in spring by the condensed night vapours falling lightly on the exposed blooms, dewing them over, and under a clear sky the continued radiation, or process of

cooling, causes such coldness that the dew freezes, and a whole year's work may be blasted. These "frosts" fall perpendicularly, and thus we need only to thrust a dried Spruce or Yew bough below the coping, or have glass protectors sloping out a foot from the wall top, so as to shield all beneath it. It would be inconvenient for Mr. Murphy, perhaps, to have mats for his trees, but surely he might contrive to fix an overhanging ledge, or the means for securing boughs, canvas, or old sheets of any suitable material.

To protect standard or espalier trees, a framework, over which some light material can be stretched, is the only true and safe method ; the standard trees placed perpendicularly, a long pole through the middle part of the tree, and have others, plus covering, to be in readiness on emergency. Poles, or slender bars placed X fashion over the trellis, with a horizontal bar running in line with, and resting on, their small top angle, securing these from collapse, afford a frame for covering, and keep the material free from the blossom, which might be spoilt unless the protected cover be held off.

You cannot get your fruit without less trouble, unless you start and plant cordons along the edge of your walks, forming a series of arches with them by bending down the points. Splendid results have been obtained from this simple plan. Now as to watering. It is essential that the buds be "plumped up" before the season's vigour ceases. Water and mulch so as to secure stoutness in wood and bud, yet reckon to have the wood properly ripened. A dry autumn is a desideratum. Mr. W. J. Murphy had blossoms this year, therefore last year cannot be blamed much. Proper nourishment with protection this spring would have secured "fruits in their season." Read "H. D.'s" article on "Watering Wall Trees," page 139, August 12th. Have no rank roots to your trees ; let them be fibrous. Keep the branches well apart, and with spur-bearing trees attend to pinching ; thin-out young shoots early on other trees. Never allow insects or disease to harm your trees. Water, mulch, and protect when needed ; then and not till then, you will have done your duty.—J. H. D.

THE FUNGI OF THE WREKIN.

The Wrekin, which is denominated the oldest mountain in England, and which is such a conspicuous headland as seen from the railway running through Wellington in Shropshire, near which town it is situated, is a famous place for fungi, the woods which surround its base and sides literally teeming with them, especially during the months of September and October. Botanists and ordinary visitors alike who visit the famous Salopian hill in the course of their rambles around cannot fail to be impressed with what is well termed the mycological flora of the neighbourhood.

We all know now, or ought to at least, that in addition to the ordinary field Mushroom which finds such general favour, there are great numbers besides which afford capital eating. The woods around the Wrekin are in most seasons most prolific in the production, both specifically and numerically, of these interesting, and in many cases extremely curious, forms of vegetable life.

Many species of Polypori are to be found growing out of the trunks of the Larch and Pine trees and their roots, or on the patches where the wood has been burnt for charcoal, such as P. squamosus, P. rufescens, P. perennis, P. chionens, the beautiful P. frondosus, whilst in many places the edible Hydnum repandum abounds, with its awl shaped spines on its lower surface. The very curious H. gelantinosum has also been found at times in old saw pits and in similar places. The large red copper Agarie, Amanita muscaria, and A. phalloides are unfortunately rather common. They are both poisonous, hence it will be seen the selection of fungi is no easy matter for an amateur, who, if not sure of what he is gathering, had better inquire from one better versed in the knowledge than himself, and to avert unconscious disaster. Singular to say Amanita rubescens, another variety of the same species, is perfectly wholesome.

Flammella carbonaria, as might be inferred from its name, is found where there is charcoal. Trichiloma imbricatus, T. rutilans, T. saponaceus, and T. terrens are everywhere to be seen. Chitocyte giganteus, a favourite edible, grows in rings in many places with several other species of the same genus. Lactarius deliciosus is found mainly under Fir trees, and, as its name implies, is good eating. The Boleti are numerous. Amongst them B. luteus, B. flavus, B. edulis, B. elegans, B. luridus, and B. scaber, a pretty fair variety.

The edible Cantherellus cibarius is also met with in some spots, but is by no means common. Near the top amidst the moss we come across Hygrophorus Houghtoni (named after the Rev. W. Houghton, F.L.S., who has written much about the district of the Wrekin), the lovely golden yellow Peziza aurantiaca is also to be seen. The curious but nasty smelling Stinkhorn (Phallus impudicus) is rather common, whilst the equally curious but not so repellant in odour Cynophallus caninus, which is generally held to be a rare kind, grows in the grass amongst the Larch trees and the Oaks in the large fields bordering on the next side of the mountain.

Several other species of Hygrophori are also to be found in the same locality, amongst them H. coccineus, H. pratensis, H. psittacinus, H. conicus, H. calyptræformis, H. puniceus ; whilst in the adjoining woods we meet with H. corsus, with its strong goat-like odour, by no means pleasant. These woods are a rare hunting ground for the Mushroom hunter. It is impossible to enumerate a tithe of the species that are there to be found, but the above selection will serve to show that the woods of the Wrekin are full of rich treasures for the botanist and others.—Wm. Norman Brown.

KALOSANTHES COCCINEA.

Taking into consideration all the good qualities possessed by this beautiful, sweet-scented greenhouse plant, it is surprising that it is not more frequently met with in a condition creditable to the cultivator. Under good cultivation its habit is close and compact, producing a profusion of bright flowers which contrast well with the deep green foliage. Although it is of too stiff a character to be useful for cutting (an indispensable quality with many), still, when it is grouped with other plants in the conservatory, or associated with Ferns and foliage plants for house decoration, it is generally admired.

The ease with which it is propagated, the short time required to grow it to a serviceable size, and its comparative immunity from the attacks of insects, ought to commend it to everyone.

I will give a few hints on the culture of this beautiful old-fashioned plant, and first as to propagation. This is too often recommended to be done in August. It roots freely at any season, but I think the best time is from the middle of March to the middle of May, or as soon as convenient after the bloom is visible in the tips of the shoots. Select shoots that have failed to bloom, and take them off close to the old wood. Trim a few of the bottom leaves off and insert them singly into thumb pots, or five in a large 60. Use a mixture of fibry loam and peat, or loam and leaf soil, with a good dash of sharp sand. Water well, and place in a warm moist atmosphere for about three weeks, when they will be rooted sufficiently to be removed to cooler quarters—a shelf near the glass in a greenhouse, where they may remain till they fill their pots with roots.

About the beginning of June the young plants should be shifted into a size larger pots, the single plants into 4½-inch, and those with five cuttings into 5-inch pots, using the same compost, but in a rougher state, and with less sand in it. Drain the pots well, and place a little moss over the crocks to keep them clear of soil. The plants may then be placed in a close frame till they have well rooted into the fresh soil, then gradually harden. After this our practice is to plunge them out in coal ashes, giving them exactly the same treatment as winter-flowering Pelargoniums. Those, however, who have a very heavy rainfall to contend with should have them in frames, or a sash placed over them to throw off the heavy showers, exposing fully in dry weather. As soon as required each plant should have a small stick to it, to keep it upright and prevent its being broken.

Most writers on the Kalosanthes recommend the young shoots to be pinched. I have proved this to be quite unnecessary ; in fact, it tends to make a rather stiff plant, more formal than it would be if left to its natural growth. Allow the plants that have been potted singly to grow without stopping. Those intended for larger plants, the four plants round the outside of the pot, may be stopped early in July, but train the centre plant to a stick without stopping. They will thus produce free, natural pyramids, clothed with flowers to the edge of the pots.

Excepting that they should be carefully watered, but little attention is necessary till they are housed for the winter at the end of September or beginning of October. They should then be placed on shelves near the glass, where they will be cool and have plenty of air. They will continue growing, and should by no means be stinted for water, as is advised by some writers. Of course, as the days shorten less water is required as a natural consequence, but this does not mean that the soil is to be allowed to get dry, for the roots are very active during the autumn months, and should be encouraged. Soon after the turn of the year—say the middle of January—the plants should be shifted into their flowering pots. The single plants may be potted into 5 or 6-inch pots, and the others into 7 or 8-inch. The plants make rapid progress during February and March. They should be regularly attended to with water, and when the pots are well filled with roots, should be assisted with a little weak liquid manure twice a week.

By the end of the latter month the plants will be showing blooms, when they must be staked and tied. Stakes should be used as sparingly as possible. One or two to each plant is generally sufficient, the other shoots being looped together for support, something after the style of tying Phœnocomas and hardwooded Heaths for exhibition. Keep the plants as close to the glass as possible till they come into bloom. They will be cooler and require less labour in watering if turned out into frames or cold pits early in May, from which they can be transferred to the conservatory as they come into bloom.

Old plants are generally considered useless as far as blooming the following season is concerned. One plant last year bloomed so freely that we had a difficulty in getting sufficient for this year's stock. I was thus induced to save a few old plants to furnish cuttings. These were allowed to become dry at the roots, cut hard back, and after giving the wounds time to heal to prevent bleeding were placed in a brisk heat. They were afterwards placed outdoors with the others and had the same treatment, except that they were shifted when they were housed for the winter into pots a size larger. These have furnished us with abundance of cuttings, and, more than we expected, a fair sprinkling of bloom.

The Kalosanthes is hardier than some of our bedding plants. Some of the above-mentioned plants were outdoors in the open till the 12th of November, and endured 3° of frost without showing the least signs of having been injured. It is, in fact, one of those plants that may very easily be "killed with kindness."

Market growers, who require flowering plants as quickly as possible, do not follow this mode of culture in every respect. Instead of rooting

the cuttings in small pots, and shifting them into larger ones as required, they insert them in the pots in which they are intended to bloom, and thus save the time necessary in repotting. The majority of the plants sent to market are only one year old.—G.

BEGONIAS AT YEOVIL.

"CAN you direct me to Mr. Davis's nursery?" I asked of a Yeovil rustic the other day, when a little uncertain as to which turning to take. "Do 'ee mean the ''Gonia' man, zur?" said he. "Yes," I replied. "Then," said my informant, "go down there, and jest up the hill, an' you'll see his place, an' they be purty vlowers, too, zur, he grows. Why zome be as big as zaacers, the zingles and ther dooble be loike girt cups opside doon, an' sich 'coolers.'" "Yes," I remarked, "I have seen them at the great shows, and now I am going to see them growing." I thanked my friend, and wended my way to the nursery.

It is Mr. Davis's fortune not only to be an inhabitant of a great country business town, but also to have his nursery situated beside a fine and much-frequented highway, so that large numbers of persons are attracted to the Begonia show, under glass and outside, so liberally furnished, and which can be seen from the road, or may be more closely seen by visiting the place, as it is freely open to inspection by all persons.

I was fortunate enough to find this energetic and highly intelligent Somersetshire florist at home, and in his company examined the huge stock of Begonias growing. A cursory inspection reveals the fact, absolutely undoubted, that the quality of the Yeovil strains, whether single or double, is equal in every respect to the best of the metropolitan or other provincial strains, if not in some respects better. This is due to the fact that Mr. Davis is a Begonia enthusiast, does his own fertilisation, intercrossing, and selecting; hence he not only knows what he wants, but works exactly to that end, and results amply justify that personal action; for whilst his strains have in colour a marvellous variety, the quality is indeed splendid.

With such superior excellence no wonder the title of "Yeovil" Begonias has become of world-wide knowledge, for Mr. Davis has customers all the world over, and the good Somerset town has gained through our florist friend some acceptable notoriety also. At this late period of the summer, although there were thousands of fine plants blooming in the houses, yet the chief centre of interest was found in the fine seedlings blooming in beds outdoors. The site of the nursery is on the north-eastern slope of a hill, and fully exposed in spring to very cold winds, that render growth rather late; and still farther, the exeessive dryness of the soil so long in the summer did not help growth either. But this now is fine indeed, almost luxuriant. None the less, it is not aimed to make the soil too rich. The same sites have to be utilised year after year, and have worked into them leaf soil or well-decayed manure; but still the object is to produce not the biggest, but the firmest and most perfectly matured tubers for storing in the winter and ordinary sale. Such tubers not only, if needed, give the best cuttings that endure, but also produce by far the best flowering plants.

Then ample evidence of the admirable capacity of the Begonia to withstand storms and bloom under adverse weather conditions, for but three days previous to my visit there had passed over the locality a fierce wind and rain storm, generally to fragile flowers and plants most destructive, but the Begonias seemed not only unharmed, but bore few evidences of injury. They were in flower and foliage superbly fresh and beautiful. It is difficult to say whether singles or doubles exhibit the greatest variety of colour. I noted in both white, lemon, yellow, orange, apricot, pink, carmine, cerise, salmon, scarlet, magenta, and crimson; indeed there seems to be every possible self hue found except the blue shades, and whilst Begonia growers would like to obtain these, I hardly share that wish. Then there are even of these mentioned so many diverse tints, and of edged, or flushed, or shaded flowers, others in great abundance. Without doubt the Begonia has given to us shades and combinations in colour no other flowers produce.

Whilst in the singles we see in all directions thick petals of fine rounded form associated with great size, we see in the doubles much departure from those crowded-petalled Hollyhock-like masses, more of the broad flat shell petal of the Camellia and Rose. To obtain these Mr. Davis has worked specially, realising that they present features that are so much to be admired. Pretty crumpled edges also are here and there reminding one of goffered frills, as once such popular wear, and this break will be worked upon doubtless with good results. Of course there are Picotee edged flowers, and some show broad margins of colour on white that lead to the impression a fine-margined strain may be ultimately produced.

It is worthy of note that single seedlings not only come very true to variety, but they never seem to diverge from the single character, except specially fertilised to that end. Doubles, on the other hand, do show in seedlings a small percentage of singles, as all who purchase seed know. Those who, rather than bother with uncertain seedlings, prefer to purchase a dozen or more of selected doubles or singles as now marked in the seed beds, not only get all of different colours, but all are true to form as desired. Seedling tubers the following year make fine pot plants, and once obtained may be grown on indefinitely. Mr. Davis has worked hard also to secure the best possible stocks of small-flowered, erect-blooming varieties of rich or striking colours for bedding, and these are so employed, thinly planted on some neutral coloured carpet, are singularly beautiful.—A. D.

Notes & Gleanings

WEATHER IN LONDON.—Though we have had two or three fine days during the past week a considerable amount of rain has fallen. This was particularly the case on Sunday, when it rained nearly the whole of the day. On Tuesday, again, there were heavy showers. Wednesday was fine.

—— PHOTOGRAPHS.—We inadvertently omitted to state that the excellent photographs sent to us last week of the Shrewsbury medals and presentation epergne were taken by Mr. W. W. Naunton, one of the Secretaries of the Shropshire Horticultural Society, who is an expert in such work. The photographs in the preceding issue were by Mr. Bartlett, Shrewsbury.

—— GARDENING APPOINTMENTS.—Mr. Richard Chubb has been appointed head gardener at Farmingwoods Hall, Thrapston, Northants. Mr. William Coomber, who had to relinquish the charge of Lilford Hall Gardens through the death of his employer, the late Lord Lilford, has been appointed gardener to Lord Grey de Wilton at Houghton Hall, Swaffham, Norfolk. Mr. David Johnston, for the past four years general foreman at Strathfieldsaye, has been appointed head gardener to H.R.H. Prince Hatzfeldt at Draycot Cerne, Chippenham, Wiltshire. Mr. G. Gurney, late head gardener to Mrs. Powell, Maesgwynne, Carmarthenshire, as head gardener to Viscount Raincliffe, Blankney Hall, Lincoln.

—— LILIUM AURATUM AT LOGAN HOUSE, WIGTONSHIRE.—Mrs. McDowall of Logan is an enthusiastic cultivator of Oriental Lilies. She is specially successful with Lilium auratum, which attains to an unusual height and strength. One of the finest specimens of this noble Lily I have ever seen is 7 feet 8 inches high, while the stem is fully 5 inches in circumference. The number of flowers, twenty-one, is by no means very unusual, but they are, on the other hand, of more than average size, being in most instances nearly 12 inches across. L. auratum rubro-vittatum is unfortunately not largely grown, as I am sure it would be found highly ornamental. I do not find it, however, so vigorous as its contemporaries, nor is it so floriferous.—DAVID R. WILLIAMSON.

—— GATHERING PERFUME FROM LIVING PLANTS.—It is said that a method of gathering the scent of flowers as the plant is growing has been discovered by a Captain Smee. He takes a glass funnel, and heats the thin end over a spirit lamp. He then draws out the stem to a fine point. This accomplished, the funnel is filled with ice and placed on a retort stand, the pointed end being placed in a small glass bottle, without touching it. After this, the stand and the funnel are placed in a greenhouse, among the flowers whose odours it is desired to collect. Gradually the vapour rises from the flowers, and in meeting the colder surface of the funnel condenses into drops on the outside of the glass. From the point of condensation it trickles down until it drops into the bottle. In a surprisingly short time a large amount of perfume is collected, and it is claimed that 90 per cent. of the contents of the bottle is perfume; the rest is water. Strange to say, this essence of the flower needs to be adulterated with spirits of wine, otherwise it would become sour and useless.

—— HERO OF LOCKINGE MELON.—Taking all points into consideration I question if this grand variety has yet been surpassed. The colour and netting are perfect when the fruit is well grown; the flavour too, is quite first rate, and I know of no variety which produces a heavier fruit in proportion to its size. At the present time I have a small house filled with plants of this well known Hero. The majority of the fruits have just completed the netting process, and a very pretty lot they are, none of them being large, but all must be deep fleshed, for they are heavy and solid, no hollow sound being given out when the fruit is tapped with the knuckles. They have been grown entirely in a rather light loam, weak liquid manure being occasionally given. Melons growing in a liberally manured compost often produced very large specimens, but as a rule they lack depth of flesh, and do not satisfy a critical judge, who tests them by trying their weight. And it is seldom, indeed, that these large fruits bear favourable comparison with smaller ones in point of flavour. One does not often meet with the true form of Hero of Lockinge now, for when more than one variety is grown in a house it is almost impossible to obtain seed true to name.—D. W.

—— Bulbs for the London Parks.—We are informed that for the ninth time Messrs. J. Carter & Co., High Holborn, have received the order to supply the whole of the bulbs required for the Royal Parks of London for next season's bloom. The firm has also again received a similar favour from the London County Council for the parks, gardens, and open spaces under its control.

—— Abstract of Climatological Observations at Driffield.—Mean temperature at 9 A.M. (corrected), 63·35°. Wet bulb, 58·79°. Mean maximum, 70·51° ; mean minimum, 50·27°. Highest, 81·2° on 5th ; lowest, 40·2° on 3rd. Mean of maxima and minima, 60·39°. Mean radiation temperature on grass, 44·71° ; lowest, 34° on 13th. Rainfall, 3·69 inches. Number of rainy days sixteen. Greatest amount on one day, 1·18 inch on 26th.—W. E. Lovel, *Observer, York Road, Driffield.*

—— August Weather at Worksop. — Mean temperature, 61·5°. Maximum in the screen 89·1°, on the 5th ; minimum in the screen 41·4°, on the 2nd ; minimum on the grass 35·2 , on the 2nd. Sunshine 201 hours, or 45 per cent. of the possible duration. Rainfall, 2·16 inches. Rain fell on nineteen days. Maximum fall, 0·61 on the 30th. Rainfall since January 1st, 15·52 inches. A warm month, with some very hot days in the first week ; maximum the highest since 1876 ; the latter part showery.—J. Mallender.

—— Weather in South Wales.—The following is a summary of the weather here for the past month :—Total rainfall 7·66 inches. Maximum 1 inch on the 7th. Number of days on which rain fell, twenty-two. Rain fell on each of the last sixteen days, with very little sunshine for the whole period. Average maximum temperature 71°, with a maximum of 102° on the 2nd. Average minimum 49°, with a minimum of 42° on the 24th. The prevailing wind for the month was S. and S.W. There were seven sunless days. A very hot sunny week at the commencement of the month, since which there have been very strong, and in most cases cold winds ; a heavy thunderstorm and hail on the 31st.—Wm. Mabbott, *Dowlais.*

—— The Weather Last Month.—August was very wet after the 17th, with frequent thunderstorms, and was also remarkable for the large amount of sunshine. The wind was in a southerly direction twenty days. The total rainfall was 4·51 inches ; this fell on nineteen days, and is 1·85 inch above the average for the month. The greatest daily fall was 1·10 inch on the 30th. Barometer (corrected and reduced) : highest, 30·250 inches on the 3rd at 9 A.M.; lowest, 29·439 inches on the 21st at 9 P.M. Thermometers : highest in the shade, 88° on the 5th ; lowest, 44° on the 26th ; mean of daily maxima, 70·93° ; mean of daily minima, 52·38°. Mean temperature of the month, 61·65° ; lowest on the grass, 41° on the 26th ; highest in the sun, 144° on the 4th. Mean of the earth at 3 feet, 60·45°. Total sunshine, 233 hours 10 minutes. There were no sunless days this month.—W. H. Divers, *Belvoir Castle Gardens, Grantham.*

—— Starch from Sweet Potatoes.—Although it has long been known that the Sweet Potato contains starch in considerable quantities, the question whether it can be made a profitable source for the manufacture of starch on a commercial scale has only recently been raised. Very interesting, therefore, is a bulletin from the South Carolina Agricultural Experiment Station at Clemson College, from which it appears that at least 22 per cent. of starch can be counted upon in most varieties of the Sweet Potato, while in some kinds the product ranges still higher. Counting the yield of Sweet Potatoes at from 200 to 300 bushels to the acre in South Carolina, which is moderate, since 500 bushels to the acre have occasionally been accomplished, it appears that the amount of starch yielded by an acre of Sweet Potatoes is much greater than the amount yielded by Wheat at twenty bushels to the acre. That is, an acre of Sweet Potatoes will yield four times as much starch as an acre of Wheat. The Sweet Potato even has, says a transatlantic contemporary, the advantage over the Irish Potato in this regard in the Southern States. Of course, this does not establish the fact that the Sweet Potato can be profitably raised as a starch producer. In the first place, a more thorough test of the quality of the starch and its fitness for sizing will have to be determined. Again, the value of the by-products is much smaller than the value of the by-products in the manufacture of starch from corn. Besides this, much must be learned about the cost of producing the Sweet Potato, the changes which may take place in storing it and the cost of manufacturing the starch. Nevertheless, the bulletin is an extremely interesting one, and it is full of suggestion as to the proper soils and fertilisers which the crop demands for its best development.

—— Sussex Rainfall in August.—The total rainfall at Hayward's Heath for the past month was 3·76 inches, being 1·48 inch above the average. The heaviest fall was 0·77 inch on the 8th. Rain fell on sixteen days. The maximum temperature was 88° on the 5th, the highest of the season ; the minimum, 46° on the 13th. Mean maximum, 75·05° ; mean minimum, 53·02°. Mean temperature, 64·03°, which is 3·49° above the average. It rained more or less every day since the 17th of the month. September 1st was extremely wet and stormy.—R. I.

—— Nymphæa lilacina. - This hybrid Water Lily of Marliac, which was imported a year or two ago, does not seem to have received the attention to which it is entitled, perhaps because it is still rarely seen in cultivation. Cut flowers, especially if a trifle old, as seen at exhibitions, give one a rather poor idea of the beauties of Water Lilies, which are seen at their best only in some quiet pool with a foil of crystal water. Unlike the well-known Nymphæa Laydekeri, which it resembles in colour, N. lilacina may be increased by division. Its leaves are similar to the former variety, but the petals are wider and more numerous, and it has a larger array of golden stamens. It is difficult to convey an idea of the exact differences between the two hybrids without an illustration which would show them clearly. As the flower of N. lilacina is also larger, and as bright in colour and apparently as free-flowering, it seems to me that, on the whole, it is an improvement on the older variety. N. Laydekeri, however, is a good reliable variety, even if after five years the old plant is no larger than at first planting, and has never shown a sign of increase. —J. N. Gerard (in "Garden and Forest.")

—— Railway Platform Gardening. — The flower gardens which skirt the various platforms on the Midland Railway are just now clothed in their gayest summer attire. In several places along the line there are marvellous displays of flowers ; in many instances the stationmasters have made elaborate arrangements ; the slopes and terraces are masses of floral beauty, and are highly creditable to the unwearied efforts of the cultivators. The flower-garden arrangements on the platforms at Matlock Bath and Belper were beautiful. It must be understood that these are busy stations. Beginning with the former, what is now the flower garden was formerly a rough, sloping bank, but now formed into a series of terraces one above the other. The lower terrace is raised above the ground level by a row of rough Derbyshire stones, specially adapted for the purpose, the interstices being filled in with masses of Arabis albida, which in the spring must be sheets of pure white flowers. The space beyond the Arabis was devoted to Nasturtiums, a dwarf and compact variety, and extremely floriferous. The next terrace is laid out in grass, with sixteen beds cut in the turf, and all kept exceedingly neat and in perfect order. The upper or third terrace was also formed with large rock stones, over which streamed in graceful festoons many coloured Nasturtiums, suspended in graceful luxuriance. Behind the Nasturtiums we noticed a bed of dwarf Roses. These had done duty "in the time of Roses," and promised a fine autumnal bloom. At Belper we have a series of terraces, but differently arranged to those at Matlock Bath. Beginning at the bottom the earth is held in position by large stones in every respect suitable for the purpose ; these are draped with large masses of Arabis albida, commonly called Snow on the Mountain, a useful spring-blooming plant, but would be still more effective if it were mixed with the blue Aubrietia—Aubrietia deltoidea. The terrace is divided into a number of flower beds, which have for dividing lines rock stones, which are in harmony with all the other arrangements. The beds along the terrace are filled in with a great diversity of plants, all beautiful and effective. These included bedding Pansies, Petunias, Stocks, Asters, and white and blue Lobelia. In the centre of the terrace there is a design formed of Thrift (Armeria vulgaris) in large letters—Success to our Town. This was very striking, and would be more especially when the Armeria was in full bloom. The next terrace displayed a considerable amount of thought and ingenuity. It was broader in the centre, and tapered a little towards each end. Besides the Stocks, Asters, Petunias, Pinks, and Nasturtiums, which were all masses of glowing beauty, there were several designs in limestone. In the centre there was the name of the town in large letters formed with limestone. Above this a mass of Stonecrop. Higher up was the Queen's crown, in memory of her Majesty's Diamond Jubilee, and also passing through the town on her way to Sheffield. Many shrubs have been planted on the embankment near the station, which in a few years will give it the appearance of a large pleasure garden. It must be highly gratifying to the company to find their stations and platforms clothed with so much richness and beauty ; while the stationmasters must be amply rewarded in knowing their labours are so thoroughly enjoyed by an appreciative public.—R. W. L. (in "Derby Reporter.")

—— JOURNAL OF THE ROYAL HORTICULTURAL SOCIETY.—The volume of this publication which has just come to hand is an extremely interesting one, and contains much valuable information. It opens with a list of the Victoria medallists, and comprises in addition valuable papers on Microscopic Gardening, by Professor Marshall Ward; Bud Transference, and its Effects on Fruit, by the Rev. Gordon Salmon; Artificial Manures, and their Bearing upon Horticultural Practice, by Mr. J. J. Willis; Winter and Spring Bedding in Flower Gardens, by Mr. Alexander Dean; Diseases of Plants, by Mr. George Massee; Physiology of Pitcher Plants, by Professor Sydney H. Vines; and Storing and Preserving of Fruit, by Mr. Joseph Cheal, beside other information of considerable value. The price to non-Fellows of the Royal Horticultural Society is 5s., and it may be obtained from the offices of the R.H.S., 117, Victoria Street, Westminster, S.W.

—— MOSS ROSE LEGEND.—There is a very pretty German tradition, not generally known, which accounts in the following manner for the existence of the Moss Rose. The legend is to the effect that once upon a time an angel, having a mission of love to suffering humanity, came down on earth. He was much grieved at all the sin and misery he saw, and at all the evil things he heard. Being tired, he sought a place wherein to rest, but as it fared with his Master, so it fared with him—there was no room for him, and no one would give him shelter. At last he lay down under the shade of a Rose, and slept till the rising sun awoke him. Before winging his flight heavenward he addressed the Rose, and said that as it had given him that shelter which man denied, it should receive an endearing token of his power and love. And so, leaf by leaf, and twig by twig, the soft green moss grew around the stem, and there it is, to-day, a cradle in which the new-born Rose may lie, a proof, as the angel said, of God's power and love.

—— ISLE OF WIGHT.—The monthly meeting of the Isle of Wight Horticultural Improvement Association was held at Newport on Saturday last. Dr. J. Groves, B.A., J.P., presided over a large attendance of members. Mr. J. Merritt, gardener to H.R.H. Princess Beatrice, read a thoroughly practical paper on the "Cultivation of Violets," which was highly appreciated. It was resolved to have an excursion to Swanmore Park during the month. It was also decided not to have a fruit exhibition this year. Messrs. J. Cheal & Sons, Crawley, offered the Association a championship trophy if they had an exhibition next year. The Association certificates for cultural merit were presented to Messrs. Sheath, Goble, Jacobs, Richards, Kine, Matthews, Went, Lipscombe, Geddes, and Philpot for their meritorious exhibits at the various Island shows held during the summer. The tables contained some excellent productions. Cultural certificates were awarded Mr. G. Williams for a stand of Cactus Dahlias and two dishes of Plums, Victoria and Bon Bouche; Mr. W. Matthews for Dahlias, and Mr. C. Martin for seedling Gloxinias and Begonias. Mr. C. Martin also staged a collection of Melons, a seedling, a cross between Royal Favourite and Blenheim Orange, a fine dish of Brussels Sprouts, and a collection of Nectarine Peach. Mr. J. Barkham staged a fine Melon of Sutton's A1, weighing about 6 lbs. Mr. J. Cheal had a fine collection of seedling Cactus Dahlias. Mr. Merritt staged fine plants of Violets Princess Beatrice and Princess of Wales. Eleven new members were elected.

—— WOLVERHAMPTON GARDENERS' CLUB.—The annual outing of the above Club took place on August 26th, when forty-four members and friends visited Chester and Eaton Hall Gardens. The party left Wolverhampton at 7.40 A.M. in two saloons of the L. and N.W. Railway, arriving at Chester about ten. They were met at Chester by Mr. A. Dickson of Messrs. Dicksons', who conducted the party to the nurseries. A tour was then made of the various parts of the home nurseries, and after inspecting the houses of Tea Roses, Vines in pots, Ferns, stove plants, Palms in pots, they returned to Chester well pleased with what they had seen. After luncheon at the Commercial Hotel the toasts of the Queen and "Success to the Club" were proposed by Mr. A. Dickson, who presided; the Chairman of the Club, Mr. J. F. Simpson, responding. A hearty vote of thanks to Messrs. Dickson was then proposed by Mr. G. A. Bishop, seconded by Mr. Ambrose. The party then went by steamer up the Dee to Eaton Hall Gardens. In the unavoidable absence of Mr. Barnes, the head gardener, the party were shown round by Mr. Simmonds, the foreman of the plant department. The collection of plants, including the famous Carnations, also different fruit houses, were all admired by the visitors. After passing through parts of the pleasure grounds a return was made to Chester by the steamer, and the homeward journey commenced at eight. The Club is indebted to some of the Vice-Presidents who generously contributed towards the expenses of the outing.

—— NEW PEAS.—I inquired of a large seed grower recently, who has no special Peas, but grows a large collection every year, what varieties amongst new ones had proved to be best with him, and he at once said, "I have found none better than the Gladstone." That variety was so good on the dry porous soil at Chiswick two years ago that it received an award of merit. It is 3 feet in height, a fine cropper, and very green. The 3 feet Peas seen this season not yet widely known, that have also shown fine form, are Sutton's Peerless, Carter's Seedling, and Johnson's Magnificent. Of course in Peas of this habit there must of necessity be much sameness, and it is hard to excel the present best. That we have wonderfully good forms there can be no doubt. It will be difficult to raise others that are superior to them.—A. D.

—— COMPLETION OF THE FLORA OF BRITISH INDIA.—The "Kew Bulletin" says, "With the exception of a general index, now almost ready for the press, this great work has been brought to a conclusion by the issue of the 22nd part, containing the remainder of the Grasses. Sir Joseph Hooker will receive the congratulations of all botanists on the completion of a task to which he has devoted the greater part of the last quarter of a century, to say nothing of previous years of travel and preliminary labour. It would not be too much to say that it has occupied the best part of fifty years of his life, as he left England for India in 1847. The entire work will consist of seven octavo volumes, averaging 775 pages each, including the general index of about 42,000 names. The Grasses alone number 850 species, belonging to 150 genera, and, as has been mentioned before, the synonymy is perhaps more copious and involved than that of any other family. Owing to the wide distribution of most of the genera and many of the species of Grasses, the volume treating of them has a general as well as a special value."

—— SAND-BINDING GRASS.—The Marram Grass (Psamma arenaria), the seed of which was first introduced into the colony of Victoria by the Government Botanist, Baron von Müeller, in 1833, has been proved to be the most effective sand stay ever planted. Practical evidence can be seen of its value in the miles of sandhills now reclaimed by the Marram plantations, sown under the direction of Mr. S. Avery, the park ranger. So complete has been the reclamation of the lands that, where a few years ago not a sign of vegetation was to be seen, there now exists a succulent Grass, eagerly devoured by cattle, and growing to a height of 4 feet. Marram Grass is practically indestructible—burning, cutting, or eating off only makes it thrive—whilst in exposed shifting sand it propagates as surely as in the most sheltered position. The following directions how to plant Marram Grass have been prepared by the park ranger: The Grass to be planted in rows at a distance of 6 feet apart, the space between the plants to be at least 2 feet. The depth to which each plant is put into the sand depends on the nature of the sand. If in sand not likely to drift for two or three months, 9 inches will be deep enough; but in very loose and shifting sand the Grass should be placed from 12 inches to 15 inches deep. A "plant" consists of as much Grass as a man can conveniently hold in his hand.

RUDBECKIA LACINIATA, GOLDEN GLOW.

IT is a stock complaint with many of us that we have too many yellow composites in autumn, and that those we have too much resemble each other. This leads us to view with some distrust the encomiums passed upon new introductions, a distrust too often founded upon past disappointments with so-called distinct novelties. A double Rudbeckia is, however, such a *rara avis* that it is little wonder that many have been persuaded to secure the above variety. The distrust already alluded to was strengthened by the inspection of flowers kindly forwarded last year for examination. These, I fear, were hardly satisfactory to me, and I determined to wait until another season before purchasing Golden Glow.

The award of merit recently made by the Floral Committee of the Royal Horticultural Society is, however, to be taken as a sign that there is considerable value in the variety, even although it has not given general satisfaction in a number of gardens this year. The Floral Committee make remarkably few errors in appraising the worth of flowers, and in this case I am compelled by the view of a plant in flower to add my humble testimony in favour of the award. This plant was in bloom a few days ago in the garden of Mrs. Maxwell-Witham of Kirkconnell, where herbaceous plants are very largely grown.

If this Rudbeckia has a fault it is that of its tall stature, but the appearance of the elegant, well-coloured double yellow flowers was such as to compel admiration, and now I shall not delay adding this variety to my collection of flowers. It is possible that Rudbeckia Golden Glow haas had too dry a position in some gardens this year, and that this may have had something to do with the poor quality of the flowers. We call the Rudbeckias "Cone Flowers," but this variety looks quite unlike the popular name with its double flowers with informal and reflexed florets.—S. A.

Lælio-Cattleya Digbyana Trianæ.

In the spring of this year one of the most beautiful bigeneric hybrids that has ever been seen was shown at the Drill Hall by Messrs. J. Veitch & Sons, Ltd., Chelsea. In general appearance and in attractiveness it much resembles L.-C. Digbyana Mossiæ that emanated from the same source about eight years ago, and which created quite a furore when it was exhibited at the Drill Hall. There is no need for us to say how closely it has followed Lælia (Brassavola) Digbyana, for that may be seen by glancing at the woodcut (fig. 34). Both parents are specified in the name that has been given to it. There were several fine Orchids shown on the same date, but none of them approached the one under notice for chaste beauty. The lip was unquestionably the finest feature of the flower, and was superbly lovely. It was of great breadth, and magnificent fringing with rose purple. Within the frilling the colour was yellow, extending to the throat, at the base of which were some chocolate veins. Both the sepals and petals were delicate purplish rose, but while the sepals were only about an inch wide the waving petals were upwards of 2 inches. The Orchid Committee of the Royal Horticultural Society adjudged a first-class certificate. The plant was subsequently purchased by Sir Frederick Wigan, Clare Lawn, East Sheen, and is now there in the charge of Mr. W. H. Young.

Orchid Specimens.

There can be no doubt that large specimen Orchids are in a measure old-fashioned, and present-day growers think far more of a puny bit of some Rose or unique Cypripedium than they would do of one of the grand old specimen Saccolabiums or Vandas that at one time graced our collections and exhibition tents. It is a pity in many ways that it is so, and for one reason especially that must soon strike anyone in the habit of visiting many large trade or private collections. That is the fact that wherever you go you see in place after place the same stamp of plants, saleroom-sized plants one might almost call them.

We expect this kind of thing at a nursery as a matter of course, as when a large old plant comes into a nurseryman's hands in nine cases out of ten it is cut up for propagating purposes. But perhaps the principal reason for the change will be found in the modern style of building Orchid houses. In place of the lofty spacious houses once in vogue we have narrow low span-roofed structures, and excellent they are for most purposes. For all dwarf growing Alpine Orchids, such as Masdevallias, cool Oncidiums, many Odontoglossums, and others, the 10 or 12-feet houses, with a centre walk and side stages, leave nothing to be desired.

Large plants of a grosser habit of growth must have more room for their full development. They must not be cramped, with their heads about 6 inches away from the glass, and other plants hustling them on either side. In such places they can never be satisfactory, no matter how carefully their wants are attended to in other ways. There is something, too, in the atmosphere of these small houses that does not suit large plants; the temperature is not so steady, and moisture cannot be so regularly maintained.

In many places where these large plants are grown there are large successional vineries where they may be placed during the summer months, at any rate with no detriment to the Vines, and a great deal of benefit both to them and the plants left behind in the Orchid house. The one would be getting the proper atmosphere it needs, the other would be better for the additional room; and in spite of all prejudiced fruit growers may say to the contrary, many beautiful Orchids may be grown and capital crops of Grapes finished in the same house. It has been done time after time, and with a little care and judgment in arranging, and judicious after treatment, there need be not the least fear of injuring the Vines in any way.

Where successional vineries exist there is even greater facility, as the plants may, by being started with the earlier Vines and kept growing with the later ones, have a longer season of growth—an advantage for many species. Take the long-bulbed, erect-growing Dendrobium mosehatum as an instance, or even D. Dalhousianum. Both these must have a long season of growth and be thoroughly ripened afterwards, and I know of no better place for them than a large spacious vinery. As long as the foliage is on the Vines it provides enough shade for them, and afterwards, when the fruit has been cut and the laterals half pruned, the sun reaches the plants and insures the consolidation of the stems.

In early spring, when the Vines are started, considerable attention has to be paid to early morning ventilation, and here again we suit the Orchid admirably, for if there is one thing more than another that militates against the successful cultivation of these lovely plants it is the close stuffy atmosphere they are often exposed to. Let anyone, then, who has those large old specimens crowded in their Orchid houses and stoves give them a chance to recoup their vigour in any of the class of houses indicated, and if they have not previously seen them in such position the rate of progress they make will be a revelation to them.

Some of the finest Aërides I ever met with were growing in a large conservatory, kept at an intermediate temperature, to accommodate a large plant of Stephanotis that grew on the roof, and to maintain in health a collection of large Kentias. A. suavissimum was in a basket over 2 feet across, and carrying eleven beautiful spikes; and the Fox-brush Aërides, A. Fieldingi, was equally satisfactory. I am sure I may say that such plants would elicit unstinted praise from those who are loudest now in deprecating—and rightly—the lanky starvelings that one often sees exhibited as specimen Orchids.

Such plants must be associated with Ferns and other foliage plants to look even passable, but a well-grown distichous-leaved or pseudobulbous Orchid requires no dressing. The quaint forms of growth of the latter, and the noble contour of the foliage of the former, are beautiful in themselves, and show in many cases how carefully considered culture assists Nature. Perhaps the day for these is gone. If so, more's the pity; but that does not alter the fact that they can be grown to give a great deal of pleasure to lovers of well-grown Orchids. —H. R. R.

ROYAL HORTICULTURAL SOCIETY.

DRILL HALL.—September 7th.

The Drill Hall was not overcrowded with produce on the above date, but there were many exhibits of more than average interest. Messrs. J. Veitch & Sons contributed handsomely to the display with Orchids and Pitcher Plants. Mr. Chapman's Sarracenias and Cephalotus were attractive, and Mr. Farr's Crotons imposing. Dahlias of course made a fine display, as did the collections of fruit from the Royal Gardens at Windsor and from Syon House.

Fruit Committee.—Present: P. Crowley, Esq. (in the chair); with Rev. W. Wilks, and Messrs. G. Bunyard, A. H. Pearson, H. W. Ward, G. W. Cummins, T. J. Saltmarsh, G. Reynolds, J. Willard, J. Smith, H. Balderson, G. Wythes, G. Sage, W. Bates, W. Farr, C. Herrin, W. J. Empson, and J. Wright.

Mr. W. J. Coles, The Gardens, Higher Balcombe, sent remarkably fine specimens of the Exquisite Peach. It is a yellow-fleshed American variety, of which its fine appearance is its greatest merit. The fruits were excellently grown, and a cultural commendation was awarded. A similar mark of recognition was accorded to Mr. W. Howe, gardener to Henry Tate, Esq., Streatham, for extremely fine fruits of Stirling Castle Peach grown in the open air. Mr. J. Miller sent from Ruxley Lodge, Esher, fifteen fine Princess of Wales Peaches, and a bronze Knightian medal was awarded; but the triumph in this direction was left to Mr. Owen Thomas, who sent from the Royal Gardens a splendid collection of Peaches and Nectarines grown against open walls, twenty-two dishes of the former, and fifteen dishes of the latter, also two fine dishes of the Golden Jubilee Tomato, and a silver-gilt medal was unanimously awarded. Open air Peach culture is evidently not yet a lost art.

Mr. C. Martin, Clarence House, East Cowes, sent a handsome, well-netted Melon, named Sixtieth Reign, raised from seeds sown 7th May this year, and the plants grown in an unheated pit. The variety is the result of a cross between Royal Favourite and Blenheim Orange. The quality, though good, was not considered quite good enough for an award, and it might be better with the fruits ripened under more favourable circumstances. Mr. C. Herrin sent two seedling Melons, to one of which, named *Mrs. Herrin*, large netted, thick, nearly white, fleshed fruit, an award of merit was granted. La Favourite, raised by Mr. Herrin about a dozen years ago, was one of the parents of the new variety. Several other Melons were shown, more or less unripe, and passed, except twenty-four fine fruits from Mr. W. Kemp, The Gunyah, Barnes, for which a silver Banksian medal was granted.

Sprays of a seedling Nut were sent by Mr. W. Mitchell, Farnham Royal, similar to the Frizzled Filbert; also sprays of an improved Blackberry, *Mitchell's Seedling*, raised from the common Bramble. Both the trusses and individual fruits are very large, and an award of merit was accorded.

Mr. W. W. Taylor, Forest Hill, sent three excellent bunches of Madresfield Court Grapes, for which a cultural commendation was unanimously granted.

Mr. W. Farr exhibited a plant of a Tomato wreathed with fruit to a length of 6 feet (cultural commendation). Wonderfully prolific Tomato plants of Campbell's Prolific were exhibited by Mr. John Russell, Richmond, and the variety is to be tried at Chiswick.

Mr. W. Miles, Down, Kent, sent fine clusters of a dark blue seeded Scarlet Runner Bean. Referred to Chiswick for trial. Mr. W. J. Empson sent splendid Scarlet Runners, Hill's Prize (Bunyard), which was honoured at Chiswick a few years ago.

Mr. G. Wythes exhibited an extensive collection, comprising seventy dishes of fruit of various kinds, and was unanimously granted a silver Knightian medal.

VEITCHIAN PRIZES FOR APPLES AND PEARS FOR FLAVOUR.—*Apples.*—First, Mr. Mayne, Bicton Gardens, with Kerry Pippin. Second, Mr. G. Wythes with Gravenstein. *Pears.*—First, Mr. C. Herrin, Dropmore, with Williams' Bon Chrêtien. Second, Mr. Wythes, with the same variety. There was a good competition of seventeen dishes.

FLORAL COMMITTEE.—Present : W. Marshall, Esq. (in the chair) ; with Messrs. J. Fraser, H. B. May, J. Jennings, G. Paul, C. J. Salter, W. Bain, J. W. Barr, G. Gordon, J. D. Pawle, H. Turner, C. T. Druery, G. Nicholson, R. M. Hogg, and C. Jeffries.

Mr. E. K. Eames, Fulwell Nurseries, Twickenham, sent a number of plants of Eucharis amazonica. They were in excellent health and carrying fine flowers (silver Flora medal). Messrs. J. Cheal & Sons, Crawley, staged a handsome collection of Dahlias, comprising fresh and brightly coloured examples of Cactus, Pompon, single, and large varieties. Amongst the Pompons were noted Marion, Bacchus, Purity, Nerissa, Sunny Daybreak, Dr. Jim, and Clarissa. Of Cactus varieties the best were F. C. Pawle, King of Siam, Matchless, Fusilier, Mrs. Gilliat, Beatrice, and Lady Penzance. Conspicuous in the singles were Fred Leslie, Miss Roberts, Amos Perry, Naomi Tighe, Demon, and Folly (silver Flora medal). Mr. W. J. Godfrey, Exmouth, sent Chrysanthemums Barbara Forbes and Queen of Earlies.

Mr. E. F. Such, Maidenhead, exhibited a number of Cactus Dahlias of fair quality that were spoiled by the arrangement. Very handsome were the striped French Marigolds from Messrs. Dobbie & Co., Rothesay. The strain is evidently a very good one. Messrs. W. Cutbush & Son, Highgate, staged a handsome exhibit of Nerine Fothergilli major, interspersed with small Ferns. The Nerines were in splendid health. Mr. R. Owen, Maidenhead, sent a bright collection of Cannas. The varieties included Général de Mirabel, Italie, Monsieur Colcombet, and others. Messrs. Barr & Son, Covent Garden, occupied their customary position with the inevitable collection of hardy flowers in variety. There were several distinct kinds (bronze Banksian medal).

One of the most handsome exhibits in the hall was formed by the Nepenthes from Messrs. J. Veitch & Sons, Limited, Chelsea. The arrangement was, perhaps, somewhat thin in places for the best effect, but advantageous in allowing every plant to be seen. The most conspicuous were Domini, Curtisi superba, mixta Chelsoni, Curtisi, Hookeriana, Dicksoniana, Cincta, Mastersiana red var, Wittei, Morganiæ, Northiana, and a new one named Tiveyi, which is very handsome. The same firm also sent hardy flowering shrubs, such as Hibiscus cœlestis, single Painted Lady, totus albus, and Lady Stanley, with Acidanthera tricolor, Robinia hispida, Andromeda arborea, and others (silver-gilt Flora medal.)

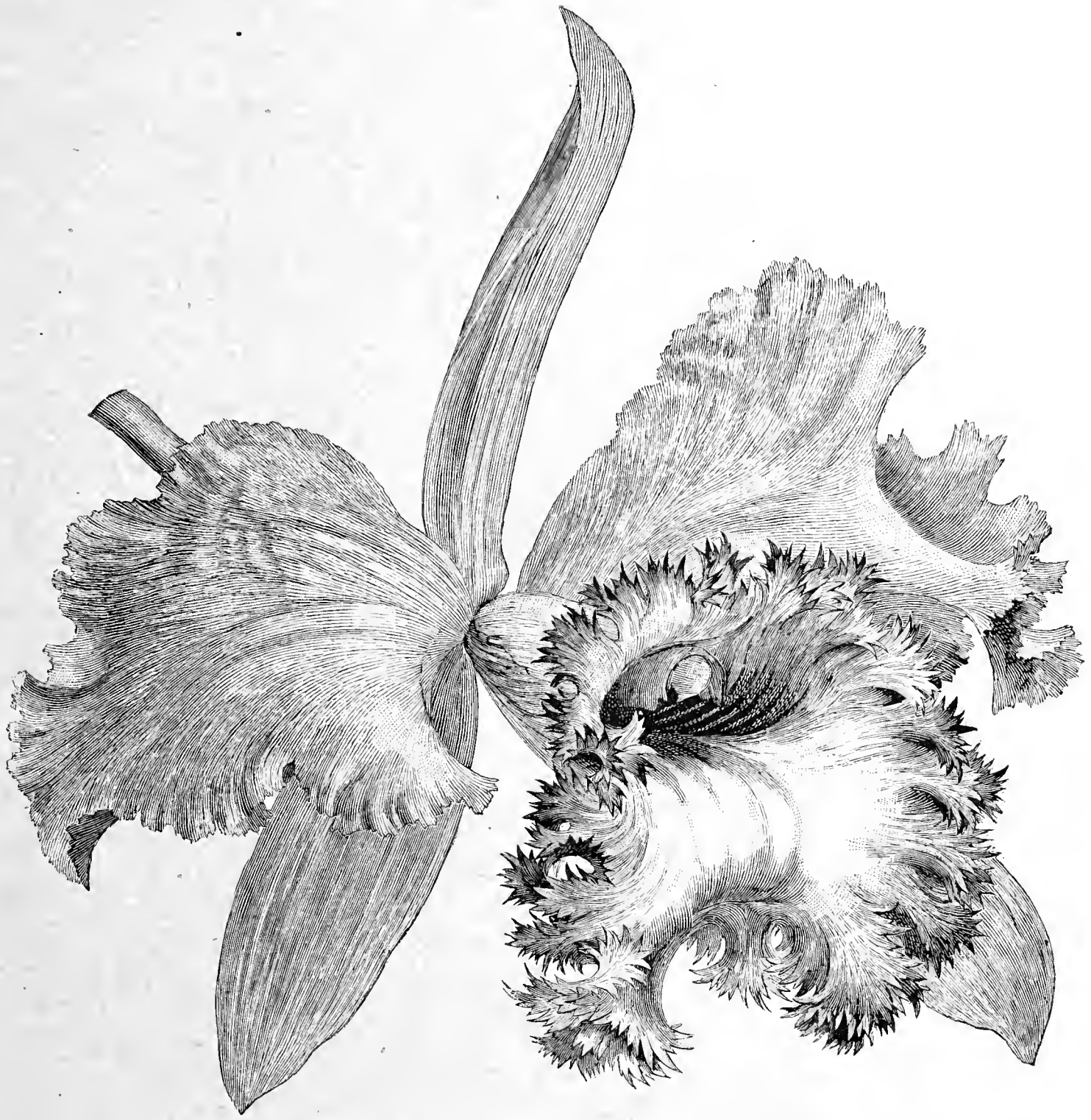

FIG. 34. LÆLIO-CATTLEYA DIGBYANA TRIANÆ.

Mr. H. J. Chapman, gardener to R. I. Measures, Esq., Cambridge Lodge, Camberwell, sent in a most interesting collection of Sarracenia and Cephalotus follicularis. The Sarracenias comprised Courti, Chelsoni, Stevensi, crispata, californica, and others (silver-gilt Flora medal). Without the group of Crotons shown by Mr. W. Farr, gardener to A. F. Pears, Esq., Springrove House, Isleworth, the Drill Hall would have looked somewhat empty. The plants were splendidly grown and the colours very good, but the light is not good enough in the hall for the plants to be seen to the best advantage (silver Flora medal).

ORCHID COMMITTEE.—Present : H. J. Veitch, Esq. (in the chair) ; with Messrs. J. O'Brien, H. M. Pollett, T. Statter, J. T. Gabriel, F. J. Thorne, T. W. Bond, C. Winn, A. H. Smee, H. J. Chapman, T. B. Haywood, and J. Douglas.

The only collection of Orchids of any size was that of Messrs. J. Veitch & Sons, Ltd., which was very beautiful. The plants included several kinds, and as considerable care and taste had been exercised in staging, an excellent effect was produced. There were Odontoglossums, Oncidiums, Cattleyas, Lælio-Cattleyas, Aërides, Cycnoches, Cypripediums, and several others (silver Flora medal). Mr. T. Stafford, gardener to

F. Hardy, Esq , Tyntesfield, Ashton-on-Mersey, sent a few Orchids (silver Flora medal), as did one or two other exhibitors, including Mr. F. J. Thorne, gardener to Major Joicey, Sunningdale Park, who exhibited a splendid specimen of Aeineta bieolor.

CERTIFICATES AND AWARDS OF MERIT.

Cattleya Euphrasia (J. Veitch & Sons, Ltd.).—A superb hybrid resulting from a eross between C. superba and C. Warscewiczi. The sepals and petals are rieh rose purple, and the magnificent lip deep velvety erimson with a lemon eoloured throat (first-class eertifieate).

Dahlia F. C. Pawle (J. Cheal & Sons).—A handsome Cactus variety of good substance. The eolour is rieh crimson, occasionally flushed with purple (award of merit).

Hibiscus Manihot (J. Fulford).—A beautiful flower, pure yellow in colour. When the bud is expanding it has much the appearance of an Evening Primrose (award of merit).

Michaelmas Daisy Mrs. W. Peters (W. Peters).—A seedling with white flowers. The height is about 2 feet, and the plant is extremely floriferous (award of merit).

Nepenthes Tiveyi (J. Veiteh & Sons, Ltd.).—New Nepenthes are seldom seen. The one under notice resulted from a cross between N. Veitchi and N. Curtisi superba. The pitchers are medium to large in size, and wonderfully even in shape. The ground colour is pale green, and the profuse marking ehocolate brown (first-class certificate).

Rhynchostylis cœlestis Cambridge Lodge var. (H. J. Chapman).—This is a dark form of the type (award of merit).

BRIEF NOTES ON ALPINE FLOWERS.

(*Continued from page* 168.)

ACANTHOLIMON GLUMACEUM.

THIS "Priekly Thrift" is by no means a rare plant, nor one which is difficult to grow. While it is thus less likely to be coveted by growers of rare alpines, it is one of the almost indispensable plants for the rock garden. It much resembles in flower an abnormally dwarf Statice, and has, indeed, been by some included with these plants under the name of Statice Ararati.

A native of Armenia, it is quite hardy, although sometimes injured by frost in severe winters. It forms a neat mound of narrow and crowded leaves, spiny at the points. The flowers are of a rose eolour, and are produced on spikes, which rise a little above the tufts of leaves. The whole plant is only about 6 inches in height. A. glumaceum prefers a light well-drained soil, but is none the worse for having a fair supply of water in summer, provided the position is a sunny one. This full exposure to the sun ought to be secured in any soil. The Prickly Thrift is valuable for slopes or terraces of the rock garden, or for rockwork edgings to walks. It is much more easily grown than its scaree and diffieult congener, A. venustum. It is inereased by cuttings.

ACHILLEA AGERATIFOLIA.

This Greek Achillea is but seldom met with under Bentham and Hooker's name of A. ageratifolia, Grisebaeh's one of Anthemis Aizoon being more commonly followed in garden praetice. It is a very desirable little plant, and certain to be appreciated by those who like modest yet attraetive beauty in foliage and flower. The flowers themselves are something like those of a white Daisy in general appearance, with fourteen to eighteen broad ray florets. The leaves are equally attractive from their whiteness and the manner in which they are serrated. The whiteness is eaused, as is frequently the ease, by the presence of a down on the leaves. A. ageratifolia grows about 4 inches high. It likes a moderately light and dry soil, and flowers well in one with limestone or chalk among it. It is a little tender in some localities, and is occasionally lost in others from the effeet of excessive rains in winter.

CONVOLVULUS LINEATUS.

The "Pigmy Convolvulus," as it is occasionally called, is a pretty little plant whieh is, unfortunately, the cause of much trouble and disappointment to its owners. This is principally due to its shy-flowering habit in a large number of gardens. I have been often asked about this, but it would be affectation to say that one is able to preseribe an unfailing cure for so great a defect. The more we know of some flowers the less likely are we to dogmatise on the score of their requirements, or to say that a certain treatment will insure success. Judging from considerable observation of this little Convolvulus, I think, however, that a good firm soil well drained, but with an ample supply of water in summer, is most likely to give satisfactory results.

On a poor and rather dry soil it seldom gives much satisfaction, and in such its habit of sending out underground runners, a feature on all soils but even more marked on a poor one, suggests better feeding than the plant generally receives. This running habit makes it troublesome among other dwarf flowers, but may be counteracted by enclosing the plant so that its runners eannot trespass upon others. When this is done it may beeome partially exhausted and should be lifted every few years, reduced, and replanted in fresh soil. The whole plant only grows from 3 to 6 inches high, and a mass looks very pretty with its lance-shaped silky leaves. The flowers are a pretty rose and are nearly an ineh across.

ERICA VAGANS ALBA.

Heaths are of the utmost value in the rock garden, their generally neat habit and profuse flowering making them unfailing favourites. The number of species and varieties is large, and all the hardy ones can be utilised with advantage where there is sufficient space. The white variety of E. vagans, the Cornish Heath, finds much favour either in or out of flower. As these lines are written a large plant crowning the summit of a roekery is very handsome, with its racemes of white flowers with pro eeting chocolate-coloured anthers. In a rather dry place, it flowers well every year, but requires in continued dry weather an oeeasional soaking with water. One hot summer this was neglected, with the result that it took the plant a year or two to recover properly from the effeets of the drought.

E. vagans alba is not at all difficult to obtain, and if inerease of stock is required division of established plants may be practised. Space will not permit of dealing with some other useful Heaths, but one may mention that one of the best of the white-flowered plants of the same natural order is Calluna vulgaris Hammondi, generally a most satisfactory plant for autumn bloom.—ALPINUS.

(To be continued.)

EATON HALL.

THE palatial seat of the Duke of Westminster is about three miles from the ancient City of Chester, with its cathedral and Roman walls. Visitors from Chester may enter the park by the Overleigh Gates, just without the City, or may go by steamer up the classical River Dee to Eeeleston Ferry, a few minutes' walk from the Hall. As is well known, his Grace is reekoned to be the richest man in England. His income from London property alone is estimated at £800,000 per annum.

The family of Grosvenor, Dukes and Marquises of Westminster, is descended from Gilbert Le Grosvenor, who came over with William the Conqueror. They were people of high standing in Normandy for 150 years anterior to the Norman Conquest, and held the high and honourable offiee of Le Grovenour. Gilbert Le Grosvenor, according to "Collins' Peerage," was nephew of Hugh Lupus, the great Earl of Chester, who was nephew of William the Conqueror, his father being Riehard Earl of Avranches in Normandy, and his mother Emma, the King's sister. Hugh Lupus was invested with the Earldom of Chester in 1070 by his uncle, and had jurisdietion over all Barons within the eounty, excepting the Bishop. A bronze equestrian statue of Hugh Lupus stands in the courtyard of Eaton.

It is not of the glories of Eaton that I intend to write. My visit being a hurried one I am only able to reeord indifferently what I saw in the large corridor and a few plant houses around. The eorridor, running from north to south, is 360 feet long, 12 feet wide, and about 20 feet high. It has narrow borders on each side of the broad walk, in whieh are planted elimbers which hang in graeeful negligence overhead. Amongst the large plants in flower were Fuchsia corallina and F. fulgens, hanging in pendulous raceme s ; three large plants of Bougainvillea glabra, remarkable for the intenso mauve colour of the bracts. This is evidently the result of cool treatment and abundanee of light, as grown in a stove we heard eomplaints of the dullness of their colour. A large Plumbago capensis was full of its cold pale blue flowers ; Cassia corymbosa was a mass of gold ; Brugmansia suaveolens was drooping with its long white trumpet flowers. A large Heliotrope added its beauty and fragrance to the scene. Abutilon Boule de Neige was truly named a ball of snow. Amongst other plants elothing the sides and roof of the eorridor were Cobœa scandens variegata and Oleanders. The pathway borders were gay with large plants of Liliums speciosum rubrum and speciosum Kraetzeri, Campanula pyramidalis in 10-inch pots with an average of six spikes of bloom to eaeh plant, also rich Cannas and graceful Fuchsias.

On the eastern side of the eorridor is a delightful Water Lily house, about 40 feet long by 30 feet in breadth. The sides of the tank are about 3 feet above the pathway whieh runs around the house, whieh has side stages. The tank occupies the whole eentre of the housc, and its sides are fringed with Ferns, Tradescantia, and Panicum. At intervals rising from this leafy groundwork are miniature groups of Aehimenes, Gloxinias, and Capsieum Prince of Wales, profusely berried ; also Crotons, and Clerodendron fallax in full flower. Up the pillars around the tank are entwined Thunbergia alata and T. alata alba. Festooning the roof Bignonia venusta is laden with its purple flowers, and Jasminum grandiflorum emits its sweet perfume. Several large hanging baskets are suspended from the apex of the roof, all excepting two being Aehimenes, and these two Mierolepia hirta cristata.

I noticed elose to the eorridor a houseful of flowering Cannas, and another of Plumbago rosea for winter flowering in 6 and 8-inch pots. Suspended from the roof in this house were hanging baskets of Asparagus deflexus, and on the shelf Smilax asparagoides for eutting. Another house was full of Eranthemum pulchellum and Bouvardias for winter flowering ; the rafters were elothed with Dipladenia boliviensis in profuse flower. I observed in another house a portion of the Malmaison Carnations that were awarded the gold medal at the last Chester show, and had reeently been placed in 8-inch pots.

The fruit houses, Orchid houses, kitehen garden, and parterre I do not presume to describe, but leave them to others with more time and facile pens ; but I can say there is no question but that the ducal gardens are ably managed by Mr. Barnes, who is equal to his duties and the control of the fifty men who are employed in their keeping.—F. STREET.

To the Members of the National Rose Society.

I do not think that any member of the N.R.S. who is interested in its welfare can be quite satisfied with its present condition. It is true that each year our schedule of prizes becomes more and more enlarged; that new classes are originated, and that some few of our members generously come forward to offer an additional stimulus to exhibitors; that we have issued several publications, and that the number of the societies affiliated with us does not diminish; but at the same time there seems to be that want of enthusiasm without which no cause can prosper.

It is probably the very fact of our having always a credit balance at our bankers at the end of the year that leads our members to be satisfied with the present condition of things; but when we consider that the number of our members has not of late years increased, I do not at all think that we can congratulate ourselves overmuch. This opinion has been expressed by many, and various suggestions have been made as to how it is to be remedied. Many of these seem to me unpractical and impracticable, and I have therefore felt constrained, as the founder of the Society and not in any official capacity, to make this appeal.

I want to ask you, my friends, if each one of you cannot procure an additional member? There are many, both professional and amateurs, who have received considerable sums as prizes who have never as yet brought us one member. Will you not, then, bestir yourselves, and see if you cannot remedy this great defect? Of course, I do not anticipate any immediate response to this, as we are drawing towards the end of our year, but I do want you to think over it and lay to heart the suggestion I have made.

Let me again say that this move is an entirely independent one, and in no way compromises anyone but myself; but I feel it is necessary to make this appeal when I note the steady, and in fact rapid, advance of other societies devoted to various branches of horticulture, while our society is practically merely holding its ground.—H. Honywood-D'Ombrain.

Rose Souvenir de la Malmaison.

If I were compelled to grow only one Rose, and had my choice of variety, I should certainly decide in favour of this old Bourbon. It comes as near to perpetual blooming, without any special pains being taken with it, as any Rose of good form that I know. It has a splendid constitution, growing and flowering as freely at twenty years old as it does as maidens.

Cuttings of this variety root very freely, and it grows as vigorously on its own roots as when budded on any stock. Unless the autumn is very wet, the late blooms are as good, and often better, than the earlier ones, and it will not cease blooming until the weather becomes so bad that the unopen buds rot on the trees.

In pruning this Rose only the weak shoots should be removed, and the strong ones slightly cut back; otherwise the bush should be allowed perfect freedom. The colour of the blooms is a delicate pale blush, and it has a pleasing perfume. Have other growers their favourite Rose? If so, what is it?—J. H. W.

NOTES ON GOGERDDAN.

Having recently been on a holiday visit to Aberystwith, I heard much of the beauties of Gogerddan, the seat of Sir Pryse Pryse and Lady Pryse. The estate is situated about three miles from the resort mentioned, and the drive through charming Welsh scenery is most enjoyable. The gardens are about 4 acres in extent, and the houses strong and well built. In a lean-to vinery we saw a splendid crop of well finished Black Hamburghs, and we also noticed a rod each of Lady Downe's and Foster's Seedling, carrying fine and well coloured bunches. Adjoining this house is the late vinery, in which the Hamburghs were just beginning to colour. The clean, healthy foliage denoted high culture and careful management.

A block of three span-roofed structures, comprises two fine greenhouses, with the stove in between them, the cool portions of which contained a fine show of flowering plants, notably Begonias, Petunias, and Zonal Pelargoniums, Liliums, Fuchsias, bearing a wealth of flower, while along the back of the stages, planted in large pots, were two superb Abutilons in full flower. Lapageria rosea and alba, Hoya carnosa, and Passiflora Buonapartea, all help to make a charming display. The stove is a lofty structure with a centre bed, in which we saw some choice specimen Palms, while on the side stages were well grown Ferns, a Cissus discolor, Stephanotis trained on balloons, and by the door a splendid specimen Croton Weismanni; on the roof were an Allamanda in full bloom, Bougainvillea glabra, and Clerodendron Balfourianum. In a neighbouring structure there was a grand show of Crotons, Dracænas, and Pandanus, which will make nice table plants.

Along the whole length of a high wall running across the centre of the garden, separating it into two parts, is a row of Peach houses, with a southern aspect. There is the early Peach house, cleared of its fruit; another with its beautiful fruit now ready, while a third is devoted to late varieties that will carry on the supply for a long time to come. The chief varieties grown are Nectarines Elruge and Lord Napier, while of the Peaches there are Early Rivers, Noblesse, and Stirling Castle, with others. Planted out along the front, and trained up under the glass, was a splendid row of Tomatoes, carrying heavy crops of handsomely finished fruit, the varieties being Ham Green Favourite, Perfection, Market Gem, and Peach Blow.

Chrysanthemums are also in evidence, for along the side of a walk were some tall specimens, intended for cut blooms for exhibition, their healthy dark-green foliage showing they are well looked after; while in another place was a useful collection of bush plants, which should produce good blooms later in the year.

The kitchen garden, a model of cleanliness and order, is stocked with all kinds of vegetables. To enumerate all would take far too much space. On the whole the gardens are a credit to Mr. James Vearey and his staff, and bespeak careful and well-considered culture. Across the road is the mansion, with its attendant pleasure grounds and flower garden. The flower beds were charmingly arranged, and presented a mass of colours, well blended. By the kindness of the owners these gardens are open to the public on every day except Sunday.—A. E.

HORTICULTURAL SHOWS.

READING.—September 1st.

In most inauspicious weather the Reading Horticultural Society opened its summer exhibition. Rain came down in torrents, and strong winds prevailed. Horticulturally the show was one of the best the Society has had, all sections being well represented, although the place of honour must be given to the vegetable classes. The many collections set up were indeed superb, and we may safely say that a standard of such excellence has not been reached at any other show this season. The fruit staged in the various classes was of good quality, while groups and specimen plants all added to make a fine display. Cut flowers were also well represented in the classes allotted them. Messrs. J. Veitch & Sons, Ltd., R. Wallace & Co., J. Laing & Sons, and J. Hudson had beautiful non-competitive exhibits.

There were three entries in the class for a group of plants arranged for effect, occupying a space 18 feet by 10 feet, and in addition to the money the Sutton challenge cup, value 25 guineas, goes with the first prize. Mr. Peel, gardener to Miss Todd, Southampton, was the winner with a pleasing arrangement. Mr. Pope, gardener to J. P. White, Esq., was very close second. Mr. Bassil, gardener to D. H. Evans, Esq., third. For the best group in a space 10 feet by 8 feet Mr. Chamberlain, gardener to F. M. Lonergan, Esq., was successful, followed by Mr. Alexander, gardener to R. Hewett, Esq., and Mr. Goddard. Specimen plants were well staged by Mr. Wm. Finch, Coventry, who took first place. Mr. Peel was second. For the best six stove or greenhouse Ferns Mr. Willis, gardener to H. C. Symonds, Esq., was a splendid first, Mr. Leith and Mr. Peel being second and third in the order named. For the best six plants for table decoration Mr. Fulford, gardener to F. D. Lambert, Esq., was to the front; Mr. Pope second; and Mr. Best third. Fuchsias were superb. Mr. Bright, gardener to J. B. Karslake, Esq., was a splendid first; Mr. Wilson second, also having a fine lot, Mr. Hinton taking third place. Messrs. R. Wallace & Co., Colchester, staged half a dozen Liliums, and were awarded the prize. Coleus were good, Mr. Hammond, Mr. Goddard, and Mr. Ferry being the winners. For three Palms Mr. Peel was a good first with healthy plants, Mr. Hammond taking second place. Begonias were represented by nice plants. Mr. Bassil staged the best, Mr. Smith second, and Mr. Mayne third.

Dahlias were very good. Mr. J. Walker, Thame, was placed first for eighteen Show varieties. Mr. Mortimer was a splendid second; and Messrs. J. Cheal & Sons third. Mr. Mortimer took first place in a similar class for Cactus kinds; Messrs. Cheal & Sons second. The last named were a good first for single Dahlias; Mr. Such second. Asters, Gladiolus, and Zinnias were all well staged, and the display made in the hardy cut flower classes was very fine.

Fruit made a fine display. For the best eight dishes Mr. Gleeson, gardener to C. E. Keyser, Esq., was a fine first with Black Hamburgh and Muscat of Alexandria Grapes, Barrington Peach, Golden Perfection Melon, a fine Pine, Nectarines, Figs, and Cherries. Mr. Pope, gardener to the Earl of Carnarvon, was second; and Mr. Cole third. In the class for six dishes Mr. Howard, gardener to Mrs. Myers, Benham Park, was first with fine Pincapple Nectarines, Suttons' Scarlet Melon, Stirling Castle Peach, Kirke's Plum, Black Hamburgh and Muscat Grapes. Mr. Chamberlain was a creditable second; Mr. Bassil third.

There were five entries for three bunches of Black Hamburgh Grapes. Mr. W. Fyfe, gardener to Lord Wantage, was first with grandly coloured examples, Mr. Cole second, and Mr. Wilson third. Mr. Fyfe was also first in the class for any other Black, staging Madresfield Court in perfect form. Mr. C. Cooper was second with Gros Maroc; Mr. Cole third. For the best three bunches of Muscat of Alexandria Mr. Fyfe was again successful with superb examples, Mr. Cole second with larger bunches not nearly so well finished. For the best dish of Peaches twelve staged, Mr. Bowerman winning with fine Barrington; Mr. Leith second, and Mr. Cole third. For six Nectarines Mr. Howard was awarded the prize, staging Pineapple, Mr. Gleeson second, Mr. T. Turton third. The last mentioned exhibitor won for Figs, followed by Mr. Bastin. Mr. Turton

also had the best three dishes of Plums; Mr. Bowerman took second place, and Mr. Osborn third.

Dessert Apples were good. For the best three dishes, Mr. Turton won with Irish Peach, Miller's Seedling, and Worcester Pearmain; Mr. Ross second, and Mr. Fyfe third. For culinary, Mr. Ross scored with Stirling Castle, Warner's King, and Ecklinville Seedling; second, Mr. Webb, and Mr. Osborne third. The best scarlet Melon was staged by Mr. Booker, and the best green flesh by Mr. Mortimer, a delicious fruit named Sutton's Perfection. For three dishes of dessert Pears Mr. Taylor was successful, and Mr. Chamberlain a good second.

All the lions of the vegetable kingdom were at this show, and the produce staged made a most imposing display. For the seven valuable prizes offered by Messrs. Sutton & Sons for twelve dishes, in not less than nine distinct kinds, there were fifteen competitors. Mr. Lye, gardener to Mrs. Kingsmill, Sydmonton Court, was a splendid first with Autumn Mammoth Cauliflower (grand in every way), Best of All Bean (splendid), fine Prizetaker Leek, superb Carrots and Beet (Blood Red), with Snowball Turnip, Autocrat Pea, Satisfaction Potato, Sulham Prize Celery, Perfection Tomato, Student Parsnip, and Selected Ailsa Craig Onion. Mr. Bowerman, gardener to C. Hoare, Esq., Hackwood Park, was second with a very fine lot, Beet, Carrots, Beans, Potatoes, Turnips, Leeks, and marvellous Onions being his best dishes. Mr. Fyfe, gardener to Lord Wantage, was third, his Beet, Cauliflower, Celery, Onions, and Peas being very fine. Mr. C. Foster fourth; Messrs. Waite, Best, and Pope following in the order given. Messrs. Bastin and T. Wilkins were awarded prizes equal to the seventh. Only two lots staged in Messrs. Webb's class, Mr. Kneller winning with good produce.

Vegetables at the Reading Show.

No doubt you will ere now have received from your reporter an account of the high-class show held on September 1st at Reading, under such deplorable weather aspects. Good all round as the exhibition was, there was no question but that the vegetables arrayed by the best growers and exhibitors of the day in competition for Messrs. Sutton & Sons' valuable money prizes was not only the great feature, really the dominant one, and were universally admitted by all who saw them to be the very finest in quality and general excellence ever seen in the country. A competition of fifteen collections was indeed good, making a total of 180 dishes. Out of these six lots were, though nominally excellent, yet not good enough to point.

That the highest excellence was looked for was natural, having regard to the reputations of the leading competitors. Still farther, it has for years been the case that the best average quality in vegetables found anywhere has always been at Reading. Then there is the fact that the competition is for prizes offered by the great Reading seed firm.

Whilst all the collections pointed had such primary vegetables as Onions, these generally being large and very handsome; Carrots, chiefly the New Red Intermediate; tapering Beets, as a rule not quite up to the correct form, though some were exceptionally good; Celery, either Red or White, and the best very fine and solid, and remarkably free from stain or abrasion; Cauliflowers, the best wonderfully white, solid, and handsome, though some were rather large as others were a trifle small, yet so good all the same. Runner Beans were all of the new Prizewinner or Best of All types, long, straight, narrow, yet thick, fresh, green, and tender; even the cottagers' dishes all seemed to be of this type, and were astonishingly fine also. Tomatoes, all of the Perfection strain, fruits generally even, rich coloured, fresh, not over-large, and very effective. Potatoes were of course in every case Satisfaction. Windsor Castle and some white kidneys were singularly good, though a few dishes were a trifle large; and Leeks, varying much, the best being really first rate. Then found more irregular were dishes of another Potato or Carrot, or perhaps a second lot of Celery, although duplicates did not add to strength. Peas in several cases excellent; Parsnips really first rate, especially those from Lockinge; Globe Artichokes, two lots only, very good, though not highly regarded; and Brussels Sprouts, found in three lots, also not strong features yet, as hardly in season.

That there was no collection absolutely perfect is a matter of course. Mr. R. Lye, who came first, was weak in his Peas, Tomatoes, and Celery, but was strong with Onions, Carrots, Beets, Cauliflowers, Runner Beans, Potatoes, and Parsnips, Turnips and Leeks coming pretty good. Mr. Bowerman, who came second, was strongest with Onions, very fine Ailsa Craig, Runner Beans, Turnips, Potatoes, and Leeks, Carrots, Celery, Tomatoes coming second best, Peas being his weakest dish. Very much in this way did all the pointed collections run, the points of the first five collections being covered by a range of 5 only, and the sixth and seventh, both getting prizes, came within $2\frac{1}{2}$ points; so that a difference of $7\frac{1}{2}$ points was all that existed between the first and the seventh. The eighth and ninth also ran these hard, and Messrs. Sutton & Sons kindly added two other prizes of 20s. each. The first prize was £10, and the total sum given in nine prizes was £34, really a munificent sum.

It seemed a case in which, because of the nearness in merit of the respective collections, that it was an admirable opportunity for testing the plan of pooling the money, and dividing it amongst the competitors according to point value. The Reading firm having this year not only required a moderate number of dishes, but also specified the exact numbers to be shown in each dish, were rewarded by a splendid competition, although half a dozen were clearly out by it. It will soon be needful to have at Reading a champion class for twelve dishes, into which certain leading competitors should go, and a further class for nine dishes, open to all but the champion men. That course would greatly tend to encourage smaller men to compete, whose chances against the giants, if so they may be termed—Lye, Pope, Bowerman, Fyfe, Foster, Waite, Wilkins, and Kneller—are so poor now. It is, of course, a question of means or prizes, and there is ample room for more for vegetables at the Reading Summer Show.—A. D.

Bath.—September 1st and 2nd.

The Bath Floral Fête Committee is most unfortunate in its autumn fixtures. All they need to make their exhibitions successes is fine weather, and this they are rarely favoured with. On the occasion under notice it rained heavily all the first day, and this completely marred the affair. As far as the exhibition was concerned nothing but praise will meet the case. Entries were far more numerous than usual, and the quality of the exhibits in most instances was most satisfactory. Messrs. B. R. F. Pearson and W. Jeffery are the Secretaries.

Fuchsias are invariably the feature in the plant tents, and they were numerously and admirably shown. Mr. G. Tucker, Trowbridge, was first for nine specimens, showing grand pyramids not less than 9 feet high, and in most instances freely flowered. Mr. J. H. Willcox, Bath, was a good second with smaller pyramids. Mr. J. Lye, Sunnyside, Easterton, was third. The first prize for six plants was awarded to Mr. W. J. Mould, Bath. Mr. Henry Pocock, Hilperton, was second. For four varieties Mr. A. Young, gardener to Lady Pitman, Bath, was a good first with fine well flowered specimens; second, Mr. C. Adlam, gardener to J. A. Martin, Esq., Bath. The prizes for single specimens of different colours were divided among the leading growers named, the competition being keen.

For a collection of stove and greenhouse plants in and out of flower Mr. J. Cypher, Cheltenham, was easily first, showing grand Kentias, Crotons, large and highly coloured Allamandas, and Ericas. Mr. Vause, Leamington, was second. The best bank of fine-foliaged plants was shown by Messrs. E. S. Cole & Sons, Bath. With six flowering plants the competition was close. Mr. J. Cypher was placed first for grand specimens of Erica Eweriana, Bougainvillea Cypheri, Phœnocoma prolifera Barnesi, Statice intermedia, Allamanda nobilis, and Clerodendron Balfouri. Mr. Cypher was first and Mr. Tucker second for Ericas. There was good competition with single specimen stove and greenhouse plants, and also in the classes for Liliums and Coleuses. All the foregoing were arranged on turf banks in one large tent.

The exhibits in a second large tent were more varied and equally attractive. The principal feature was the groups arranged for effect on a space not less than 100 square feet. Mr. Cypher was well first with a light and elegant combination of choice plants, virgin cork, and moss, which answers so well when the materials employed are perfect and tastefully arranged. Mr. A. Tanser, gardener to R. B. Cater, Esq., Bath, was second with a very pretty arrangement, lacking a little in colour, while the third prize went to Mr. Vause. Mr. Tucker was a good first for twelve Ferns, and Mr. T. Truckle, gardener to Thomas Carr, Esq., Bath, first for six Ferns in well-filled classes. The side tables in this tent were wholly occupied by cut flowers, the greater part of which were staged for prizes. Gladioli made a fine display. Mr. S. Bird, gardener to H. Fox, Esq., Wellington, was first for eighteen varieties, and for twelve spikes Mr. F. Hooper took the lead, followed closely by Mr. J. Tont.

Dahlias were remarkably good. For twenty-four varieties, Messrs. Keynes, Williams & Co., Salisbury, were first, and Mr. G. Humphries, Chippenham, a very close second. With twelve varieties Messrs. J. Cray and Son, Frome, were first, and Mr. T. Haskins second. The best stand of Fancies was shown by Mr. G. Humphries; second, Messrs. Keynes, Williams & Co. In the classes for Roses Mr. J. Mattock, Oxford, was easily first for twenty-four varieties, and also for twelve Teas. Mr. J. Bolwell, gardener to Dr. Budd, Bath, and Mr. George Garraway also showed well in the Rose classes. An assortment of very fine varieties gained Messrs. G. Cooling & Son, Bath, the first prize for twenty-four trusses of Zonal Pelargoniums, Mr. G. Humphries being a good second. There were no less than six competitors in the class for twenty-four bunches of stove and greenhouse flowers, a very choice collection staged by Mr. T. Wilkins, gardener to Lady Guest, being first. The second prize went to Mr. G. Hallett, Bath. For twenty-four varieties of hardy herbaceous flowers Mr. A. A. Walters, Bath, was first, and Messrs. Cooling & Sons, Bath, second, the quality of these two exhibits being remarkably good. Mr. G. Garraway was first for annuals, and Mr. F. Hooper second.

Messrs. G. Cooling & Sons arranged a grand display of garden Roses in bunches, not for competition, with a view to showing how continuous and free-flowering many of these old-fashioned Roses are. Messrs. J. Cray & Sons, Frome; and also Mr. G. Humphries, Chippenham, exhibited Cactus and other Dahlias extensively, not for competition. A third tent was filled with vases, dinner-table decorations, bouquets, and wild flowers, and altogether a very attractive display was made.

The tent wholly devoted to fruit reminded us of the palmy days of the Bath Association. Such a grand display of all fruit in season has not been seen at Bath for several years past. For a collection of eight dishes Mr. W. Strugnell, gardener to the Right Hon. W. H. Long, M.P., was well first, showing good Alicante and Muscat of Alexandria Grapes, Hero of Lockinge Melon, Bellegarde Peaches, Pineapple Nectarines, Brown Turkey Figs, Washington Plums, and Williams' Bon Chrêtien Pears, all prettily arranged with Ampelopsis Veitchi. Mr. G. Pymm, gardener to Mrs. Gouldsmith, Trowbridge, was second; and Mr. T. Wilkins third. There were five competitors, with eight bunches of Grapes in four varieties, and all staged bunches well above the average in quality. Mr. W. Taylor, gardener to Alderman Chaffin, Bath, was first, having

grand clusters of Alicante and Gros Maroc, and good Black Hamburgh and Muscat of Alexandria. Mr. W. Mitchell, gardener to F. W. Fleming, Esq., Chilworth Manor, was a close second, his Black Hamburgh and Mrs. Pince being remarkably well finished. Third, Mr. W. Taylor, gardener to C. Bayer, Esq., London. The Madresfield Court in this collection were very fine.

Fifteen competed with three bunches of Black Hamburgh, but Mr. W. Mitchell was easily first, followed by Mr. Allen, gardener to W. Marsh, Esq., Bath ; third, Mr. W. Taylor, Bath, In the any other black class Mr. C. Bayer was a good first with Madresfield Court, second Mr. W. Mitchell. Eight competed with white Muscats. Mr. Carpenter, gardener to A. R. Baily, Esq., Frome, was first with beautifully ripened Muscat of Alexandria, the second prize going to Mr. Bayer. The any other white class was also well filled. First, Mr. W. Marshall, gardener to J. Doyle, Esq., Clifton, who staged perfectly ripened Buckland Sweetwater ; second, Mr. T. Cloote, gardener to D. E. Taylor, Esq. Local growers were well represented in the class for Grapes set apart for them. Mr. S. Hodges, gardener to J. Fort, Esq., was first for good Muscat of Alexandria, and Mr. Marsh second with excellent Gros Maroc.

Melons were numerous, and the quality exceptionally good. Mr. W. J. Atkins, gardener to Mrs. Greaves, was first for a scarlet flesh variety, showing Suttons' A1 of excellent quality, Mr. E. Mallinson taking the second prize. Very good also was the first prize fruit of Imperial Green-flesh, shown by Mr. J. Duckett, Chippenham ; and the second prize fruit of the same variety, shown by Mr. Strugnell. Peaches and Nectarines were numerous and good. The principal prizewinners with these were Messrs. Atkins, T. Ackland (gardener to A. G. Hayman, Esq., Frome), W. Carpenter, W. Strugnell, W. Taylor, and J. Clarke (gardener to J. C. Aiken, Esq.). Plums, Figs, Apples, Pears, and Filberts were represented at the rate of about twenty entries in a class, and a grand variety was shown. Mr. Strugnell was among the most successful in these classes ; Mr. G. Garraway, Mr. J. Manning, Mr. Wilkins, Mr. A. Keevil, and others also taking prizes. Messrs. Cooling & Sons, Bath, staged a row of heavily fruited Apple trees in pots, just as lifted from the open ground ; and a collection of Apples and Pears in dishes.

Numerous classes were provided for vegetables, but these were arranged in the open, and a report of prizewinners could not be taken in a drenching rainfall. Mr. T. Wilkins, Inwood, and Mr. Garraway, Bath, were the most successful with collections.

WIRRAL AND BIRKENHEAD.—September 1st and 2nd.

On Wednesday and Thursday last, under most distressing circumstances as regards the weather, the annual show in connection with the Birkenhead Agricultural Society was opened on the Society's grounds. On the whole the exhibits were of excellent quality, this being most noticeable in the fruit and vegetable classes, which were really excellent, the former being especially fine and keenly contested. Plants, with the exception of Palms and Ferns, were lacking both in colour and flower ; but taking the season into consideration the show was of great excellence. As usual the Stewards, with the indefatigable Secretary, Mr. A. H. Edwardson, were assiduous in their attentions to all present.

For ten flowering and foliage plants Mr. J. W. Tottey, gardener to W. Laird, Esq., was placed first, Crotons Queen Victoria and Countess and Vinca alba being the best. Mr. S. Haines, gardener to E. K. Laird, Esq., second ; and Mr. A. Brown, gardener to Geo. Webster, Esq., third. Groups arranged for effect were not up to former years. Mr. Bradshaw was first; and Mr. J. D. Grindley, gardener to Mrs. Blackburn, second. Mr. A. Brown won class for three stove and greenhouse plants in flower with good Statice profusa, Vinca rosea, and a Pelargonium. Mr. Tottey was second. The order was reversed for three foliage plants, Mr. Tottey also winning classes for one Palm, one foliage plant, one Tree Fern, three Coleus, one Fuchsia, and three table plants. Mr. A. Brown was successful for one greenhouse plant in bloom, one stove plant in bloom, and for three Begonias. Messrs. Haines and Grindley were successful in classes for three Ferns and one Fern. Orchids were much improved, Mr. E. Taylor, gardener to E. Pryor, Esq., took first for three with a lovely piece of Cattleya Eldorado alba and Oncidiums sarcodes and incurvum. Mr. J. Bracegirdle, gardener to W. H. Watts, Esq., was a close second. Hand bouquets, ladies' sprays, and gentlemen's buttonhole bouquets were superb, the winners being Messrs. S. Johnson, J. Clarke, and J. Williams, gardener to C. J. Procter, Esq.

Dahlias were excellent, the Cactus varieties coming in for great admiration ; Messrs. A. J. Stanley and F. Davies, gardener to J. H. Howell, Esq., being the winners in a very strong competition. The doubles shown by Mr. Clement Aldred were charming. Mr. Howell also won in the Aster classes, and Messrs. T. Williams and Haines for Hollyhocks and Gladioli. In classes for twelve and six varieties of indoor cut flowers Mr. R. Pinnington, gardener to Mrs. Banner, Blacklow House, Roby, won with a very choice selection ; the corresponding classes for outdoor flowers falling to Mossrs. Littlemore & Moore and W. Neish, gardener to J. H. Ismay, Esq.

For a dessert table containing six distinct kinds of fruit (Pine Apple excepted), and only two bunches of Grapes, either two black or two white, or one of each colour, representing one kind of fruit, five staged, Mr. R. Pinnington winning with Muscat of Alexandria and Gros Maroc Grapes, Negro Largo Figs, Pineapple Nectarines, Crimson Galande Peaches, Best of All Melon, and Madame Treyve Pears. Ampelopsis Veitchi and Lygodium scandens were used for foliage, the flowers being Gloire de Dijon Roses and Anemone japonica alba. Mr. O. Roberts was a good second ; Mr. Ferguson, gardener to Mrs. Paterson, Rock Ferry, third ; and Mr. Stephenson, gardener to P. McGuffie, Esq., Woolton Hall, fourth.

Mr. J. Bracegirdle, gardener to W. H. Watts, Esq., Elm Hall, Wavertree, had a choice six distinct kinds of hardy fruit, comprising Irish Peach Apples, Jargonelle Pears, Negro Largo Figs, Victoria Plums, Lord Napier Nectarines, and Grosse Mignonne Peaches. Mr. Roberts was placed second. Grapes were of excellent quality, Messrs. Ferguson and G. Jackson, gardener to R. T. Richardson, Esq., being first and second, but surely the Judges scarcely gave sufficient heed to the two grand massive bunches, such as one rarely sees, fine in berry, well coloured, flavour good, and quite five times the weight. Messrs. Ranson and Ferguson had well-coloured Muscat of Alexandria, Messrs. Neish and Pinnington with Madresfield Court, and Messrs. Pinnington and H. Morris, gardener to George Atkin, Esq., with any other white. Messrs. Roberts and Stephenson took the Peach and Nectarine prizes with Sea Eagle and Pineapple. Melons went to Messrs. Downham and J. Williams. Apples were large and well formed, the winners being Messrs. J. Jefferson, P. Stephenson, S. Jones, H. Reynolds, and C. J. Waite, gardener to Sir Patrick Talbot. The Plum classes fell to Messrs. Roberts and Neish.

Vegetables are nowhere seen to greater advantage, but as varieties were many of them not labelled we simply give some of the winners—viz., Messrs. Littlemore & Moore, J. J. Brewin, Neish, J. R. Carter, C. J. Waite, Kendrick, Jefferson, O. Roberts, and H. Banks. The Tomato prizes were taken by Mr. Stephenson. Owing to the torrents of rain falling on both days there was a deficit of something like £250, but as the Society is composed of some of the great Lancashire and Cheshire magnates no doubt the adverse balance will soon be met, for the educational value of such shows cannot well be over-estimated.

GLASGOW.—September 1st and 2nd.

The Show of the Glasgow Horticultural Society was held in the St Andrew's Halls on the above dates. Probably the accommodation is the worst in the country, the halls being excessively dark, the Kent hall, where the vegetables were staged, being lighted all day by electric light. Plants are never a strong feature at Scotch shows, but the competition for tables, which take the place of the familiar groups, were well contested. Mr. D. Wilson, gardener to H. Steven, Esq., Westmount, Kelvinside, taking first place, and winning a handsome silver cup. The table contained well coloured Crotons, Carex, Cocos Weddelliana, Odontoglossum Alexandræ, and was light and elegant. Mr. H. Miller, gardener to A. Russell, Esq., Auchenraith, was second. Ferns, Pelargoniums, Palms, and other plants were shown, but call for no special notice.

Florists' flowers are always very fine at Glasgow, this year the competition being wonderfully keen throughout. For twenty-four Roses Messrs. D. & W. Croll, Dundee, were first, and Messrs. Cocker & Son, Aberdeen, were a close second. For twenty-four Gladioli Mr. Mair, Prestwick, was first, staging magnificent spikes. Mr. Smith, Prestwick, won with twelve spikes. There were six lots of twenty-four double Dahlias, Mr. Campbell, Blantyre, taking first place with fine examples, among others of Chieftain, Harry Keith, Duchess of York, Shottesham Hero, Mr. Chamberlain, Mrs. Morgan, and Cherub ; Mr. Smellie, Busby, second ; and Mr. A. Lister, Rothesay, third. For twelve sprays of Violas five competed, Mr. Campbell winning first with beautiful examples, Mr. Smellie second. Carnations were exhibited in great quantity and splendid quality. Mr. Campbell won for twenty-four, showing fine blooms of Alburea, Ladas, The Dey, Water Witch. Mr. Lister, Rothesay, second.

Marigolds are always a feature here, and the Africans were very fine on this occasion. For twelve African Marigolds Mr. Gourlay, Bishopbrigg, won, and Mr. Stewart, Lennoxtown, was second, both showing perfect flowers and of large size. For twelve bunches of herbaceous flowers Mr. Stewart was placed first, but the exhibit was rather spoiled by every flower being wired and the bunches made too stiff. If exhibitors would only stage herbaceous flowers naturally the effect would be much more beautiful. For twelve blooms of Cactus Dahlias Mr. McGregor, Kilmarnock, was first out of ten competitors, showing many of the newer varieties, Mr. Stewart second.

Fruit was well shown, especially Grapes. For a collection of twelve dishes of fruit, Mr. D. Murray, gardener to the Marquis of Ailsa, Maybole, won with a Queen Pine, Passiflora edulis, Best of All Melon, Black Hamburgh and Muscat of Alexandria Grapes as his best. For four bunches of Grapes, Mr. D. Airdrie, gardener to J. Graham, Esq., Larbert, won with Muscat Hamburgh, Black Hamburgh, Muscat of Alexandria, and Madresfield Court. Mr. J. Leslie, gardener to A. Coats, Esq., Pitcullen, Perth, was second. Mr. Airdrie was also first for two bunches of black Grapes, a collection of six dishes of fruit, and for six Peaches, the variety being Sea Eagle. For two bunches of Black Hamburgh Grapes, Mr. D. Menzies, gardener to J. Brown, Esq., Dunipace, Larbert, was first ; while for two bunches of white Grapes Mr. J. Taylor, Black Dale, Largs, took first place.

Vegetables were very fine, clean, and of good quality considering the wet, cold season experienced in the neighbourhood. For a collection of vegetables arranged in a box Mr. J. Brown, gardener to A. Spiers, Esq., Houston House, Houston, was first. Amongst others splendid Champion Leeks, Autumn Giant Cauliflowers, Winningstadt Cabbage, and Duke of Albany Peas were shown. Mr. C. Trail, gardener to Mrs. Ballantine, Killwinning, second. Mr. Brown was also first for a smaller collection of vegetables. There was great competition for six Leeks, Mr. Cole, gardener to Col. Stuart of Torrance, taking first place with fine, clean, well-blanched solid examples. Mr. J. Gilchrist, gardener to J. D. Bell, Esq., Clifton Hall, Ratho, being second. Nine lots were staged in this,

and ten in a similar class, the same exhibitor winning. For three heads of Celery Mr. Angus, gardener to Lord Hamilton of Dalziel, was first. Potatoes were exhibited in great quantity, Mr. Gemmell winning with six dishes, consisting of Supreme, Abundance, Windsor Castle, Fillbasket, Reading Russet, and Matchless. An amateur (Mr. Watson, Crosford) won in both Onion classes with Dobbie's Golden Globe.

Several trade exhibits were staged. Messrs. Smith & Simons, Glasgow, sent a table of plants; Messrs. Austin & McAslin also contributed a fine collection of plants on the platform. Mr. Forbes, Hawick, had Pentstemons and herbaceous flowers; Mr. Cuthbertson, Rothesay, herbaceous flowers and Alpine plants; Mr. Irvine, Jedburgh, fine Pentstemons; Mr. Smellie, Busby, Violas, Pansies, and Dahlias. Mr. M. Campbell, Blantyre, had a good display of annual hybrid Chrysanthemums, Carnations and Dahlias, and a new White Carnation; and Messrs. Dobbie & Co., Rothesay, a superb collection of Cactus and Pompon Dahlias, containing many novelties. No recognition is made to the trade for the splendid displays they make, and constituting one of the features of the show. The show was formally opened by Mr. A. Cross, M.P.

CRYSTAL PALACE.—September 3rd and 4th.

The annual Exhibition of the National Dahlia Society was held, as usual, at the Crystal Palace. The Exhibition was quite up to the average in all respects, the Cactus section appearing most popular with the exhibitors, as it undoubtedly was with the visitors. The single Dahlia appears to be steadily going on the downward path. The miscellaneous exhibits were numerous, and added a pleasing diversity to the rest of the exhibits.

The commemoration class for collections of Dahlias, illustrating the development of the flower during the Queen's reign, only brought forth two competitors. Mr. M. V. Seale of Sevenoaks secured first prize with a very artistic display, the Cactus varieties being very prominent, and their colours beautifully blended. The other sections were represented by Pompons, Singles, Show, and Fancy. The whole made a pleasing exhibit. Messrs. Cheal & Sons, Crawley, must have been a very close second, the exhibit being charmingly arranged. All sections of the flower were fully represented, while a good supply of Isolepis, Panicum, Asparagus plumosus nanus, Crotons, Palms, and Grasses lent loyally to the display.

Messrs. Keynes, Williams & Co., Salisbury, secured the place of honour for sixty Show and Fancy varieties with a very fine, even stand, in which the colours might have been displayed to better advantage. The best blooms were Wm. Rawlings, Emin Pasha, Matt Campbell, Virginale, Nubian, Wm. Keith, T. S. Ware, Gaiety, Duchess of Albany, Duke of Fife, Colonist, Mrs. Morgan, John Hickling, Arthur Ocock, Pelican, Kathleen, and Imperial. The second prize fell to Mr. C. Turner, Slough, whose blooms were visibly weaker than the first prize stand. The most noteworthy flowers were Geo. Rawlings, Maud Fellowes, Chieftain, Mrs. Morgan, H. Watson, Mrs. Noyes, T. J. Saltmarsh, and Duchess of York. Mr. J. Walker, Thame, Oxon, was third, and Mr. S. Mortimer, Rowledge, Farnham, fourth.

For forty-eight distinct blooms Mr. J. Walker, Thame, secured first place. The most conspicuous flowers were Maud Fellowes, Purple Prince, Miss Cannell, Peacock, Earl of Ravenswood, Harry Turner, Eclipse, and John Rawlings. Mr. C. Turner was second with a bright, clean collection. Dante, Shirley Hibberd, Mrs. C. Noyes, Wm. Keith, John Standish, T. J. Saltmarsh, Chieftain, and W. Garrett were most noteworthy. Mr. S. Mortimer was third, and Mr. M. V. Seale fourth.

In the class for thirty-six blooms, distinct, Mr. G. Humphries, Kington Langley, Chippenham, was awarded senior honours. Alice Emily, T. J. Saltmarsh, Arthur Rawlings, Glowworm, Duke of Fife, Sunset, Mrs. D. Saunders, and Harry Turner were all fine flowers. Mr. J. West, Tower Hill, Brentwood, was second with a good collection, and Mr. J. Stredwick, St. Leonard's-on-Sea, third. For twenty-four distinct blooms Mr. G. Humphries was first with a very fine exhibit. The second position was awarded to Mr. J. West, and the third to Messrs. C. Kimberley & Son, Stoke Nurseries, Coventry. For twelve blooms, distinct, Mr. J. R. Tranter was first, and Mr. A. Rawlings, Romford, second.

The Cactus varieties made a brave show, the leading classes being keenly contested. For eighteen bunches, distinct, Messrs. J. Burrell and Co., Cambridge, were placed first with a very bright and effective display, the best were Regulus, Starfish, Fusilier, Mrs. Kingsley, Foster, Chas. Woodbridge, Falka, and Mrs. Wilson Noble. Messrs. Keynes, Williams & Co. secured second place with a stand which contained some notable seedlings. Messrs. J. Cheal & Sons were third, and Mr. J. Stredwick fourth. For twelve, Mr. J. West had a very fine and effective collection. Mr. J. Humphries was second, and Mr. S. Mortimer third. The class for twelve bunches of decorative Dahlias did not bring out a very good competition. The first prize was secured by Mr. M. Seale with an effective display. Messrs. J. Cheal & Sons, and G. Charlton, Tunbridge Wells, were second and third respectively.

Pompons were largely exhibited, Messrs. Keynes, Williams were placed first for twenty-four distinct with a fresh and bright display. Little Jack, Jewel, Clarissa, Sovereign, and Agate were especially good. Messrs. J. Cheal & Sons were second, their best being Dr. Jim, Ganymede, Tommy Keith, Cecil and Orpheus. Mr. C. Turner was third. For twelve bunches Pompons, Messrs. J. Burrell & Co. were first, showing Mary Kirk, Nerissa, Bacchus, and E. F. Junger well. Mr. J. West was second with good bunches of Donovan, Gipsy, Bacchus, Emily Hopper, and Nellie Broomhead, and Mr. J. Charlton third.

The single Dahlia appears to be declining rapidly, the chief class only brought forth two competitors. Messrs. J. Cheal & Sons were first with an admirable exhibit, the most prominent were Naomi Tighe, M. C. C., Donna Casilda, Beauty's Eye, and Miss Glasscock. Mr. M. Seale's exhibit, like the foregoing, was very fresh and bright. In the amateur section the premier prize for Show and Fancy varieties went to Mr. T. Hobbs; Mr. A. Starling, gardener to H. H. Raphael, Esq., Rosecourt, Havering, was a close second, and Mr. T. Anstiss, Brill, Bucks, third. For twelve blooms, distinct, Mr. S. Cooper, Chippenham, was placed first with a very fine stand. The amateurs' exhibits of the Cactus type prove how popular they have become. In the class for twelve, Mr. W. Mist, Ightham, secured first honours with good sprays of Gloriosa, Starfish, Blanche Keith, and Miss A. Nightingale; Mr. E. Brown, gardener to C. Bowerman, Esq., Horley, Surrey, was second, and Mr. J. Hudson, Acton, third. Mr. E. Mawley, Berkhampsted, was well ahead in the class for six bunches of three flowers; Messrs. Wilkins and E. Wyatt were second and third respectively. For nine varieties, three blooms of each, Mr. Wilkins was placed first, Mr. A. H. Needs, Woking, second, and Mr. E. Brown third.

Dahlias do not lend themselves readily to vase decoration, but some of the efforts at this show were very happy ones. Miss L. Hudson was placed first with a light and delicate arrangement; Mr. W. C. Pagram second with a more diversified display; and Mrs. W. J. Smith, Romford, third. A competition of twelve Dahlias arranged for effect in a vase brought out a strong show, Mr. R. Edwards, Beechy Lees, Sevenoaks, being first, and Miss L. Hudson second.

Miscellaneous Exhibits.—Mr. J. Green, Dereham, Norfolk, sent a collection of Cactus Dahlias and Pompons, comprising all the newer varieties and many of the Dereham seedlings. The most prominent were Midnight Sun, Mrs. Arnold, Mrs. Moore, Norfolk Hero, and Green's Gem. Messrs. Carter, Page & Co., London Wall, had an extensive exhibit of Cactus varieties, flanked by Pompons and Shows, staged somewhat formally, but producing a very bright display. A collection of Asters was staged by Messrs. A. W. Young & Co., Stevenage.

A large collection of Cactus and Pompons came from Messrs. H. Cannell & Sons, Swanley, which fully maintained the credit of the firm. Leonora, Starfish, Oporto Tait, Austin Cannell, Illuminator, Charles Woodbridge, and Mrs. Montefiore were most noteworthy in the former section, while in the latter Achilles, Flo Woodland, Nerissa, Royalty, and Dr. Ranch were very noticeable. A collection of hardy flowers was staged by Mr. John Charlton, Tunbridge Wells, composed of Montbretias, Helianthemums, Aster ptarmica, Solidago altissima, and other subjects, just now at their best. Roses were splendidly shown by Messrs. W. Paul and Son, Waltham Cross, the baskets of Tea Roses being very conspicuous, the new Tea Empress Alexandra of Russia being in fine form, as were also Enchantress and Marie Van Houtte. The Acer foliage used between the baskets had a very pleasing effect. Messrs. J. Peed and Sons, Norwood, exhibited Dahlias in all sections, backed by groups of hardy flowers. A group of Begonias, Crotons, Caladiums, and Palms from Messrs. J. Laing & Sons formed an attractive feature.

ROYAL AQUARIUM.—September 7th, 8th, and 9th.

The early exhibition of the National Chrysanthemum Society was opened on the 7th and continued on the two following days. As usual, the Chrysanthemum classes were very small compared with the exhibition of Dahlias and Gladioli, the Dahlias forming the chief feature of the show. Many of the exhibitors in the Chrysanthemum classes could not have read their schedules very carefully, or they would not have staged midseason varieties in direct contradiction to the laws laid down by the Society. On the whole the exhibition forms a very good opening for the season.

Mr. Eric Such was the only exhibitor of twenty-four bunches of early flowering Chrysanthemums, and was awarded first prize for a very fine exhibit. Twelve bunches of Madame Desgrange were not largely represented, Mr. B. Calvert, gardener to Col. A. Houblon, Hallingbury Place, Bishop's Stortford, being placed first with remarkably fine flowers; Mr. Chas. Crooks, gardener to the Dowager Lady Hindlip, Droitwich, being a close second, and Mr. W. Perrin, gardener to C. W. Richardson, Esq., Sawbridgeworth, third. In the class for twelve (Mdme. Desgrange excepted) Mr. Calvert was again placed first with a fine exhibit of Gustave Wermig. Extra prizes were awarded in this class to Mr. Jas. Agate, Havant, and Mr. W. J. Godfrey, Exmouth, for exhibits of merit, but failing in the requirements of the schedule.

The entry in Pompons was decidedly weak, Mr. E. Such taking first prize with a well-developed stand, and Miss R. Debenham second place. Mr. B. Calvert scored a decided success with six triplets of G. Wermig and Mrs. Hawkins, the blooms being very fresh and bright. Miss R. Debenham, St. Albans, was placed first with twelve bunches, Lady Fitzwygram, Edith Syrat, and Edwin Rowbottom being most noteworthy; Mr. D. B. Crane, Highgate, was placed second with a creditable exhibit of smaller flowers.

The epergnes were very attractive, Mr. T. S. Williams, Ealing, securing first with a display of white, yellow, and bronze Chrysanthemums, tastefully interspersed with Asparagus Fern and coloured leaves. Mr. D. B. Crane second. Mr. A. Taylor, East Finchley, third.

Messrs. J. Burrell & Co., Cambridge, were awarded first prize for a collection of Gladioli, making a very bright exhibit, Grand Rouge, Formosa, Althea, Atlas, Ruth, Tersa, Ella, Oriental (grand), Eunice, and Rossini being especially well shown. Messrs. Harkness & Sons, Bedale, were second.

Mr. J. Walker, Thame, carried off the blue ribbon for forty-eight Show and Fancy Dahlias with a very even set. The best blooms were Shirley Hibberd, T. W. Girdlestone, Joseph Ashby, Victor, Harry Keith, Harry Walton, and Wm. Keith. Mr. S. Mortimer, Farnham, followed with a very bright stand, but visibly weaker, while Messrs. Keynes, Williams, Salisbury, were third. Mr. S. Mortimer was well ahead for thirty-six blooms, distinct, showing John Hickling, Perfection, Mrs. Mortimer, Florence Tranter, and Jas. Huntley in fine style. Mr. J. Walker proved to be a capital second with a good variety of colours. Mr. F. W. Seale, Sevenoaks, third. A very strong competition came ont in the class for twenty-four distinct varieties, Mr. G. Humphries, Chippenham, securing first honours with very even blooms, Mr. T. J. West, Brentwood, being dangerously close; Mr. J. R. Tranter, Henley-on-Thames, third.

The section devoted to the popular Cactus varieties proved, as on former occasions, to be an unusually good one. Messrs. J. Burrell & Co., Cambridge, were the victors for eighteen bunches. The stand was remarkably fresh and well provided with colours. The best bunches were Mrs. Wilson Noble, Casilda, Cycle, Mrs. A. Beck, Falka, and Starfish. Messrs. Keynes, Williams and Co., Salisbury, took second honours with smaller blooms, though they were very bright and fresh, containing many seedlings of high merit. Alfred Vasey, Britannia, Fusilier, Arachne, Fireman, and Mary Service were the strongest bunches. Mr. C. Turner, Slough, was third, being very little in arrear of the former winners. The honours for twelve bunches Cactus Dahlias were keenly contested, the class making a very fine exhibit. Mr. T. J. West, Brentwood, secured the premier honours, Fusilier, True Friend, Eileen Palissier, Island Queen, and Oaklands being especially good. Mr. Jas. Stredwick, St. Leonards, came second with a very creditable display, while Mr. G. Humphries was placed third.

The Pompon classes proved very popular with exhibitors, and a strong display was the result. Messrs. Keynes, Williams, & Co. were first, showing a fine even lot with plenty of variety; Mr. Chas. Turner second, Mr. Seale third. In the classes provided for single Dahlias the falling off so discernible at the Palace was equally apparent here, there being but two entries for twelve bunches, distinct, Mr. E. F. Such being placed first for a very fine exhibit.

Mr. H. J. Jones, Ryecroft Nursery, Lewisham, had one of his well-known groups of early flowering Chrysanthemums and Begonias, artistically arranged with Palms, Ferns, foliage Begonias, and Grasses. The Chrysanthemums were well grown, and comprised Emily Silsbury, the well-known white; Madame Desgrange, G. Wermig, and Machet White; the Begonias, both double and single, fully maintaining the reputation of the firm (silver-gilt medal). From Mr. John Green of Dereham came an attractive exhibit of Cactus and Pompon Dahlias. Mrs. Wilson Noble, Beatrice, Crimson King, Mrs. Francis Fell, Sunshine, Fusilier, Norfolk Hero, Endymion, and Royal George were most showy in the former section, while Dolly Keith, Nerissa, Douglas, Bacchus, and Lady Blanche were most conspicuous in the latter (silver-gilt medal).

A fine exhibit of early flowering Chrysanthemums was staged by Mr. W. Wells, Earlswood Nurseries, Redhill. The bunches of Madame Marie Masse, Rose Wells, Flora, Longfellow, Harvest Home, and Louis Lemaire were very fine. Gigantic blooms of Madame Gustave Henry were also staged, showing that the good opinion of this variety formed last season has not been misplaced (silver medal). Mr. E. G. Reid, Reid's Nursery, Beckenham Hill, exhibited an attractive group of Cannas (bronze medal). Messrs. H. Cannell & Sons staged a very showy group of cut Chrysanthemums. The blooms were all fresh and bright, the new white sport from Gustave Grunerwald being very fine. Others most notable were Edith Syrat, Madame C. Perier, Mrs. Hawkins, Queen of Earlies, and Madame Carmens (silver medal).

Mr. Eric Such, Maidenhead, had a large exhibit of hardy plants and Dahlias very well arranged. Fruit was represented by a fine display from Messrs. S. Spooner & Sons, consisting principally of Apples and Pears; there were fine baskets of Grenadier, Lord Suffield, Councillor, Manx Codlin, Stone's, and Bismarck represented in the former section (silver-gilt medal). Mr. T. H. Witty, Nunhead Cemetery, exhibited a very fine exhibit of early-flowering Chrysanthemums beautifully arranged with Ferns (silver-gilt medal).

RONDELETIA ANOMALA.

Persons who are possessors of a warm glass structure in their gardens might advantageously grow one or two of these handsome plants, the Rondeletias. They are free-flowering and attractive, and cultivated without difficulty in a warm temperature. Fifty degrees at night in winter should be the lowest the plants are subjected to, and a few degrees higher would be better. One of the most beautiful species is R. anomala, which is, however, somewhat scarce. A spray is shown in the engraving. It was cut from a specimen suspended on the roof of an intermediate house, and the plant was bearing numerous clusters of rich coral red or deep scarlet flowers. It was grown in a shallow pot or pan; a compost of peat, light turfy loam and sand being found to suit it admirably.

THE YOUNG GARDENERS' DOMAIN.

Malmaison Carnations.

Although for market purposes these flowers do not fetch the fancy prices they did a few years ago they are still greatly admired by most people. The varieties I have had to deal with are the Pink, Blush White, Arthur Warocque, and Lady Middleton. For general purposes the Pink variety is the best to grow. It flowers freely, is of good size, and the scent is delightful. The Blush White variety merits next place. Arthur Warocque has smaller flowers, is very prolific, and the colour is also good. Lady Middleton is a striped variety, but I have never seen it worthy of extensive cultivation.

Fig. 35 – Rondeletia anomala.

Young plants carry the better flowers; but with a number of old plants a few blooms are to be had nearly all the year round. For young stock layering ought to be commenced as soon as the plants are out of flower. It is advisable to have the layers clear of green fly at this stage. If they are clean now they take far less keeping clean afterwards. They root readily in a cold frame, where they can be shaded and kept slightly moist till rooted. They are the better for a slight shade from bright sunshine. I think it advisable to leave the young plants in the bed till they can be lifted with large balls. They may be potted into 6-inch pots, in which they will flower. After potting they may again be placed in a frame on a bed of coal ashes to raise them near the glass.

By the latter end of September the plants ought to be growing freely, and should then be removed to their winter quarters. A cool house free from drip, with stages covered with ashes, is an ideal place for them. Provision ought to be made for both top and side air, also hot-water pipes provided, so that in dull weather a little heat may be turned on. The plants enjoy a little heat at any time during the winter with plenty of air. I have never seen syringing of the plants practised, and always found the reverse successful. The ash stage has a tendency to keep the air about the plants cool and fresh. Soil for these plants ought to be of the simplest. Good fibrous loam and rough sea sand, two-thirds of the bulk being loam, with a little bonemeal or other standard fertiliser, are all that is necessary. A dusting of soot over the drainage helps to keep away worms. The pots ought to be well drained, and in potting the soil must be made firm.

The most particular point, however, in successful cultivation is in the

watering, which ought to be done very carefully. The soil should always be on the dry side, and during the winter the pots ought to ring clearly before water is given.

As the growth advances the plants ought to be repotted some time before the flower buds are developed. The very small buds take no harm, and the fresh soil at the roots puts new life into the young growths. The best plants, with most strong shoots, should be selected, preference being given to those with shoots near the base of the stem, as a long-stemmed Carnation is unsightly. During the summer months a cold, airy frame suits the plants well. Green fly is one of the worst enemies of Carnations. Fumigating occasionally keeps the insects in check. Tobacco powder dusted into the points of the growths answers very well, but some persons object to seeing it about the shoots. I have had the good fortune to have had very little to do with disease, so have nothing to say about it.

Malmaison Carnations, like most choice plants, require care and attention to grow them well, but when seen in the best condition are a credit to the cultivator and afford pleasure to all.—S., JUNIOR.

CULTURE OF THE GRAPE VINE.

(*Continued from page* 227.)

FOR early forcing small lean-to houses facing south are generally preferred, having both top and bottom ventilators. Sufficient piping should be provided in order that the required temperature may be maintained without the pipes being unduly heated. This refers to all vineries, as when the pipes are highly heated weakly growths and red spider are the result.

We were told in the *Journal of Horticulture* for July 23rd, 1891, "A house requiring a temperature of 65° during winter will need 1 foot of 4-inch piping to every 17½ cubic feet of air." If this were taken as a guide we should not be far off the mark, as the article is by an eminent authority. For succession houses, which are generally larger, either lean-to or three-quarter span-roofed structures are the best. For late Grapes span-roofed houses running north and south are the most serviceable. If possible these latter should have a lantern ventilation. Much care and trouble are taken off one's mind when Lady Downe's Grapes are stoning, if the necessary chink of air can with safety be left on the house all night. With older structures, having sliding ventilators, these have to be closed. In these cases an extra half hour in bed by the duty man often means ruin of the bunches by scalding, and in some cases costs the young man his berth.

In making Vine borders it must be taken into consideration for what purposes the Grapes are intended, whether for early or late use. If for early use the excavation for holding the compost need not be so large as for midseason or late Grapes. A border of from 5 to 6 feet inside the house, allowing the same space outside, will be quite sufficient for early forcing; while for later houses, 9 feet inside, and from 9 to 12 feet outside, will be found serviceable distances. The depth of the early border should be 2 feet, or at most 2 feet 6 inches, while 3 feet, or 3 feet 6 inches, is advisable for the later ones. The sides of the excavation should be bricked in cement the depth of the border both inside and outside the house. This will keep the roots from rambling, and under proper control. The bottom of the space must be concreted, having a slope to the drain. On the concrete small draining pipes are placed at intervals of from 8 to 10 feet, connecting with main drains running the whole length of the border. These, in their turn, must connect with a drain so made that all superfluous water may be carried away. For the drainage proper half brickbats or good sized clinkers placed on the concrete to a depth of 9 inches, with smaller pieces on the top, making a depth in all of from 15 to 18 inches, will be found a lasting provision if the drainage is protected with turves. The compost and planting must be deferred to a further article.—SEMPER.

(To be continued.)

HARDY FRUIT GARDEN.

Hints on Gathering and Storing Fruit.—*Cleansing the Fruit Room.*—In order that fruit may keep well, ripen satisfactorily, and be of good flavour, one of the conditions of success is that, when stored, the surroundings ought to be clean and sweet. Previous to gathering fruit in quantity, therefore, the receptacles in which it is finally placed, or rooms where it is stored on shelves, must have a good cleansing. Damp, dirt, cobwebs and dust are inimical to the preservation of fruit for an extended period. Scrub down all woodwork with soap, soda, and hot water, paying special attention to drawers and the interstices of latticed shelves. Walls, whether of brick, stone, or wood, may be whitewashed with fresh lime. Deal also with the floor. The structure ought to be thoroughly dry before any fruit is introduced.

When to Gather Fruit.—It requires good judgment to select fruit which is quite right for gathering. Few varieties of Apples and Pears require to hang on the trees until perfectly ripe. The majority should be picked at such time as is indicated by the brown or dark colour of the pips, or the ease with which the fruits are detached from the spurs when raised to an horizontal position. If on doing this they do not easily separate from the spurs, the fruits may be allowed to hang some time longer. It is probable they will improve in size and flavour, and will keep better when picked. Many varieties of Apples and Pears are liable to shrivel if gathered too soon. The best time to gather is when the fruit is dry and cool.

How to Gather Fruit.—The right time being selected for gathering, handle each specimen carefully, placing in single layers in a basket lined with soft material. Bruising the cells of the fruit underneath the skin causes decay to set in, preventing the fruit keeping. Similar care must be exercised in moving the fruit from the baskets to the drawers or shelves. Handle as little as possible.

Storing Fruit.—Place the fruit in single layers on clean white paper. If not stored in a proper fruit room on shelves or in drawers, boxes or detached drawers will answer well, placing one receptacle on the top of the other. It is requisite that the fruit when stored be kept cool and dark. If possible keep each variety separate, as there is a difference in the time of ripening. Some of the earliest Pears do not require much time in ripening. They will finish within a short time after being gathered and placed in a comparatively cool room. Others need a little assistance in finishing by introducing them into a slightly higher temperature for a brief period. Store Apples separately from Pears. Examine the fruit frequently, seeing that no decayed specimens are allowed to remain, for they speedily contaminate others.

Outdoor Vines.—Vines on walls or trellises require a little attention in regulating the growths, so as to expose the bunches of fruit to the light. Black varieties, however, are best for some shade of foliage, as they colour better than when exposed to unobstructed sunshine. On the other hand, white varieties need more sunshine to colour and ripen satisfactorily. The principal pruning consists in the removal of superfluous lateral growth, shortening it back so that the main growths are not crowded or shaded. Laterals bearing the bunches will need well supporting with ties, disposing them in a regular way, for with the weight of the fruit they are liable to break loose. If the soil lacks moisture the crop will be assisted by affording a liberal supply of water to the roots.

Watering Wall Trees.—Wall trees need considerable quantities of moisture at the roots during the early part of autumn. The demands of the fruit and the development of the summer growths abstract in many cases almost all the moisture from the soil. This leaves an insufficient amount to build up and perfect the buds, even after the crop of fruit has ceased to require more. The lack of moisture causes a check, with the result that red spider attacks the foliage, especially of Peaches and Nectarines, Apricots and Cherries. When the trees have been cleared of fruit an examination may be made of the borders. If they are very dry, afford clear water copiously, but to others fairly moist liquid manure may be applied. Syringe freely as an antidote to red spider. In bad cases employ also insecticide.

Strawberry Planting.—Further breadths of Strawberries may be planted now. Select well prepared ground that has been deeply cultivated and liberally manured. Strong plants of some of the best varieties should be planted, including Royal Sovereign, President, British Queen, Sir Joseph Paxton, Noble, Lord Suffield, and others. The plants must have abundance of roots if the object is to secure a crop of fruit the next season. Those established earlier yield the best crops the first season, but there is still a probability, if exceptionally good plants are inserted, that useful crops will result.

FRUIT FORCING.

Peaches and Nectarines.—*Early Forced Trees.*—The trees have now shed their leaves, and may be syringed with water at a temperature of 130°. It must not, however, be used carelessly; if too hot it will injure the trees; if lower in temperature it is useless as regards scale, red spider, thrips, and aphides. All the house should be subjected to the hot water treatment, as simple, effective, and safe for cleansing, on the score of both fungoid germs and insect pests. The trees being loosened from the trellis, and tied in small bundles for facilitating cleansing operations, wash the woodwork with a brush and disinfectant soap, reaching every angle and crevice. Limewash the walls, and, if required, paint the wood and wirework. Pruning will be a light affair, merely thinning the shoots where crowded or too weak for carrying fine fruits, no shortening being necessary except for the production of shoots for extension and furnishing the trees with bearing wood. Remove the loose surface soil down to the roots, and supply an inch or two, not more, depth of fresh loam, containing about a fourth of well decayed manure and about 7 lbs. of raw bone superphosphate and 3½ lbs. of double sulphate of potash and magnesia to each cartload. Avoid mulchings of manure at this time, they exclude air. If the roof lights have been removed they need not be replaced until the time arrives for starting the trees. Where the lights are fixed admit air to the fullest extent constantly.

Early Forced Trees in Pots.—The trees must, if not already done, be top-dressed, but it is best done before the leaves have fallen, as fresh roots are pushed at once, and this makes a difference in the setting. Roots outside the pots should be cut off, and some soil removed all round the inside of the pots about two-thirds down, supplying fresh compost there and over the roots. Give a good watering, and plunge the pots in ashes level with the rims in an open but sheltered situation till forcing time. From Alexander, Early Louise, Hale's Early, and Stirling Castle Peaches, Cardinal and Early Rivers Nectarines excellent crops may be

had very early. The pot plan is an excellent one, as it gives early dishes without having occasion to force planted-out trees at so early a period.

Second Early Forced Trees.—The trees are commencing to shed their leaves, and the lights having been removed at the end of August, the buds are well plumped and not over-matured, as occurs under fixed roofs, especially with such varieties as Early York and Noblesse. The removal of the roof lights sometimes prevents the buds falling if taken in time, but the chief cause is imperfect formation of the floral organs in embryo, and nothing will rectify that serious defect. When the leaves are all down treat the house and trees the same in every respect as the earliest house.

Succession Houses.—Any trees that have a tendency to over-luxuriance should, as soon as the wood is sufficiently firm, have a trench taken out one-third the distance from the stem the trees extend on the trellis, and quite down to the drainage, so as to detach all roots, and this may be left open for a fortnight; then the soil may be removed down to the roots, and picked from amongst them with a fork, laying in the roots in fresh material, good loam, rather stiff, being best, with about a sixth of old mortar rubbish. With a good watering, the roots will soon grow freely in the fresh material, and the fruits invariably set well afterwards. In removing the soil care must be taken not to disturb the roots so as to cause the sudden collapse of the foliage. Defer root-pruning in other cases, and also lifting, until the leaves give indications of falling. The first plan is more especially necessary with young trees, the taking out of the trench being very effectual in assisting the wood to ripen thoroughly, but the method is more applicable to older trees strong in growth or not satisfactory in ripening the wood and in cropping, whilst weakly trees should have the roots carefully brought nearer the surface, and fresh soil given in order to secure a more nourishing medium.

Late Houses.—Late Peaches are remarkable for size and beauty, and if given due supplies of water and nourishment during the swelling period are excellent in flavour. When kept too warm and dry the fruit is apt to be deficient in juice, or mealy. A free circulation of air is necessary, utilising sun heat if the fruit is backward, as with ventilation in the early part of the day the temperature may rise to 85° or 90°, which is of infinitely more value than fire heat at a later period. Afford the trees sufficient water at the roots to prevent the foliage becoming limp, but a rather drier condition is advisable when the fruit is ripening. Keep the wood thin, stop any growing shoot to about 15 inches, and all laterals closely to one joint as growth is made.

Vines.—*Young Vines.*—Give every encouragement towards keeping the foliage clean, removing all laterals so far as can be done without starting the pruning buds, as growth produced after this period is of comparatively little value, and maintain a warm well-ventilated atmosphere until the canes are ripe. The ripening of the wood may be accelerated by keeping the house rather close in the day, so as to secure a temperature of 85° or 90° from sun heat, opening the ventilators at night. Any supernumeraries intended to fruit next season should have the laterals cut away to the principal buds, leaving, however, an outlet for any excess of sap by a few laterals at the top of the cane, and be careful not to injure the principal leaves.

Late Houses of Hamburghs.—The Grapes which embrace the thin-skinned varieties generally, not Muscats, are well advanced in colour and ripening. A gentle warmth in the hot-water pipes is necessary so as to admit a free circulation of air and to maintain the temperature at 60° to 65° at night and 70° to 75° by day, as a little artificial heat during the day materially benefits in allowing free ventilation and making the most of sun heat. Hamburghs finish better under a good spread of foliage, and retain the colour longer, but it is well not to encourage lateral growth now; at the same time, the tendency to shanking is accelerated by large reductions of foliage, and equally so by sudden fluctuations of temperature. A little air may be admitted at the top and bottom until the Grapes are ripe. If there is any deficiency of moisture in the borders it will be better to give a supply of water now than to delay it until a later period, covering with a little dry material to prevent damp rising. Outside borders will, in most instances, be sufficiently moist; if not, they must be watered, and unless the weather becomes wet they need not be covered at present; but spare lights may be used in case of heavy rains, as a saturated state of the soil certainly does not favour the Grapes hanging in good condition. Over-dryness, on the other hand, causes the berries to shrivel.

Late Houses.—Muscats, especially Muscat of Alexandria and other white varieties, colour best with the foliage rather thin; indeed, the leaves may be tied aside, as it is necessary the Grapes have abundance of light and air. Other late Grapes still require fire heat, as they are late this season, accompanied with a free circulation of air, continuing it until they are thoroughly finished. Keep the night temperature at 65° to 70°, with a fall of 5° through the night, and turn the heat on in good time in the morning so as to allow an increase of ventilation and the temperature to be raised to 70° to 75°, so as to secure for the Grapes a long ripening day, the temperature being kept at 80° to 85° from sun, and with a free circulation of air 90° to 95°. The heat should be kept up by reducing the ventilation with the declining sun, and the temperature allowed to gradually decline at night, only keeping warmth in the pipes to allow the top and bottom ventilators to be left open to a slight extent so as to insure a circulation of air, and prevent the deposition of moisture on the berries during the night. Do not allow the border, especially inside, to become dry. A temperature of 50° to 55° is necessary for keeping Muscat Grapes in good condition after they are ripe, and other houses of late thick-skinned Grapes will require a similar temperature for the benefit of the Vines.

THE BEE-KEEPER.

Marketing Honey.

The difficulty many bee-keepers have to contend with is the finding of a suitable market for their produce, where satisfactory prices may be obtained to enable them, taking one year with another, to have something left after paying all out-of-pocket expenses. Unfortunately the greatest sufferers are those who have only a few stocks of bees, while the bee-keeper who has a large apiary will often dispose of hundredweights of honey with little trouble. The reason is not far to seek. The man who has invested his capital in the undertaking must take steps to find out the best market for the particular goods he deals in, and when he has obtained a good customer supply him with a good article.

The days of big prices are gone, but probably owing to so many unfavourable seasons there has been little change in the price of honey during the past few years. There are doubtless hundredweights now sold where as many pounds were obtained a quarter of a century ago. It is always advisable to cultivate a local demand for honey, and it is surprising the quantity that may sometimes be distributed locally by making it known. Better prices may be obtained in this manner, there being less expense than when sending it long distances.

For retailing purposes I prefer the 1 lb. screw-top glass jars, and as they may be obtained from the English manufacturer at a reasonable price, these are better than the tie-over glass jars, the covers of which soon become discoloured when exposed to the dust and flies; and as dealers and consumers prefer the former, they cannot be too highly recommended. Honey, of good quality, when placed on the market in these packages, has a neat appearance, and if labelled with the producer's own label, it is a mark of genuineness, and a help to future sales.

Grading Honey.

There is a vast difference between samples of honey obtained from various sources; I will name a few of the most prominent. Honey obtained from fruit trees has a greenish tinge, and does not granulate so readily as some varieties. From field Beans, which usually follow, it is of good flavour, brown in colour, but rather coarse in the grain. This is more readily observed when granulation has taken place. Mustard produces a white honey of poor flavour, and which granulates readily, often before it has been stored many days. Next comes the cream of all honey, that obtained from the White Clover. It is of exquisite flavour, very light in colour, and when granulated fine in the grain. This is closely followed by that obtained from the Lime trees, which is of a bright golden colour, and good in flavour. In many districts bees have not an opportunity of working on the Limes, as in some parts of the country one may go for miles and not see a Lime tree. In other districts they are very plentiful; within a mile of my apiary there are hundreds of large trees which form a veritable paradise for the bees.

It is advisable to keep each sample of honey separate so far as is possible. This is not nearly so difficult as may appear at first sight, if the bees are worked on the doubling system. All that is necessary is each time it is extracted to keep it separate from what is obtained on the next occasion. This only refers to extracted honey; sections must be left to chance, as it matters but little whether it is mixed or not in the comb.

I do not advocate the system of mixing light and dark honey together with a view to improving the latter, as it would most certainly spoil the former. If kept separate each sample can then be disposed of on its merits. Or if required for home consumption it is interesting to observe the difference existing between the various samples of honey.

Packing Honey.

This is important, as it is useless obtaining a good sample of honey in quantity unless the producer knows how to pack his produce, whether in jars or sections, so that it may travel long distances without danger of being smashed in transit. For large quantities of run honey the patent self-opening tins answer admirably. It is not safe to send them by rail without being packed in boxes. If some wads of hay or straw are placed firmly between them they may be sent long distances without any danger of mishap. In packing run honey in 1 lb. glass jars it is an advantage if a box is divided with laths, so that squares are formed into which a jar is dropped. Boxes made to hold two dozen are a convenient size, and without dividing them with laths they will travel safely if a stout roll of paper is bound round each bottle and packed firmly, care being taken that they are well padded with hay round the sides, so that there is no chance of their shaking loose. They should be labelled "Glass, with care," and may be sent by goods train.—An English Bee-keeper.

TO CORRESPONDENTS

*** All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," 8, *Rose Hill Road, Wandsworth, London, S.W.*, and *not* to Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Trimming Strawberry Plants (*Strawberry*).—When cutting away the runners of Strawberry plants in the ordinary way after fruiting, it is desirable to leave the perfectly healthy foliage of the old plants untouched, but no injurious effect is caused by cutting away the decayed, unhealthy, or imperfect bottom leaves. These are better removed, though not ruthlessly torn off in a manner we have often seen, but which is not likely to occur under your thoughtful supervision.

Membership of the Royal Horticultural Society (*W. H., Natal*).—Anyone interested in horticulture may become a Fellow of the Royal Horticultural Society. It is necessary to be proposed by a Fellow and to be seconded by another. The benefits that accrue to Fellows are numerous, amongst the chief of which are admissions to all the shows of the Society at the Drill Hall or elsewhere; to send seeds, bulbs, or plants to Chiswick for trial; to a share in the distribution of plants, and most important of all, in your case, to copies of the Journals of Royal Horticultural Society as published. These contain the papers that have been read at meetings, and are always interesting and instructive. There may be other benefits that you may secure for a guinea annual subscription, but these will suffice to give you a rough idea. We trust you will soon become a F.R.H.S., as it would be well if every gardener and horticulturist were one.

Watering Cattleyas (*F. W. D. R.*). — Water should be withheld gradually from these plants, beginning to do so as soon as the pseudo-bulbs are fully developed and display signs of ripening, and finally given only sufficiently often to keep the pseudo-bulbs from shrivelling. How long water can be withheld depends largely upon the house in which the plants are grown and the atmospheric conditions maintained as regards moisture. Simultaneously with a diminished supply of water at the roots and moisture in the atmosphere more light and air should be admitted to the plants. The Oncidiums you mention are only of slow growth; they do not under the best systems of culture appear to increase materially in size. We prefer to grow them in small baskets or pans, because they are less liable to suffer by an insufficient supply of water during the season of growth. If you place the plants in baskets do not take them off the blocks, but insert them into the baskets and fill in with fibry peat and charcoal in lumps. A little moss during the season of growth is also an advantage. We should advise you to leave them as they are until the spring. By no means should too much peat and moss be placed about the roots. These plants do best suspended moderately close to the glass.

Rose Cuttings (*Novice*).—If cuttings of half-ripened wood are taken off with the foliage attached, cut into lengths of two or three joints, and inserted in sandy soil before they flag, nearly every one of some kinds will root. The cuttings should be inserted in hand-lights placed in a shady position, and the top eye only left above the soil. After insertion a good watering should be given, and the hand-lights kept as airtight as possible. In about a month they will be well rooted, and may be carefully lifted and placed singly into 4-inch pots. If encouraged to grow under glass afterwards they will become well established before the winter, and will make excellent plants the following season, whether they are planted out or kept in pots. Such kinds as Gloire de Dijon, William Allen Richardson, and others of similar growth will, if well grown under glass the following season and placed as they need it into 8 and 10-inch pots, make good plants for forcing the following spring. Nearly all Tea Roses do well grown in pots, which is advisable if required for flowering under glass. Hybrid Perpetuals do better, and make greater progress if planted out in the spring in deeply dug and liberally manured ground. Many Teas and Hybrid Teas grown under glass the whole of the first season will give a bountiful supply of blooms in the autumn, when they are scarce outside, and often prove as valuable as if produced during the spring months.

Dicksonia antarctica (*A. F.*).—The plant may safely be moved, just as growth starts in the spring being a good time; but with care they may be successfully transplanted now. Plants in rockwork usually move with a compact mass of roots. With these placed in firm soil, kept duly moist, and the stem syringed, the plant will suffer little from the removal. We have found such plants improve after removal because of new roots having fresh compost to ramify in. We have also known plants cut off at any desired point above ground, and the stems well and firmly inserted in good soil, grow freely and satisfactorily.

Nutmeg (*One of the Domain*).—The note herewith and the accompanying illustration will probably give you all the information you require. The Nutmeg tree, Myristica moschata, syn. M. aromatica, is of considerable commercial importance, the kernel being indispensable for certain culinary purposes. It is also ornamental by its clusters of berries or fruit. The plant is not commonly met with in this country, and it is seldom grown except in botanical or officinal collections. Its cultivation, however, is not difficult. It thrives in a sandy loam and brisk heat, and

FIG. 36.—THE NUTMEG.

cuttings strike freely inserted in sand and placed in heat under a bell-glass. Of the Nutmeg tree Dr. Hogg has written as follows in his "Vegetable Kingdom":—"It is a native of the Moluccas and neighbouring islands, but is now cultivated in Java, Sumatra, Penang, the Isle of Bourbon, Mauritius, and other parts of the East, and in Cayenne, Martinique, and some of the West India islands. It attains the height of 30 feet, with a straight stem and a branching head. The leaves are oblong-oval, glossy on the upper surface and whitish beneath, and with an aromatic taste. The flowers are male and female on different trees, insignificant, and of a yellowish colour. The fruit is round or oval, about the size of a small Peach, with a smooth surface, green at first, but becoming yellow when ripe. The external covering, which may be called a husk, is thick and fleshy, containing an austere astringent juice; becoming dry by maturity, it opens in two valves, and discovers the nut covered with its aril, or mace, which is of a beautiful blood-red colour; beneath the mace is a brown shining shell, containing the kernel or Nutmeg. A plantation of Nutmeg trees is always made from seed, and it is not till the eighth or ninth year that the trees produce flowers. The sexes being on different trees, after the plants are two years old they are all headed down and grafted with scions taken from the female tree, reserving only one male stock for fecundation. The natives of the Moluccas gather the fruit by hand, strip off and reject the pulpy husk, detach the mace carefully, and expose it to the sun, which soon changes its beautiful blood-red colour to a light brown; it is then sprinkled with sea water to render it flexible and preserve it. The nuts are first sun-dried and then smoked, until the kernels rattle against the shell. This shell being removed, the kernels are dipped twice or thrice in lime water, laid in heaps for two or three days, wiped, and packed in bales or barrels. The unripe fruit of the Nutmeg is frequently preserved in sugar in the East, and before doing so it is necessary to deprive it of its acrid properties by soaking it in spirits."

Ants on Fruit Trees (*J. V. C.*).—Ants are best extirpated by poison, and the arsenical solution given below is efficacious. It is, however, extremely dangerous, and must be used with the utmost caution, as it is fatal to animal life. Place 1 oz. of ordinary arsenic in an old iron pot with a quart of water, and boil gently until it is reduced to about a pint, a little more rather than less, and to this liquid add half a pound of Demerara sugar, which will form a syrup. A little of this should be placed in saucers in the run, around the nests or haunts of the ants.

Eucomis punctata (*H. G. H.*).—This is a Cape of Good Hope bulbous plant, and was introduced to this country in 1783. It is easily cultivated, growing well in sound loam kept porous with crushed charcoal and pressed down firmly. After flowering the plants may be stood in a sunny position in the open air, giving adequate support for producing good foliage. Allowing seeds to ripen has a weakening tendency. Reduce the supply of water as the foliage ripens, and keep the soil dry, but not dust dry, in winter in a frame or cool house from which frost is excluded. In the spring abundance of light is needed by the growing plants, with adequate supplies of water for their support. We have had plants established in a narrow border in the open air for years next the south wall of a greenhouse. The bulbs are nearly a foot deep, and the border is mulched with manure on the approach of winter.

Pear Tree Blister Moth (*M. H.*).—The moth is minute and active, body satiny white, the wings having an orange ground spotted with black and other colours. It appears in May, and after pairing the female deposits her eggs at the end of that month or beginning of June, or later, in the tissue of the leaves on the upper surface, and from these issue the grubs or caterpillars, which feed beneath the epidermis, and produce dark brown blisters, corresponding to the spread of the caterpillar. Sometimes the blisters run together. When the caterpillar is full fed, which usually takes place in August or September, it eats its way out, and entering a crevice in the bark or a wall, where it will be snug and dry, it spins a white silken cocoon, very beautiful, and becomes a chrysalis inside, being quite small in itself, but easily recognisable by the silvery coating. From this it appears as the moth at the time before named.

Iris Leaves Diseased (*Inquirer*).—The leaves, carefully secured with wet moss at their cut ends, and in excellent condition for examination, but without a line in regard to them, were infested with spot fungus (Heterosporium typhorum) of the narrow-leaved club-rush (Typha angustifolia), the spots being very conspicuous, and exceedingly fine specimens of the parasite borne on the surface. The action of the fungus is wholly endophytic, the mycelial hyphæ traversing the tissues of the host, destroying the cells, so that the leaf or leaves attacked become yellow, afterwards brown or black, and dead. The spots clearly indicate where the fungus has entered the tissues by the germ-tube from the spore. To prevent these entering, spraying with sulphide of potassium, $\frac{1}{2}$ oz. to a gallon of water, has been found useful; but treatment with Bordeaux mixture only proves effective in bad cases. Cut off the worst infested leave and burn them, spraying the remainder of the plant or plants with either of the above or permanganate of potash, 1 oz. to a gallon of water.

Trapping Woodlice (*New Reader*).—1, Procure some old half-rotten boards, cut them into lengths of a foot to 18 inches, place on damp ground, and when fairly moist place one of these boards on the floor or other part of the greenhouse where woodlice frequent, sprinkle a little oatmeal on its upper surface, and place another board on the first. If the boards are warped so as to admit the animals between them the bait is perfect, if not introduce a small stone at one end of the boards between them. Examine these baits every morning, and either brush the captured crustaceans into a pail of hot water or cast them before fowls. These relish them immensely for breakfast. 2, Wrap a boiled Potato in a little hay loosely, put in a small flower-pot not very tightly, lay the pot on its side where the woodlice visit, and shake those which are caught out of the hay every morning into boiling water. Persevere with either of these methods, and you will soon make the woodlice scarce in your greenhouse.

Names of Fruits. — *Notice.* — We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. *In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing.* The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. *They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state.* (*Pomme*).—Possibly Cellini. (*J. A. A.*).—The Apple is Lady Henniker and the Pear Beurré d'Amanlis. (*L. C. R.*).—1, Yellow Magnum Bonum; 2, Pond's Seedling; 3, Grand Duke. (*L. E. H.*).—1, Devonshire Quarrenden; 2, Lady Sudeley; 3, Duchess of Oldenburg; 4, Miller's Seedling; 5, Worcester Pearmain; 6, unknown, probably a local seedling.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*A. B. C.*).—1, Begonia Evansiana; 2, Cratægus coccineus; 3, Berberis vulgaris. (*C. C. A.*).—1, Thunbergia alata; 2, Lonicera brachypoda aurea reticulata; 3, dead. (*Inquirer*).—1, Polygonum cuspidatum; 2, Matricaria inodora plenissima; 3, Aconitum napellus var.; 4, Achillea ptarmica fl.-pl. The Pearl; 5, Campanula glomerata; 6, Chrysanthemum indicum var. (*R. P., Braintree*).—Colutea arboreseens, or Bladder Senna, described in our issue of August 19th. (*W. W.*).—Kindly favour with fresh specimen, as we have not recognised the plant from the one sent.

TRADE CATALOGUES RECEIVED.

H. Cannell & Sons, Swanley.—*Bulbs and Strawberries.*
A. Cross & Sons, Ltd., Hope Street, Glasgow.—*Bulbs.*
Dobbie & Co., Rothesay.—*Bulbs, Plants, and Roses.*
Fotheringham & King, Whitesands, Dumfries.—*Bulbs.*
Kent & Brydon, Darlington.—*Bulbs and Plants.*
E. H. Krelage & Son, Haarlem, Holland.—*Bulbs.*
Laing & Mather, Kelso, N.B. *Carnations.*
J. R. Pearson & Sons, Chilwell, Notts.—*Bulbs.*
C. Petrick, Ghent.—*Palms and Azaleas.*
B. Soddy, Walworth Road, London.—*Bulbs.*
Charles Turner, Royal Nurseries, Slough.—*Roses, Fruit Trees, and Shrubs.*
R. Veitch & Son, Exeter.—*Bulbs.*

COVENT GARDEN MARKET.—SEPT. 8TH.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	1 0	to 3 0	Grapes, lb....	0 8	to 2 0
Cobs	24 0	0 0	Lemons, case	11 0	14 0
Filberts, 100 lbs.	22 6	0 0	St. Michael's Pines, each	3 0	8 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, ½ sieve	0 0	0 0	Onions, bushel	3 6	4 0
Beet, Red, doz	1 0	0 0	Parsley, doz. bnchs	2 0	3 0
Carrots, bunch	0 3	0 4	Parsnips, doz	1 0	0 0
Cauliflowers, doz.	2 0	3 0	Potatoes, cwt.	2 0	4 0
Celery, bundle	1 0	0 0	Salsafy, bundle	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Seakale, basket...	1 6	1 9
Cucumbers...	0 4	0 8	Scorzonera, bundle	1 6	0 0
Endive, doz.	1 3	1 6	Shallots, lb.	0 3	0 0
Herbs, bunch	0 3	0 0	Spinach, pad	0 0	0 0
Leeks, bunch	0 2	0 0	Sprouts, ½ sieve	1 6	1 9
Lettuce, doz.	1 3	0 0	Tomatoes, lb.	0 4	0 0
Mushrooms, lb.	0 6	0 8	Turnips, bunch	0 3	0 4

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var. doz. ...	6 0	to 36 0	Foliage plants, var., each	1 0	to 5 0
Aspidistra, doz....	18 0	36 0	Fuchsias, doz.	3 0	5 0
Aspidistra, specimen ...	5 0	10 6	Heliotropes, per doz. ...	3 0	5 0
Chrysanthemums, per doz.	6 0	9 0	Hydrangeas, doz.	8 0	10 0
,, ,, single plants	1 6	2 0	Lilium Harrisi, doz.... ...	12 0	18 0
Coleus, doz.	2 6	4 0	Lycopodiums, doz.	3 0	4 0
Dracæna, var., doz.	12 0	30 0	Marguerite Daisy, doz. ...	4 0	9 0
Dracæna, viridis, doz. ...	9 0	18 0	Miguonette, doz.	4 0	6 0
Euonymus, var., dozen ...	6 0	18 0	Myrtles, doz.	6 0	9 0
Evergreens, var., doz. ...	4 0	18 0	Palms, in var., each... ...	1 0	15 0
Ferns, var., doz.	4 0	18 0	,, specimens	21 0	63 0
Ferns, small, 100	4 0	6 0	Pelargoniums, Scarlet, doz.	2 0	4 0
Ficus elastica, each	1 0	7 0			

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms ...	2 0	to 4 0	Lilium longiflorum, 12 blooms	2 6	to 4 0
Asparagus Fern, bunch ...	1 0	2 6	Lily of the Valley, 12 sprays	1 0	2 0
Asters, per bunch	0 2	0 6	Marguerites, 12 bnchs. ...	2 0	3 0
Bouvardias, bunch	0 4	0 6	Maidenhair Fern, doz. bnchs.	4 0	8 0
Carnations, 12 blooms ...	1 0	3 0	Mignonette, doz. bnchs. ...	2 0	4 0
,, doz. bnchs. ...	3 0	6 0	Orchids, var. doz. blooms.	1 6	12 0
Chrysanthemums, 12 bnchs.	2 0	6 0	Pelargoniums, 12 bnchs. ...	4 0	6 0
,, ,, 12 blooms	0 6	2 6	Pyrethrum, doz. bnchs	1 6	4 0
Cornflower, doz. bnchs. ...	1 0	2 0	Roses (indoor), doz.... ...	0 6	1 0
Eucharis, doz.	2 0	3 0	,, Tea, white, doz. ...	1 0	2 0
Gardenias, doz....	2 0	4 0	,, Yellow, doz. (Niels)	1 6	4 0
Geranium, scarlet, doz. bnchs.	3 0	4 0	,, Red, doz. blooms ...	0 9	1 0
Gladioli, doz. bnchs. ...	4 0	8 0	,, Safrano (English) doz.	1 0	2 0
Lavender, doz. bnchs. ...	6 0	8 0	,, Pink, doz....	1 0	2 6
Lilium lancifolium, per bnch.	1 6	2 0	,, outdoor, doz. bnchs.	2 0	6 0
Lilium lancifolium, short, per 12 blooms	1 0	1 6	Smilax, bunch	1 6	2 6
			Tuberoses, 12 blooms ...	0 3	0 4

A RETROSPECT AND A FORECAST.

Harvest home marks an epoch in the farming year. To some it means the fruition of a year's work and hopes, as where the crops have been well secured in the purely corn-growing counties; to others, where mixed farming is the prevailing system, it is only the half-way house. Whilst as a corn grower the farmer who is fortunate may be happy in the possession of a well filled stackyard, with a promise of good prices for his produce; as a sheep-breeder and stock-raiser he may be filled with anxiety as to the health and well-being of his lambs, and the possibility, or otherwise, of wintering his cattle successfully with only half a crop of roots.

Looking back on the past six months, we can see much to be thankful for, and we think that, on the whole, things have not gone so badly with the average farmer. The great drawback was a bad start in the spring, for there was not sufficient frost during the winter to leave the soil in that finely pulverised condition, which is such an important factor in the successful growth of either Barley, Potatoes, or Turnips. Still, matters might have been worse, and rain in March helped in the reduction of much rough clod to a crumbly mould. May was dry, as for everything except pastures it should be; June was moist, which, again, was favourable to everything except haymaking, and not very harmful to that. There is an old saying "A dry May and a dripping June, can soon put everything in tune."

July, a very dry month, was splendid for the main crop of haymaking, and for the cereals generally, but too dry for Barley on burning soils. Early Turnips suffered as the drought came, just at the stage at which they required moisture. The second week of July is the time for a good douche for the maincrop Potatoes; by this we mean the later kinds. A thorough soaking then keeps them growing until there is no fear of a premature check, or of supertuberation. This year, unfortunately, Potatoes did not receive this watering until well into August, therefore on all but the coolest soils the recent rains have induced a second growth, partially spoiling the quality of the crop already in the ground, and though the bulk may be largely increased, the later growth will hardly have time to develop good sized tubers, whilst those of the first growth will have been spoiled by the second. The rain came too late for large quantities of Potatoes, and we hear of late varieties having suffered, beyond hope of resuscitation, through lack of moisture

A dry season generally means abundance of Potatoes of excellent quality; but since the extension of Potato growing in light land districts, much of the older Potato land has been put to other crops. It is this kind of land, deep and cool, that would have just suited the Potato this year, and might have done much to make up deficiencies elsewhere, on which the Potato crop is looked for almost in vain. In Cambridgeshire and South Lincoln, a typical Potato country, Potato fields are few and far between, Barley having been largely sown instead. Twenty years ago a dry season spelt cheap Potatoes. Have the times so changed that we may experience the very opposite? It is hard to believe, but quite possible that it may be so; at any rate, crops are almost universally light.

Pastures, which were poor and bare in May, improved greatly under the influence of a dripping June, and July came in with a good bite; but this soon disappeared, and by the beginning of August the fields were brown and short of herbage. Roast meat for animals we thoroughly believe in, but there must be a fair meal, and we fear that many animals have gone on short commons during the last month. Clover and Grass are now making rapid growth, but they are too washy to be of much value as food; they will be of more use to give sheep a change off Turnips, and to eke out the latter crop, than for use at the present time.

The Turnip crop is likely to be much below the average, in many fields the young plants having only just made an appearance; but hay, though not very large in bulk, is of excellent quality, and wonderfully well secured. We incline to the belief that winter keeping will not be over-plentiful, and that store stock will not see higher prices this side Candlemas.

WORK ON THE HOME FARM.

What wonderful weather we had last week! heavy rain to put fresh life into root crops and pastures, with high winds to dry the corn quickly and so prevent damage to the harvest in those districts that were so favoured. It is mostly safely housed in the South and Midlands, but we regret to hear that in the North and in Scotland much damage has been sustained.

Turnips were very much threatened with mildew, but the rain has removed all danger for the present, though a dry September might revive it. The crop varies very much, but will be much below the average as a whole.

Thatching is the work that presses in many localities now. There is great satisfaction in seeing the corn all safely stacked, but it is not really safe until it is properly thatched; and not until this operation is completed, can harvest be looked upon as finished.

Lambs are now requiring a variety of good mature food. Well-hearted Cabbage is an excellent diet for them at the present time, and Thousand-headed Kale the next best thing; either kind provides a capital education for Turnip eating when the Turnip shall be the only staple food available. The early sown Turnips have, this season, suffered much from the drought, and have finished growing prematurely; they are very woody, and we fear will not be very digestible.

Linseed cake proved excellent for lambs during the dry time, but now that they are obliged to take to more watery food something more astringent is advisable. The better class lamb-foods mixed and supplied by leading agricultural merchants are most of them suitable for use under present conditions, and if tried will be found satisfactory.

The rain has been sufficient to allow of the cultivation of Wheat stubbles, and those with any rubbish in them had better be moved at once, when the ground and weather are favourable for the work.

Twitchy stubbles are often kept *in statu quo* too long for the sake of a bit of sheep food; but it is bad policy, for the grazing can be worth little more than 5s. per acre, if as much, and the loss of the autumn fallow may cause an after expenditure much greater than that; besides, there is the risk of not getting the land properly cleaned at all.

OUR LETTER BOX.

Sheep (*Ignoramus*). - Unless you are anxious to get practical knowledge of sheep keeping, we should not advise you to buy lambs to graze in your very small meadow. To begin with, at the most you could only feed five, and it is absolutely necessary for lambs at this time of year to have a wide range if they are to be kept in health at all. They would be almost certain to go wrong, even with the addition of artificial food. Your best plan would be to let the eatage of your field to some neighbour. The present price of lambs is from £1 to 30s. As to danger from fly, no careful shepherd ever allows flies to get any hold on sheep he may have to manage; and if you have read former numbers of this Journal, you will observe we invariably insist on bought sheep being dipped at once, and carefully watched. Scab, alas! is prevalent at all times of the year.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

Date. 1897. August and September.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of soil at 1 foot.	In the Day. Shade Temperature. Max.	In the Day. Shade Temperature. Min.	In the Day. Radiation Temperature. In Sun.	In the Day. Radiation Temperature. On Grass.	Rain.
	Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Inchs.
Sunday .. . 29	29·926	62·3	58.4	S.	59·3	66·7	50·1	89·9	42·4	0·100
Monday 30	29·705	61·6	57·1	W.	59·9	71·6	56·5	122·8	53·6	0·253
Tuesday 31	29·709	62·2	55·1	W.	59·8	67·2	50·4	110·4	48·2	0·280
Wednesday 1	29 813	60·0	56·4	S.W.	58·9	62·1	51·4	87·8	47·2	0·500
Thursday .. 2	29·492	61·7	55·8	W.	58·6	67·4	53·4	115·0	51·2	0·533
Friday 3	29·831	51·4	48·9	W.	58·0	63 3	46·2	112·1	43·4	—
Saturday .. 4	29·965	52·2	46·7	W.	56·3	53·6	41·8	106·2	38 6	0·084
	29·777	59·2	54·1		58·8	65·3	50·4	106·3	46·4	1·750

REMARKS.

29th.—Dull and misty, with spots of rain at times and showers after 8.30 P.M.

30th.—Rain at 1 A.M.; generally sunny after 9 A.M., but spots of rain between 1 P.M. and 3 P.M

31st.—Rain in small hours; sunny morning; frequent heavy showers in afternoon, with thunder.

1st.—Overcast early; almost incessant rain from 11 A.M., and a storm rain at 8 P.M.

2nd.—Overcast with high wind in morning; rain from 0.30 P.M. to 2 P.M., then sunny and heavy rain with thunder and lightning from 5.30 P.M. to 7 P.M.

3rd.—Fine and sunny throughout.

4th.—Fair morning and shower at 11 A.M., sunny afternoon.

A very rough week with much rain, but bright sun at times. Temperature a little below the average.—G. J. Symons.

Journal of Horticulture.
THURSDAY, SEPTEMBER 16, 1897.

THE JOURNAL OF HORTICULTURE *can be obtained from the Office*, 171, *Fleet Street, London, post free for a Quarter*, 3*s.* 9*d.* Editorial Communications must be addressed to 8, Rose Hill Road, Wandsworth, S.W.

THE BULB SEASON.

BULBS seem to be in the ascendant just now. We see them in seedsmen's windows almost everywhere ; in sacks, in bags, in boxes, in the establishments of vendors large and small, in catalogues, and in advertisements. The demand must be enormous, and it may be presumed the supply is generally equal to it, though it is pretty well known to those intimate with the trade that some kinds and varieties are apt to run out long before the season is over. This suggests that those purchasers who order what they require the soonest have not only the best choice of varieties, but the best chances of securing the soundest samples, or in other words, the best value for money.

Of all the varied practices which people of various tastes and fancies indulge in, surely none is more fallacious than waiting till the spring before procuring bulbs that should be potted and planted in the autumn. Apart from the fact of the best going first in variety, substance, and quality, even the finest samples deteriorate by being kept unduly long out of the ground. This is the case with thousands every spring which are sold in general shops, on stalls in markets, and on barrows in the streets. These are in most cases culls and refuse, unsaleable to men who know what they are buying, and dear at almost any price.

Soft, shrunken, dried, and exhausted bulbs planted too late may or may not flower in a miserable sort of way once. Tens of thousands fail even in this, and those which have strength to produce puny stems and attenuated flowers perish in the attempt, or, in other words, they make no new bulbs for producing flowers in the following season and subsequent years. This is a most important matter where it is desired to establish them permanently in grass or other positions in gardens ; and even bulbs which are grown and flowered in pots, if reasonably treated afterwards for the production and maturation of good leaves, are in better condition for outdoor planting in the following autumn than is much of the cheap rubbish by which so many persons are deluded into buying late in the spring.

Most of those vendors of bulbs who have acquired well deserved reputations are those who purchase

early of the first grade samples, and then do all in their power to effect early sales; that is, during the autumn in preference to late in the spring, even though they may have the best of means for retardation, or retaining the vitality in the bulbs to the longest possible date. If purchasers, as a body, understood the nature of bulbs as well as experienced vendors do, they would take steps to procure what they intend to grow as soon as they can be supplied.

Both in private gardens and public parks, where displays of bulbs are so magnificent, the requisite kinds and quantities are ordered in the summer for delivery as soon as ready. If this were not so there could be no such massive Hyacinths, glorious beds of Tulips, bold, strong, and lasting Daffodils, as well as the lowlier kinds, such as the sparkling Winter Aconites, pearly Snowdrops, and Crocuses in varied hues, as are annually produced. It does not follow that because they are obtained early they are planted at once. The positions may not be at liberty for them, or beds and borders prepared. But beyond all question it is of enormous advantage to have the bulbs in hand ready for planting on occasions when the soil and weather are in the best condition for their reception.

The importance of having whatever may be needed in the way of bulbs, seeds, or any other garden requisites in advance of the time when they are wanted for planting, sowing, or using does not appear to be by any means fully recognised. The habit of not ordering things till they are actually wanted, and then chafing because they do not come by return of post or the first express train, is a thoroughly bad one. That vendors do all in their power to clear off orders quickly goes without saying, but they cannot do impossibilities. The delay, which might be so easily averted by earlier action, has in hundreds of instances resulted in lost opportunities, the consequence of adverse weather changes, for which there could be no subsequent compensation.

Not a penny is saved by such delays that are so prevalent in obtaining what might be had a month sooner. The amount is the same in both instances, but the results are very different, and all in favour of those of the early bird order. In nothing is this more apparent than in the provision of bulbs. Hundreds of practical men must know that this is so, but a large number of them cannot obtain just what they want and just when they like.

All who desire to have bulbs in the fullest strength and greatest beauty in their conservatories, homes, and gardens—bulbs, moreover, which under favourable conditions will increase and multiply, will do the best for themselves by looking out for supplies without any delay at this season. There is plenty of choice, and those who have stocks, by the excellence of which they are willing to be judged, take care to make the fact known, for the advantage of those who are as prudent as themselves in securing a share of the first and the best consignments of the year.

Naturally those particular kinds that are required for producing a supply of flowers as soon as they are obtainable are potted or planted the first—the planting in this case having reference to growing them in boxes for affording flowers as bright and pure as the heart could desire for cutting. If it could be ascertained how many millions of Roman Hyacinths, Duc Van Thol Tulips, and Daffodils are grown and flowered in boxes 3 inches deep and less, the bulbs packed closely together, the world would be startled. Such flowers are indispensable at and before Christmas, and for having them then, action must be taken now. The pure, fragrant, cheap Roman Hyacinths in particular should not be overlooked.

Than the various kinds of popular winter and spring flowering bulbs no plants are so easy to grow, none so certain to yield up their beauty, none which display their varied charms at a time when they are more welcome, none more accommodating or more adaptable for various positions. Surely they are worthy of the best chance that can be afforded them and of prominent attention. Bulbs have had a long rest now, so apparently have their admirers, who might if they would give of their experience as to selection, association, and cultivation for the production of sweetness and beauty in the purest forms during winter and spring.

NATURAL VERSUS ARTIFICIAL FERTILISERS.

BEING old enough to remember when artificial manures were almost unknown in gardens, sole reliance being placed on natural fertilisers, and having also tried most of the "artificials," a few remarks on the relative uses of the two in supplying food to useful crops may not be unacceptable to some of the numerous readers of the *Journal of Horticulture* at the present time.

By the term "natural" manure is meant any and every substance of a vegetable or animal nature not wholly resolved by decay and change into chemical elements or compounds with metals or non-metals, and to all intents and purposes unconverted into inorganic matter; or, in other words, still more or less organic in composition, and yielding nitrogen in the form of ammonia, the process of decomposition not being artificially accelerated, but effected by natural or cultural agency.

In contradistinction, an "artificial" fertiliser is prepared by various processes, chemical or otherwise. Thus, bones, half-inch and quarter-inch, and meal, dried blood, rape cake, fishmeal, Peruvian and Ichaboe guano, soot, and even beef and meat guanos; also the residue of bats and embalmed Egyptian cats, rank as artificial manures. All, however, including horns and hoofs, with every organic substance not chemically treated, but used in the natural form, contain organic matter, which in process of further decay evolve ammonia, and in presence of lime or some other base passes by the action of certain micro-organisms, feeding thereon—showing its organic nature—into nitr*ite* and finally into nitr*ate*.

In "natural" manure, in the form of both vegetable and animal substances, there exists a judicious blending of organic—nitrogenic—with the inorganic—mineral—elements, and on similar lines available as food as by the artificial process, only the course is much slower. No treatment adds to, but takes from, the organic substance. "Natural" bones contain from 3·57 to 4·11 per cent. of nitrogen; artificially dissolved bones contain from 1·66 to 2·86 of nitrogen; and mineral superphosphate not any nitrogen. A whole bone takes longer in decaying than a crushed one, half-inch bones last longer than quarter-inch, and bonemeal yields both ammonia and phosphoric acid more slowly than vitriolised bones, while these are less quickly acting than mineral superphosphate. The nearer, therefore, to the inorganic the speedier the action of the manure. Nitrogen, as ammonia in sulphate of ammonia, acts less promptly than nitrate in nitrate of potash and soda.

The "artificial" manure, therefore, means a supply of plant food in its quickly available form—inorganic, or finally reduced state. The natural fertiliser, on the other hand, implies a comparatively and relatively slow and, according to some, uncertain amount of nourishment. The process, however, as regards the conversion of organic matter, remains the same. It must pass by decay into ammonia, and even when combined with some base by chemical process, some time must elapse before the plant can take it into its system.

In fresh stable or farmyard manure the ammonia comes out first, then the potash, and afterwards the lime and phosphoric acid. The ammonia signifies growth—and potash, in less degree the same thing; lime represents the bonding together of the parts, quickened by sulphur; and the phosphate or phosphoric acid—the grand secret of Nature—the formation of the seed; with attendant magnesia, for perpetuation or continuance. It is all very simple, a plain thing merely requiring to be looked into and learned practically. No books, no lectures, no articles can teach practice. They can only point the way. It is a question of work, the old-fashioned gardener's principle of "proving all things." Then he knows what he is about, not before, as for instance:—

The cultivator from time immemorial had preference for thoroughly decayed manure, and for good practical reasons, and in recent years, thanks to the chemist, proved sound in principle. In fresh manure—I mean a blend of various excretæ—the organic matter stands at 246·0 parts per thousand, and the nitrogen at 4 5. Half-decayed, with its 192·0 of organic matter, affords 5·0 of nitrogen. The thoroughly rotted containing but 145·0 of organic substance, possesses 5·8 of nitrogen. The first is raw and unavailable, the second has both available nitrogen and potash, and the third has all things fit, or as near as they need be for the use of plants.

The old-fashioned gardener was not so far behind the times as some "up to date" present-day savants attempt to make out. Indeed, the blend of the old gardener—his prime, sweet, "natural" manure—forms the standard of the "artificial" fertiliser—food in available form to a considerable extent, with some in store, most in the "natural," very little in the "artificial." The first lasts beyond the first year and on to the fourth, if indeed it ever loses fertilising or mechanical value, but the latter disappears with and in the crop.

According, however, to present "advanced" ideas it must be wrong to employ a horse and cart to put on twelve to twenty loads of farmyard manure per acre when the same thing in crops can be had by using as many stones, easily carried on the strewer's back, thus

saving a horse and cart, and doing the thing in a third of the time by artificial manure. In brief, "natural" manures are characterised as delusions, and mark the era of retrogression in agriculture. It has not done so in horticulture, for it has produced "stuff" better and cheaper and lives. That is the crucial test of men and methods, and the weight of evidence conclusively shows that where there has been a departure from the old well-proved sound practices the cultivator has gone deeper into the slough of depression; on the other hand, where old methods have been adhered to, with a fair admixture of improved principles, the evil times have fallen with least malignity. The only really thriving cultivators are those who use "muck"—the workers near towns, who grasp the "fat of the land," sold off it in straw, hay, beef, mutton, pork, fowl, eggs, butter, and placed in the land again as town manure or native guano—old methods by which every description of crop is grown well.

If we go back half a century—say to before the advent of the Potato disease in 1844, and the famine produced by it, which I well remember, as a "bite" was then difficult to come at by a poor man—the gardener's sheet-anchor in the way of manure was thoroughly decayed stable refuse. Farmyard manure was held too precious to be trusted anywhere but on meadow or arable land. The gardener never let a forkful of stable manure pass over to the farm if he could keep it. Both farmer and gardener had "muck" on the "brain."

Beyond soot and Peruvian guano few gardeners employed "hand" manures. Wood ashes and lime were mainly used to keep ground pests in subjection and for correcting anything amiss in the land, especially the lime. Salt was used in a few gardens as a slug slayer, and manure for Brassicas. Rape dust, then much used by the farmers in the lower stretches of the land bordering on the Ouse for growing Potatoes and Wheat after them, was scarcely known in gardens any more than at the present time. Bones came to be used in various forms, but not until farmers had proved their value on grass land and gardeners finding that the turf from it gave splendid Grapes. Farmers used superphosphate, sulphates, and nitrates long before they were heard of in gardens. Of blood they knew more, for florists made rich composts of it, and grew flowers the like of which are not now seen.

Times changed, the farmers went downhill and the landlords followed; the dunghills became lower and smaller, while the manure tanks were oftener empty than full. All this is well known. Nothing flourished on land but the builder and general producer of all-round crops hugging the towns closely. The "artificial" was had recourse to as auxiliary of the "natural" manure. This, I hold, is the true principle of manuring. It is that of the market grower—"muck" is the foundation of success in growing anything. Foundation stuff will not grow crops profitably; but add manure to it, or organic matter, such as refuse fish, and then come satisfying results. Suppose we have nothing to do with "muck" in connection with foundation soil—inorganic substances, stones, sand, clay, stupid material—but use a few pounds of "artificial" manure, containing "as much available nutrient elements as a cartload of town manure"—what is the result? It comes out fine in pot experiments conducted with sterilised soil. What is the consequence in the bed, border, garden, field, farm, parish, county, country? It is a case of losing all along the line. —G. Abbey.

(To be continued.)

LILIUM AURATUM.

I think that this is probably the most disappointing of all Lilies; so difficult is it to grow that it is not in one garden in a hundred that it is established, and although tens of thousands of bulbs are imported every year, there is hardly anyone who can supply bulbs which have been growing three or four years in this country, and the case mentioned by Mr. Williamson on page 241 is a very exceptional one; in fact, so much is this difficulty recognised that gardeners mostly treat this Lily as an annual. I have grown it now for many years, and though I can grow most other Lilies, I can never succeed with this. It comes over in good and plump condition, and its growth for next year is already formed in the bulb; thus it flowers well the first year, but whether I grow it in pots or in the open the same result follows—the bulb either decays from the base or breaks up into a number of small bulbs, and the usefulness of the plant is gone. I have tried it in all kinds of soil and of situations, but have been equally unsuccessful in all; and now comes news which I fear will affect it still more.

Lily culture is a recognised industry in Japan, and, therefore, anything tending to its deterioration or extinction will be a calamity, and yet this we are threatened with. I had heard or seen nothing about it until I took up a recent issue of the "Standard," when I found it was honoured with a leading article. As a general rule the excursions of the daily Press into horticulture are more amusing than instructive, but when I saw in the article named that the "Kew Bulletin" was referred to as an authority for its statements, I felt that they were worthy of consideration and notice. The attention of the authorities was drawn to it by a London firm who had already lost heavily, for out of a consignment of 40,000 bulbs only one-tenth was unspoiled. Lilium speciosum, another Japanese Lily, fared still worse, for out of a consignment of 73,000 bulbs only 250 were fit for sale when they reached England. The disease then, or rather the fungus, Rhizopus necans, is of Japanese origin, and shows itself at the base of the bulb, spreading gradually upwards, that part becoming soft and discoloured, till the whole is affected, and at last is a soft pulp. Of course we do not know what the character of the culture is in Japan, but probably some of those like Mr. James H. Veitch, who have travelled there, may be able to tell us. We are all aware how injurious it is to most plants to grow them on the same piece of ground for successive years, and it may be that the Japanese have committed this mistake.

The fungus seems to have been unknown two years ago, and most probably the soil where the bulbs are grown is full of it. We all know how difficult it is to deal with the Potato disease, another form of fungus, and we might almost therefore despair of checking this, but the authorities at Kew have taken the matter in hand. They have subjected some bulbs sent to them by the London firm already alluded to to various experiments; they have found on cutting one of the diseased bulbs that it will in twenty-four hours be covered over the entire surface with a snow-white growth, which in three days is studded with numerous clusters of fruit, resembling to the naked eye miniature pins with black heads.

The object would be to destroy the vitality of the fungus, and it has been found that a solution of 1 per cent. of corrosive sublimate or of salicylic acid is fatal to the pest. But will the Japanese do this? They are generally tolerably "cute," and are not slow in taking any really good hints given to them, but we fear there will be a difficulty in getting the remedy applied. Is the ground where they are grown to be watered with this solution, or are the bulbs to be dipped into it and dried before being packed for exportation? It appears on the face of it as if the only efficient remedy would be for those who grow them in Japan to change their ground altogether, and I suppose most gardeners will be very chary of planting newly imported bulbs in their gardens. The fungus appears to take readily to other things, and especially to the Daffodil, which makes it the more dangerous.

Is it possible that the losses experienced by growers of this Lily have been due to some milder form of this fungus which does not seem to have appeared in its most virulent form until about two years ago? Other forms of auratum have been introduced, such as rubro-vittatum with its red band, and Virginale, pure white, and they partake of the same tendency as the typical form. Platyphyllum, which comes, I believe, from a different locality, was stated to be more robust than the older form, but I am not at all sure that this is the case. My bulbs of it this year, whether in pots or the open ground, have not done well, but then the season has been an exceptional one for some Lilies; but I shall be glad if this very fine flower, with its broad petals and good form, should prove more robust than the type.

There is another point on which Lilium auratum has been disappointing. Seeing how very prominent the reproductive organs are, and therefore how easily hybridised, it was thought that it would afford a good opportunity for passing into some of the other forms of Lilies; but with one exception no hybrids appear to have been raised, and this evidently partook of the defect which I have noticed in auratum, for it has never been distributed, and has, I believe, passed out of existence. This is much to be deplored, for it was a bold and striking flower, and would have been a great ornament to our gardens; indeed the hybridist does not seem to have done much to this tribe. Testaceum, or, as it used to be called, Isabellinum, is supposed to be a garden hybrid between Lilium candidum and L. chalcedonicum, and for its beautiful colour and complete hardiness has long been a favourite in our gardens. Of late years Mr. Powell of Southborough has raised a remarkable hybrid between Hansoni and dalmaticum. Never, perhaps, has the evidence of a true cross been more manifest than in this remarkable flower. Sometimes the effects of the cross fertilising are shown in the foliage, but very little of it is seen in the bloom; not so here, where the flower partakes equally of both parents.

There may be other hybrids, but I cannot call them to mind. The fine variety of speciosum called Melpomene is not a hybrid, but evidently a fine seedling variety. Just as we see in the imported bulbs of Lilium auratum, there is a great variation in the form and colour of the flower, and also in their time of blooming, some of them bearing very inferior flowers to others; it is also liable to what is called fasciation, that is, two or three stems joined together and quite flat. I have had specimens of this freak of Nature where upwards of thirty blooms have been crowded together; these are small, and the whole thing was valueless, except as a curiosity, and sure to die after the blooming season was over.—D., *Deal.*

CEPHALOTUS FOLLICULARIS.

It is not very often that this charming little Pitcher plant (fig. 36) is exhibited at our flower shows, and those staged by Mr. H. J. Chapman, gardener to R. I. Measures, Esq., Cambridge Lodge, Camberwell, attracted a considerable amount of attention at the last meeting in the Drill Hall. The plants were splendidly grown, beautifully pitchered, and a very great credit to their grower. One may go into establishment after establishment and never see a single specimen, large or small, and this perhaps makes them the more interesting. The following particulars will doubtless be useful to many readers of the *Journal of Horticulture*.

The plant is remarkable in several ways, for it is the only species of the genus, and is considered sufficiently distinct to constitute a natural order (allied to the Polygonums), and we thus have the peculiarity of a family composed of one individual. In the leaves, too, we find another singular feature—some are flat and elliptical in form, while others are converted into extremely neat and pretty little pitchers or ascidia, somewhat resembling those of Nepenthes, only much smaller. They are dark green with a purplish shading, and pink veins, and are furnished with

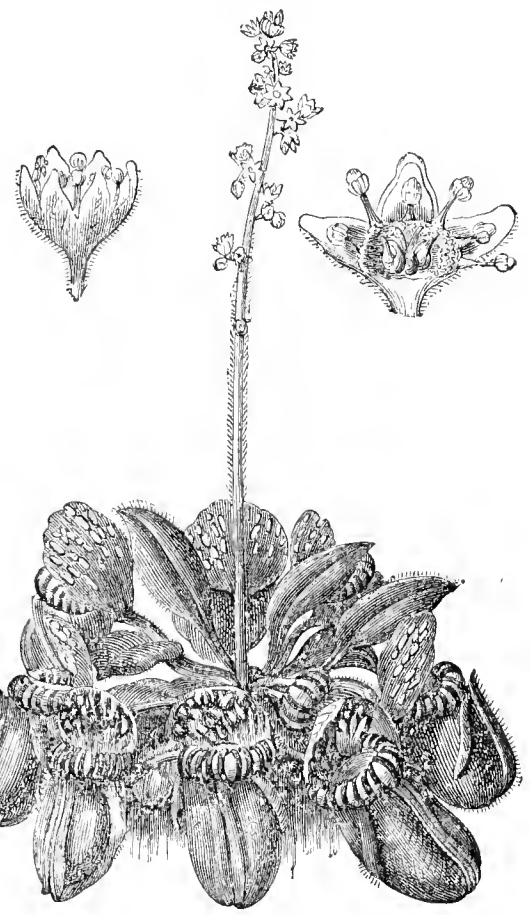

Fig. 36.—Cephalotus follicularis.

small lids, the mouth of the pitcher being bordered with a dark-coloured furrowed ring. This Cephalotus is an inhabitant of marshy land: it should therefore be provided with a soil composed of peat and live sphagnum moss, the pot being well drained and placed in a shallow pan containing water. If the plant is grown in a pan, that should be placed inside another larger one, the space being filled with fine Derbyshire spar and kept constantly moist. In either case a bell-glass should be placed over the plant. The best position and temperature is the cool end of the stove or Orchid house, where with careful attention in supplying the requisite moisture the plant will grow freely.

DECADENCE IN WALL TREE CULTURE.

From my own knowledge and observation I think it may safely be asserted that one great cause of the decadence in wall fruit culture lies in the fact, which may be summed up in a few words—want of time. This is deplored by your correspondents. Employers of gardeners require so much work doing in various departments, that wall trees often have to wait until favourable opportunities occur for attending to them. It is then frequently too late in the season for the operations in pruning and training, which ought to have been carried out sooner, to have the desired effect.

When trees fail to bear satisfactory crops a deficiency of interest is manifested in them, and the routine work they require to bring them into proper condition is allowed to be neglected. Wall trees are liable to fail in setting fruit, just as trees in the open are from untoward weather at a critical period, hence it is desirable to have the means at hand for protecting the blossoms, and thus insuring a crop. Trees in good health and vigour have a natural tendency to form an undue amount of wood, which would be checked by a reasonable crop of fruit. When the fruit is not there the trees expend their vigour in the development of wood; thus it is desirable that the attention in regulating this be given early and systematically, so that the checks may be steady but continuous.

The crowding of branches, large and small, is a too common source of failure in the culture of wall trees. If branches were at their formation disposed more thinly the management subsequently would be easier and the results considerably increased. Wall trees ought never to be planted in unsuitable positions. Trees are frequently to be seen struggling for existence where they have to compete for light and air with the branches of adjoining trees and shrubs. One or other has to suffer. Invariably it is the wall trees. It is not wise to tolerate inferior varieties of any fruits for cultivation against walls, but to ascertain which are the best and most prolific. Previous to planting the trees the best preparation possible should be accorded to the soil. Many failures may be traced to improperly prepared sites having a shallow, poor, and dry soil.

It is very tempting to the cultivator pushed for room to closely crop the fruit tree borders. This occasions constant digging, causing roots to descend deeply instead of remaining near the surface. Deep roots encourage strong growths, which, unfortunately, destroy the balance so essential to free and continued fruitfulness.

Wall trees are specially liable to insect invasions, though good and regular cultivation does much to prevent attacks. Cleanliness of the foliage must be maintained or the trees cannot long remain healthy. Insects prevent the leaves carrying out their important function of manufacturing material which shall be judiciously distributed in the growth of the tree whereby fruiting spurs or buds and wood growth are duly supplied. The most satisfactory wall trees are those which receive constant and unremitting attention. All operations connected with their culture and management must be carried out at the necessary periods, otherwise the whole tree may be thrown out of order to such an extent that double the time is essential for bringing it round again.

Some of the causes here indicated have brought wall tree culture into disrepute. There may be others, and among them the enormous attention given to Chrysanthemums. Growers of these can insure successful results only when all the details of culture are followed. No cultivator of the autumn flower would expect to achieve success if one or more of the essential operations were omitted. Fruit trees are more exacting than Chrysanthemums. It is only the best management in the most favourable positions that gives returns in a satisfactory manner.—E. D. S.

Yes, "Melton," the hounds are away. Let it be full cry. We may have some difficult country to traverse, and perhaps experience some nasty falls. It is the fortune of those who delight in the chase; but what matters so long as we are in at the death—the death of some popular fallacy?

My friend from the aristocratic hunting centre would fain know "how old I am!"—a pertinent question indeed, but one which has often been asked before. I seriously ask myself sometimes, when I notice how fast the grey hairs increase. They show that at least I am "no chicken," still I am not old enough to be an "old fogey." I rather rejoice in the fact, as also I do in the admission of the old hunter, "that fruit, generally speaking, is cultivated, so far as size and quality are concerned, as well as ever it was." That is surely the first consideration. The training of the trees is only a secondary one, and it speaks volumes for the zeal and knowledge of gardeners of the present day, that they have been able to do so well under difficulties such as the old generation knew nothing of.

Granted that gardeners as a body worked quite as hard half a century ago as they do now, but they certainly did not work more hours, indeed I question if at any previous time working overtime in gardens was so general as now, notwithstanding the fact that in all other trades and professions the hours of labour have been greatly shortened. True, gardeners would not mind even this, if by so doing they could keep their charges in the condition they would like, but as the matter stands at present, by reason of reduction of hands and increased demands in the way of decorations, the extra hours of labour are not spent in carrying out their "hobbies," but in doing work which does not benefit the garden proper, for the pleasant evening hours are largely taken up in dinner-table decorations, while true gardening must perforce be neglected.

Young men of the present day are as ready now as ever they were to work both early and late, and delight—as I have often done myself—in handling the Grape scissors at 4 A.M., and in doing the same kind of work in the evening till dark without a murmur; but when it is necessary for them to spend the same number of hours at extra unproductive work, while their growing crops are neglected, can they be expected to take such a delight in it? The truth is that when judged by present days, the "old gardeners" had a good time of it with their orderly time-for-everybody sort of life. Could they be here to-day in the rush of a modern gardener's life, it would—as "Old

Provincial" tritely puts it—be enough to "make their hair stand on end."

So "Melton" would have us believe that a tree trained in the perfect style of the old masters cost a good deal less than one managed on less methodical, though not less productive lines. I can quite understand anyone stating such nonsense, simply for the sake of argument or getting to know "how old" somebody is; but the only conclusion a practical man can arrive at in regard to such an assertion is that the writer knows little or nothing about training fruit trees. I have had charge of splendidly trained trees, not for one season only, but for many years; in fact, some of them were once written of in eulogistic terms by the guiding spirit of this journal. I always liked the work, and took a pride in it, but at the same time formed a strong conviction that in the majority of gardens the great amount of labour involved in the work might have been employed to better advantage in other directions, and that without lessening, but rather increasing, the supply of fruit.

To show the shrewd style of "Melton's" method of criticism, let me quote a sentence. He says, "In a certain ducal garden as much money was made from splendidly trained trees as "H. D." will ever obtain from an equal area of surface which trees are made to cover." It should have been much more, my friend, for, thanks to improved methods of culture, a given quantity of fine fruit will not command more than half the price it did the few years ago when I was in "button clothes!" This is, to a great extent, brought about by "rushing" the trees into bearing a year or two earlier than formerly. "Melton," in his abundance of years, seems to have a supreme contempt for time; to wait a few years more or less for crops is to him as nothing. But he attempts to go one better by asserting that fruit from young trees have more core and kernel than flesh. Such an assertion I defy anyone to prove, if the trees are fed in proportion to their crop. "Do not be vain," says my sporting critic, in a way that implies that, though vanity may be pardonable in so old a hand as "Melton," it is not so in one so young as "H. D."

Beautifully trained trees do not always mean poor crops, I admit, but I know also that many trees long noted for their splendid training but seldom have a decent crop; what little fruit is produced is generally at the extremity of the branches. Well-trained trees are satisfactory enough for a few years, but there comes a time when, if they are to be kept in a fruitful state, a change in management must be followed. Let us take for an example a horizontally trained Pear which has already covered its allotted space. After a few years it is by no means an uncommon occurrence for one or more of the branches to die, if not throughout the entire length, at least a good portion of it. It is then often a most difficult matter to get a good shoot to start at the right place to preserve the perfect form of the tree. Two or three years are perhaps wasted in the endeavour, and during all that time so much space is paying no toll. Now if, instead of waiting for the appearance of that rightly placed shoot, we train in side shoots from the nearest branches, the blank space is quickly covered with wood which will produce superior fruit, and the whole tree be greatly benefited by the freer style of training adopted. It is not "huddling and shuffling," mind you, but a style in which the side branches are given due space and disposed so as to cover it evenly. Thousands of handsome and well nigh barren trees which are supposed to adorn (?) the garden walls of this country would bear ten times the amount of fruit they do if every alternate main branch were cut away, and side shoots trained in to cover the space. Many of the foremost gardeners of present times have been shrewd enough to adopt the practice; they are not young men either, but have the common sense to adapt themselves to the spirit of the age.

"Melton" seems to fancy that a tree not trained in the old straight-as-a-gun-barrel fashion must be an ill-trained one; but this is a stupid doctrine, which has given the foreigner a fine chance to line his pockets by supplying us with fruit we ought to have produced ourselves. The real art of fruit-growing and of tree-training is to cover the wall as quickly as possible with healthy, evenly balanced branches which bear fruit from base to summit. I know plenty of labourers who can train trees beautifully, but if left to themselves precious little fruit would be grown, and—"whisper it softly"—I know others who have a perfect right to pose as gardeners, if a sound training has anything to do with the making of one, who do not cut a much better figure at fruit-growing than the intelligent labourer.

It is no new thing for the old in any calling to lament the decadence of the "modern men." Old actors have for generations declared that the "drama" is "going to the dogs," yet it still flourishes, and produces "stars" of the first magnitude. "Melton" is, I think, a bit of an actor as well as hunter, and the way he shows it, by breaking loose for a dash after the hounds, speaks well for his sense of dramatic effect. A grand old gardener in a sort of stage frenzy is a sight to remember—it awes some, amuses others, and instructs all. I fancy I can see the old gardener-hunter now, like a lion, chafing and lashing in his den. I'm off, to prepare for the roar of his music.—H. D.

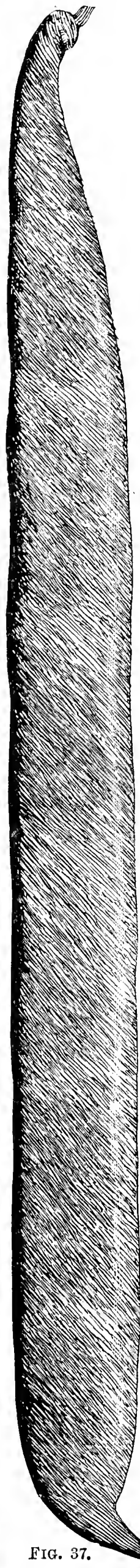

FIG. 37.

BEAN SUTTONS' PRIZEWINNER.

I SEND you a sample pod of this very fine Runner Bean, gathered by me in Forde Abbey Gardens, Chard, Somerset, recently, where Mr. J. Crook has some tall — indeed, grand rows, cropping profusely. It may be interesting to publish a tracing of it, as measurements in figures are not always regarded as exact. The outline will tell its own tale. We thus see in this straight handsome green, and yet very tender sample, how wonderfully Runner Beans have improved. —A. D.

[We were compelled to reduce the pod, which measured from the base of the stalk to the point of the curved tip exactly 12 inches.]

CAREX JAPONICA VARIEGATA.

BRITISH gardens now contain hosts of plants and Grasses which are grown for the elegance of their foliage, but few of them are more useful than this pretty Carex, which is peculiarly adapted for decorative work of many descriptions. Its perfect stage of development is reached when the sturdy pendulous flower spikes, borne on long footstalks, rise well above the grass-like foliage. Well-grown specimens in this stage are ideal ones for arranging in vases occupying prominent positions. A few of them disposed at well-chosen points in a boudoir produce a light graceful effect not easily surpassed. Smaller plants are of great value for dinner-table decoration, or for arranging in bowls, baskets, or larger groups of plants. Florists use the leaves largely in a cut state when dressing vases, or making wreaths and hand bouquets, as they may be included among the few good things which give to cut-flower arrangements the greatest possible amount of lightness in appearance.

The culture of this Carex is of the simplest description, but as is the case with all plants, whether easily grown or otherwise, a little extra attention is well repaid. During the summer months the plants thrive admirably in cool pits or frames which are closed early in the afternoon, with plenty of moisture to secure a genial temperature. During the autumn and winter I grow them in a stove temperature, in order to accelerate progress as much as possible, for no matter how large a stock of plants one has, the demand seems to keep pace with the supply. The present is a capital time to take in earnest the work of increasing the stock. Plants that are beginning to look shabby should be divided into small pieces having three or four stems. These, if placed in thumb pots—using a light sandy compost—will, if kept in a warm moist temperature, be ready for a shift in a couple of months. A good compost to use at this and subsequent pottings is one consisting of loam two parts, leaf soil, and one of well decayed manure, with a liberal amount of sharp sand added.

As soon as the roots are moving freely into the fresh soil abundance of water should be given, for it is surprising how rapidly growth progresses when the plants receive exactly the treatment they require in this respect. Let them get too dry at the roots, the points of the leaves quickly become brown, and in time "rusty" along their entire length. Whenever the weather is bright, either in summer or winter, I syringe the plants thoroughly once daily, and their appearance clearly indicates that they like the treatment.

Four and 5-inch pots are the sizes in which I find them the most useful, as they seldom grow more than 2 feet in height; but I intend to try some strong clumps in 7-inch pots, as such spread considerably, and will, I think, be

effective in large vases. Whenever the plants become shabby through constant use, after removing the disfigured leaves, they are placed in a warm pit for a few weeks till signs of young growths are visible. The whole stock is then dealt with, some of the plants being repotted, others divided and placed in smaller pots, then by keeping them in a warm moist pit they quickly grow into a useful size. If this course is persistently followed a good stock of serviceable plants is always at command.

When employing them for dinner table decoration, I turn the plants out of their pots, cut away the lower parts of the ball and bind fresh moss around the roots. I have often used the same plants at intervals for a period extending over three weeks. With regular attention in watering they seem to thrive as well in moss as when left in the pots, indeed the roots have a great liking for moss and interlace themselves among it. Noticing this some time ago I have since turned the knowledge to practical account in the following way: When the mossed plants have done duty for a time I press them into pots just as they are, and return them to their old quarters, where they grow quite as well as others repotted at the same time.—H. D.

CISSUS DISCOLOR.

Cissus discolor has long been esteemed for its attractively variegated foliage, and it may frequently be seen adorning the wall of a warm house or covering a trellis in a pot. Its culture is of the easiest, and it is so little fastidious as to soil that it will grow freely in any ordinary mixture and with no special attention. Those persons who have the unenviable peculiarity of spoiling every plant that comes into their possession, carrying the principle of how not to do it to such an extent as to make short work even of plants that no ordinary neglect nor mismanagement suffices to kill, have here a fitting subject on which to exhibit their maladroitness, as it would be a difficult matter to prevent it growing quite as well as, if not a great deal better than, the majority of stove plants.

The foliage of Cissus discolor is so beautiful that it may be employed most effectively for a great variety of decorative purposes, and this is a strong point in favour of the plant. Gardeners who grow it for the purpose indicated very frequently adopt the plan of encouraging a few plants to grow through the winter, while the others are resting and ripening, and when the latter are in growth subject the winter plants to a corresponding period of repose. There is no better plan for them to adopt, but the system opens out certain details of management that less experienced fellow workers might view with alarm, and it will be well to state at once that there is no necessity for them to risk venturing out of their depth with this very accommodating plant. It is much more easy to grow it well than to grow it badly, as I will show. The way to propagate the Cissus is by cuttings, and there is hardly a plant in the calendar, as I have proved over and over again, that may be more easily increased by this means. It will root more readily than a Chrysanthemum, and it may be inserted in much the same way. Prepare cuttings of the young shoots with three or four joints and insert them firmly in small pots just as you would a Chrysanthemum, using clean pots thoroughly drained, and filling them up with a very sandy mixture. In a warm house, and especially if kept close, it is astonishing how soon nice little plants will be had in this simple manner, and if the heat were not too dry I have no doubt they would root nearly as readily in a warm cupboard, although I have not tried them. These little plants can be repotted when they have rooted freely, and will then make rapid progress.

Three things our plant enjoys—plain substantial food in the way of soil, plenty of water (consequently the mould must be very porous and free), and a warm, genial atmosphere, such as would be comfortable for the grower as well as the plants. As to the first, do not wait expectantly for me to describe some special mixture. Perhaps a lesson will be learned by noting what the nurseryman had potted them in, but anyway, a free, fertile compost that will suit Fuchsias, "Geraniums," and Chrysanthemums, and which the local florist, were he consulted on the subject, would call "good potting stuff," will suit the Cissus admirably. If I could suggest any improvement at all it would be to add a little more sand. Plenty of crocks must be used over the large piece that covers the hole in the bottom of the pot, otherwise the care taken to provide a porous soil would be so much labour lost. When potted the plants must be examined frequently, and the soil never allowed to become dust dry, but copious supplies of water given before the mould is in such a condition as to fall through the fingers when rubbed. Syringing should also be practised several times a week when the plants are in free growth. Give them plain food and they will not languish for dainties; give them plenty of water and they will need no wine.

I have spoken of trellises. Vigorous plants in large pots may be trained to these if desired, and very handsome they look with their marbled foliage clothing them well; but there is another way of growing them, and that is to plant them out in the border to cover a wall, letting both root and top growth have free play. A well-covered wall gives a fine effect. Strong plants should be put in and adequate provision made for drainage. Whether grown in pots or planted out the plants, like Fuchsias, will want a winter rest, and like them they may be pruned, shaken out, and repotted when breaking into fresh growth in spring.

There are one or two other points in the cultivation of Cissus discolor which I had intended to refer to, but my allotted space is already more than full. One of them was loss of variegation in the leaves, but if I merely state that rich soil and unchecked sun heat both tend to this, the means of avoiding it will be obvious.—P.

DECORATIVE WORK.

(*Continued from page* 234.)

On the larger scale of our subject the primary features of church decoration in its different phases may claim attention. Harvest festivals now at hand generally necessitate the inclusion of a heterogeneous amount of material, comprising individual offerings, which under the circumstances must perforce be used. This, however, if playing a prominent part, is, so far as the principal points are concerned, but accessory to them. To enumerate the varieties of material so profusely furnished at this particular season is scarcely necessary; one needs only to mention the wild Hop, the Traveller's Joy Clematis, and the Virginian Creeper which, possibly, afford the most elegant drapery one could have for the purpose. Other things, also, of a similar nature suggest their suitability for being thus employed. The manner of employing them is, too, so generally obvious as to call for but little remark.

Stately Palms lend by their presence at all seasons a dignity peculiarly their own, and those who have seen twin specimens of Seaforthia elegans towering high over the chancel rails will agree as to the excellence of the effect obtained. One such pair was used repeatedly in a particular church, and a leaf of each plant caught together at the points by an invisible tie formed a perfect arch, whilst the tubs were concealed by an enveloping group of Ferns and Panicum plicatum. Difficulties often arise from the prohibition of nails or from its being impossible to use them amongst stonework. A little ingenuity will, however, find means to the end of securing wreaths or other greenery to the outlines where tying on is not available, but no doubt should remain as to the security of the method of fastening.

Apropos of the above, one occasion is recalled when a very uncomfortable half hour was spent whilst our worthy pastor preached his Christmas sermon, due to some little difference of opinion arising on the previous day over the securing of a substantial Holly wreath which outlined the top and base of the pulpit. This being a fine example of carved Caen stone, my plan of securing the wreaths did not meet with the approval of our good minister, who, being of a mechanical turn of mind, devised a plan whereby the whole decorative fabric depended upon one nail fixed in the flooring to which the principal strings were fastened. This was sufficient, provided the reverend foot did not dislodge it, and though declining all responsibility for the makeshift, the promise of "I'll be sure to keep clear of it," was not received without misgiving, unfortunately justified on the morrow, when warming to his discourse, the good man entangled his foot in the strings, and, to our mutual dismay, the wreaths collapsed. However, out of evil came good, and on the next occasion some light U-shaped steel springs were worked into the ends of the wreaths which clasped the stone edges and prevented any further catastrophe of the kind.

Such things are, however, rather a matter of detail than of that broader conception fitting a framework of tastefully arranged foliage, which, whilst bold in design on the one hand, is not, on the other, heavy enough to hide those architectural features it is only intended to adorn. Examples of this kind of work may even here miss the happy medium through an over-refinement of detail. For instance, a delicate construction composed of Wheat ears or Barley arranged as wreaths, and often used to ornament the front of a gallery of some considerable length, savours too much of those straw plaits our coachmen use for their stables, and are only produced with the same infinite care and labour. The end attained does not appear to justify the elaborate means employed when, at half the expense of time, more satisfaction is derived from what is bold and striking, if more roughly manufactured. This may not mean much in a way, unless from a gardener's point of view, which we are now considering; then, to a man troubled with many things it means a good deal.

Decorations of this kind may often have to remain for some considerable time, compared with the fleeting subjects of cut flowers and foliage, of which they largely consist. The contrast between the pristine freshness of the first day and that of a week or more is often strongly in evidence, but much of this is preventible by a little careful

selection of the most enduring material, as well as its treatment. Respecting cut bloom, with its complementary supply of foliage, apart from the groundwork composed of hardier things, ordinary pickle bottles or preserve jars filled with water are very useful; Dahlias, Gladiolus, Tritomas, and other showy things being retained to the limits of endurance. Groups of one kind only of such flowers give an admirable effect when the jars are effectually hidden in a cushion of fresh green moss, from which the flowers spring in a natural manner.

In this, and in other phases of bold decoration, a liberal introduction of the common Water Flag, Iris pseudo-acorus, will often more than compensate for shortcomings in other things. This I have frequently and largely used in various ways with the most satisfactory results. Carefully cut at the base, and piled in flat bundles to carry without breaking, it is admirable when naturally disposed in wet sand or vessels of water for use in various positions which suggest themselves, and notably as a background in windows to brighter things placed in front. In water or a moist medium the lasting properties of the Water Flag are unequalled. Those who have to cater specially for harvest festivals are happy in having a few pot Vines which grow as long in cane as possible, and, bearing some fair bunches with the bloom undisturbed, are the *beau ideal* of all that is graceful and appropriate at this season.

As an auxiliary to the usual evergreen decoration at Christmastide, the question of pot plants of tender type is often one of anxiety, if not of annoyance to the provider. Well berried Aucubas grown in small tubs are good substitutes for more delicate plants, but lately I saw a whole collection of Yews, Bay Laurels, common Laurels, and Aucubas, with a few of the more elegant Coniferæ solely grown, with some special treatment in the way of training and pruning, for this purpose, and the head gardener, who was also the principal decorator, said what a relief it was to him to have this contingent to draw upon. Amongst these particular noticeable were English Yews, one pair of which were trained and clipped into a perfect semblance of the Irish cross, some 10 feet high; another pair being obelisk-shaped, and equally perfect in their way. This matter is, however, one of taste, and one which it is neither desirable nor necessary to criticise here.

Permanent objects, such as above mentioned, are much handier, though the specimens be but small, if grown in tubs instead of pots, and with the tubs covered by virgin cork will never be unsightly when time or space do not admit of further dressing. Board borderings of 6 or 9 inches in depth, covered on the face with the cork, are well adapted as an edging for window-sills, to which they may be securely fixed with a small wedge. These also form an appropriate margin to groups placed on the floor, and once made and kept for the purpose facilitate matters considerably, requiring but some fresh green moss packed in the interstices of the cork upon each occasion of using. A few pots of Panicum variegatum gracefully hanging over this cork-covered margin have an extremely good effect.—DECORA.

(To be continued.)

WALKLEY FLORAL SOCIETY.

THE bi-monthly meeting of this Society was held on Friday, the 10th inst. Mr. J. Haigh, Vice-President, occupied the chair. A large number of excellent plants and flowers were staged. This Society, unlike many of its kind, never competes for money prizes. On each meeting night through the year there are special exhibits, but each member is at liberty to bring anything in the way of garden produce that he has suitable for exhibition. In lieu of money, marks are awarded to each exhibitor, six being the maximum number. At the end of the year, on the occasion of the Society's annual dinner, special prizes, given by members and friends, are awarded to those who have obtained the highest number of marks. The judges at each meeting are professional gardeners, whose duties are previously assigned to them, and printed on the programme.

After the usual routine business had been disposed of a paper on the Auricula by Mr. "Ben" Simonite was read. In his usual plain and clear style he dealt with the show varieties (his special *protegés*) in a most excellent manner, and fully explained his *modus operandi* of cultivating this old-fashioned flower. Although his gardens are situated in one of the most smoky districts of Sheffield, his success as an exhibitor testifies to his skill in Auricula culture. It is often said that no man is a prophet in his own county. "Ben," however, is an exception to this rule. He is an "oracle" in Sheffield in all things floricultural.

His reception at the meeting was a good one, and a hearty vote of thanks was given him for his valuable information, and for the ready manner in which he answered the numerous questions asked after the reading of the essay. With reference to the fertilising of the flowers and the gathering of the ripened seed, an amusing instance of the difference of opinion, or rather lack of knowledge, was mentioned. It occurred some years ago, when a firm in the Emerald Isle wrote to Mr. Simonite asking the price "per pound" of his best Auricula seed. Now when we consider that he has been cultivating the Auricula for about forty years, and has probably not in all that long experience saved more than 2 ozs. of good seed, it is, to say the least, very amusing.—J. H. S.

OUTDOOR PEACHES.

I HEREWITH send you a sample of our outdoor Peaches, of which we have a great quantity. I might say that these are by no means the best, as with cold storms and low temperature we have had this last fortnight, they are not so good as we had previously. We picked the first fruit on the 12th of July, and we had Peaches last year until 12th of October.—WM. CAMM, *Battle, Sussex.*

WHEN so much interesting discussion is going on in the columns of the Journal respecting the "decadence" of gardening, and of open air Peach culture in particular, I thought the time opportune to send you specimens, one taken from a south wall, the other from a west aspect. Many scores of such fruit adorn our trees at this moment. I will write a short note for the columns of the Journal in due course.—WM. WEST CHAPMAN, *Bedfordshire.*

[The fruits sent by our correspondents are excellent, as are specimens forwarded by Mr. G. R. Allis from trees against unprotected walls at Old Warden, Beds. Outdoor Peaches are grown in some gardens as well as ever they were, but not in half so many as was the case a generation ago. In thousands of gardens now the Peach supply is practically grown under glass.]

LESSONS OF THE SEASON—FLOWER BEDS.

IT is always interesting to note those plants in the flower garden which have done well during the past summer, also those which have answered moderately so, and those which have failed. The closing summer has been a fickle one. During May and June, while bedding out was going on the weather was most trying. The heat was intense, and for several weeks the plants made little progress. Fortunately, rain came, and the beds were soon filled and gay. Then came one of the most disastrous hailstorms ever experienced in my district, which simply stripped such things as Cannas, Zeas, and Begonias into shreds. For the moment we looked on with dismay, and thought that the case was a hopeless one. However, I knew this would not answer, as the garden would be expected to look gay and at its best by a certain date. I therefore set to work filling up gaps here with surplus plants, plunging more there, such as Lilies, Cannas, Fuchsias, or whatever came to hand which was bright, and this has taught me some valuable lessons, some of which I will relate.

Those plants which have stood the ordeal best are as follows:—

Fuchsias, of course, lost some of their flowers for the time being, but this was the only harm they received. Two beds of standard Fuchsias with clear stems 3 feet high, and heads as much through, in a carpet of Antirrhinum lutea, were much admired, and stood the storm well. The Fuchsia was the variety called "Charming," which is one of the best for bedding. The Antirrhinum is of the brightest yellow, and very compact in growth.

Another very attractive bed was planted with Sunray Fuchsia in a carpet of Blue Bell Viola, edged with Antennaria tomentosa. This also withstood the hailstorm well.

Two other large beds were filled with Lilium lancifolium roseum in a ground of Marigold Legion of Honour, edged with Lobelia compacta. This was much admired. Another large bed was planted with Lilium auratum, in a ground of Begonia Duchess of Edinburgh, edged with Dactylis glomerata variegata and Iresine Lindeni. The Liliums have done well, as have also the Begonias.

Other beds were filled with shapely plants of Fuchsia Charming in a carpet of Harrison's Musk with a band of dark blue Lobelia and margin of Antennaria. The Fuchsias are at present, and have been for some time past, one mass of flower.

Mixed Begonias are splendid. The flowers are large, bright, and plentiful. These, in a carpet of Harrison's Musk, are amongst the best of summer bedding plants. It is astonishing how rapidly these plants recovered from the battering they received from the hailstorm.

Reverting to the miscellaneous plants I was compelled to try in the garden, there are a few which have exceeded my expectations for their durability. Impatiens Sultani was placed out to fill up vacant places where the great storm broke down such plants as Ricinus, and at the present time is one mass of flower, very much better than is generally seen in warm houses.

Coleuses, such as the fine broad-leaved and highly coloured kinds, which are only as a rule grown under glass, were placed out, and these have done remarkably well, continuing to grow and colour superbly.

Trachelium cœruleum was also planted, and kept gay for a long time, and in a ground of Gazania splendens produced a fine display. I shall, all being well, plant a bed of this next year, and I have no doubt it will answer well.

Amongst plants which have not recovered so rapidly are Cannas; where these were in exposed places they still look shabby, and "Geraniums" were a long time before they recovered and became attractive.

The semperflorens type of Begonias are very useful bedding plants. I have planted those sent out two years since by Messrs. Sutton & Sons, and am well pleased with them. They are so easily grown from seed sown early in the year that they save an enormous amount of trouble in raising cuttings.—T. A., *Cirencester.*

[We are obliged to our correspondent, to whom the storm seems to have been something like a blessing in disguise. "Lessons of the Season" from other districts on flower gardening and other subjects, could scarcely fail in being interesting, suggestive, and useful.]

Notes & Gleanings

Events of the Week.—Metropolitan horticulturists at last have almost a week of rest before them, for the exception of the meeting of the Royal Horticultural Society on Tuesday, September 21st, we know of no show in the neighbourhood of London. No doubt there are one or two provincial fixtures, but of these we have had no notice.

—— Weather in London.—On the whole we have had a much finer week, for which the late holiday makers may be thankful. On Thursday morning some rain fell, and the remainder of the day was dull and heavy; but Friday was bright and quite warm. Saturday was a beautiful day, the sun shining gloriously, Sunday also being fine. Monday was quite warm at times, becoming cooler towards night. Tuesday opened dull. Wednesday was alternately bright and cloudy.

—— Are Roman Hyacinths Poisonous?—While recently potting some Roman Hyacinths I felt an unpleasant itching sensation about the arms and neck. I naturally rubbed the affected parts, and the itching became almost unbearable until I washed my face and arms, when it stopped almost immediately. I mentioned the incident to a gardener friend, who said he was always troubled in a like manner when potting Roman Hyacinths. It would be interesting to know if any of your readers have had similar experience, or can explain the reason, and name a preventive or remedy.—J. C., *Lancashire*.

—— Florilegium Haarlemense.—We have referred to this admirable publication in a previous issue, and have now received part 4, which was published so long ago as December, 1896. Unfortunately part 3 has not come to hand, so that our sequence of the plates will not be quite correct. The one before us contains Hyacinth Ida, beautifully reproduced; Tulips La Precieuse, Rose Gris de lin, Rosa Mundi, and Rose Luisante, all on one plate; and a third of Gladiolus Colvilli, with the white varieties. The publisher is Mr. de Erven Loosjes, Haarlem, from whom a free specimen copy may be had.

—— Scottish Horticultural Association.—At the monthly meeting held at 5, St. Andrew Square, Edinburgh, on Tuesday, 7th September, Mr. D. T. Fish delivered a lecture on "Fruit and Flowers in our Home and in our Life," to a large and attentive audience. The lecture falling on the eve of the Royal Caledonian Fruit and Flower Show brought to the meeting some English visitors. The lecturer referred to the beauty of spring with its benefits and effects on the human life, following with the fulness of summer and autumn, the season of plenty. The scientific element was admirably touched upon, and many practical hints were given. The Chairman, in proposing a vote of thanks, alluded to the labour, study, and loving energy embodied in the lecturer's references. Hearty thanks being accorded, exhibits commented on, and next meeting's subject announced, the gathering ended.—J. H. Dick.

—— Some Good Potatoes.—In the finely cultivated soil of Hackwood Park, where rotten leafage plays so important a part in the fertilisation of the ground, Potatoes always do well and give fine crops. When there a few days since roots of several varieties were kindly lifted for me to see. Amongst them were Sutton's Satisfaction, always a great crop of fine tubers, and their new midseason white kidney Reliance. This gives a remarkable root produce, the tubers being of true kidney shape, handsome, and even. It is a good break into the kidney section that is much needed. Others were a variety named Progress, which gives enormous tops and huge stems, but this season, whatever its general merits, has no tubers, being all root thongs. It is not one of the Reading varieties. A capital late variety is the Saxon, tubers white, pebble shaped, and handsome. The tops, however, show unmistakeable likeness to those of Magnum Bonum, although it is a very diverse variety. One of the finest is the northern "Up to Date," a Potato that will soon be universally grown as a late garden and field variety. The crop at Hackwood is a very heavy one, and not a tuber lifted showed any disease. The tubers are not unduly large, not one was ungainly, but had a flattish long shape, something like that of the old Lapstone, and very even. I noticed in the first root lifted, a capital sample, enough for two families' dinner. No wonder with such marvellous croppers, as we see in this and other varieties, that, in spite of disease, Potatoes are always so cheap. Clearly our Potatoes are up to date.—Expert.

—— Gardening Appointments.—Mr. W. P. Bound, for some time past with Messrs. F. Sander & Co., St. Albans, has been appointed head gardener to Mrs. Leveson-Gower, Bill Hill, Wokingham, Berks, and enters upon his duties on October 2nd. Mr. J. H. Cumming, formerly at St. Helen's, Booterstown, has been appointed head gardener to Lady Stewart, of Grantully Castle, Ballinluig, N.B.

—— Allamanda Williamsi.—There has long been blooming a grand plant of this delightful Allamanda at Hackwood Park, growing now in a 14-inch pot. The plant when I saw it a few days since was, from the pot, 5 feet in height and 6 feet through, being literally a mass of flower. It would have been hard for any other flowering plant to have beaten it in a specimen competition. Would that we could see more of such examples of plant culture as this at the Drill Hall, and not so much of commonplace stuff. This plant is but four years old; if in such fine form next year it should be worthy of pictorial illustration.—A. D.

—— Hybernation of Insects.—At the annual meeting of the American Association of Economic Entomologists Dr. R. O. Howard of the Department of Agriculture, Washington, District of Columbia, speaking of the effect of temperature upon the hybernation of injurious insects, stated that in experiments with such insects in cold storage a consecutive cold temperature proved favourable to successful hybernation, while a low temperature, followed by a high one with a return to a low one, almost always resulted in death to the insect. The conclusion is that a steadily cold winter with a temperature even much below the average will usually be followed by an abundance of insects, and that after a winter characterised by alternate cold and warm spells fewer individuals will survive.

—— Sheffield Chrysanthemum Society.—A general meeting of the Society was held on the 8th inst. for the transaction of its general business. Afterwards a paper on "Grape Culture," by Mr. W. H. Winter, was read. According to the programme of the Society, a paper entitled "Plant Life" should have been given, but owing to sickness Mr. Winter was unable to attend, so he sent the one on Grapes, which was read by one of the members. The exhibits for this month were Cactus Dahlias, and a capital display was staged. The flowers were good in size, shape, and colour, the latter being attractive by their variety and brilliancy. The awards were as follows:—Messrs. J. Needham, G. Smith, and C. Scott secured first, second, and third prizes in the professional section; and Messrs. W. Willgoose, W. H. Hinchliffe, and H. Broomhead first, second, and third prizes in the amateur section. Mr. J. Haigh presided over the meeting.

—— Splicing Grapes at the Late Crystal Palace Show.—I am sure the public and exhibitors generally are deeply indebted to Mr. Hudson for detecting and exposing the fraud at the above Show, but as an exhibitor I do not think this is sufficient. I consider that the name and address of the offender should have been given in justice to others, for of all the mean tricks connected with exhibiting I contend this ranks among the very worst, and should be fully exposed. Surely the innocent exhibitor would not mind the publication of his name, he himself knowing nothing about the splicing. But the clever young assistant—for clever he must be to deceive his master as well as the Judges on the first day of the Show—should certainly be taught better, or what will he develop into later on?—Observer. [The exhibitor has now an opportunity for declaring himself. Some of the best and cleverest men in the world have been the victims of deception from time to time.]

—— The Hemel Hempstead Horticultural Society.—A newspaper report has been sent to us of the thirty-eighth annual show of this Society. It was, we believe, started in a very small way by Henry Balderson, Esq., a diligent member of the Fruit Committee of the Royal Horticultural Society. We should not like to count the classes now, for the prize list fills three long columns of a newspaper. There appears to have been great competition in the floral, fruit, and vegetable departments, and especially in the allotments and cottagers' section. Agriculture and apiculture are represented, and the domestic arts encouraged, Mr. Balderson giving prizes for needlework, cooked Potatoes, and home-made bread. Great good must have been effected by the agency of the Society, though it has raised the price of bread. Observing the custom of the prizegiver in purchasing the best loaves, ways and means have been found by the enterprising competitors of making him pay 2s. each for them. However, he seems to regard it as one of the good deeds of "Heavenly" Hempstead, and looks well on the fare thus provided.

—— Supplement to the Index Kewensis.—We are glad to learn from the "Kew Bulletin" that M. Th. Durand and Mr. B. Daydon Jackson have made arrangements for printing their ten years' supplement to the "Index Kewensis," which will bring the work down to the end of the year 1895. It is hoped it may be issued during the present year.

—— Sharpe's Waltham French Runner Bean.—This may be fairly described as the most remarkable Bean in the Chiswick trials this year—not by the size of the pods, but for their wonderful profusion. The seeds are small and white, and the committee of inspection gave the variety commendatory marks for cooking as a Haricot. The pods could be literally gathered in handfuls.

—— Potatoes at Chiswick.—About eighty varieties of Potatoes have been tried at Chiswick this year. The early varieties were examined some time ago, the later last week. From the thirty-six varieties lifted in the presence of a committee ten were selected because of their excellent yields of shapely tubers, free from disease, for cooking. For three of these three marks of merit were unanimously awarded—namely, *Lidstone's Cardinal*, white, round, fine crop, and excellent quality; *Major Curtois* (provisional), full crop of uniform, pebble shaped, tapering tubers of superior quality, very distinct; and Horsford's Seedling, from Vermont, U.S.A., very productive, pebble shaped tubers of good quality. Sutton's Windsor Castle, handsome tubers, was also cooked, and the certificate granted in 1893 unanimously confirmed. Thus there is no deterioration in this valuable Potato.

—— Plums at Hackwood Park.—When a few days since looking along the walls at this place I could but think how wide of the mark it was for anyone to write about the decadence of wall fruit culture. Certainly I have seen no evidence of it anywhere. At Hackwood Plums are not only very extensively grown on walls, giving in good seasons splendid crops, but the trees are admirably trained. Better they could hardly be, and not on any horizontal system so recently advocated by Mr. A. H. Pearson, but on the old fan-shaped method. September 9th is rather late to find many good Plums out southwards, but on an east wall, Archduke, a noble late purple Plum, was in splendid condition, carrying a good crop. This is one of Mr. Rivers' finest introductions, without doubt, amongst Plums, and should be universally grown. Then on a north wall are six fine fan trees of the much decried Victoria, and these had all carried a capital crop. Two of the trees had been cleared, the other four being netted up and stripped as used. Mr. Bowerman will have these good up to the end of the month. These six trees run from two parts length of the north wall to the end or corner, and there is just beyond the corner on the west wall yet a seventh tree, also a good one. It is, however, a curious fact that this tree, whilst blooming well always, yet hardly sets a fruit. It seems inconceivable that, treated exactly alike, the mere change of aspect, and a sheltered position, too, should yet make so much difference. It is, however, worthy of notice Mr. Pearson deprecated the planting of so common a Plum as the Victoria on warm aspects. Here we see how finely it does on a north one.—A.

—— Tomato Varieties.—Those who, like myself, occasionally, as it were, get behind the scenes, hear some funny things from gardeners who get to learn of each other's doings as though by a species of freemasonry. Now were I disposed to be malicious, which by-the-by I am not, I could name a dozen diversely named Tomatoes in commerce that are so much alike, should I be permitted to gather but one selected fruit of each stock, to mix the seed, and raise the plants, I would defy all creation to tell me wherein any difference could be found. A gardener once found in a stock of an American variety one plant that showed excellence over the rest. He saved the seed, grew plants, and found he had got a stock of an improved variety. He gave some seed to a gardener friend, and he grew stock. Presently under diverse names the variety went from both gardens into commerce. A third gardener got stock of it, and grew it; then that stock got into commerce under a third name. He gave some seed to a fourth gardener, who also grew it, and not waiting longer to farther select it, sold his stock under yet another name to a fourth firm, and in another part of the kingdom the same stock appeared under a fifth name; indeed it would not be at all difficult to find many more. Now when we see these stocks, all first-class, I admit, and so far as I see in regard to cropping and beauty, as well as solidity of fruit, absolutely unbeatable, can it be wondered that I view the introduction of so-called new varieties, not distinct, with grave doubt and suspicion? Anyone who may overhaul the Chiswick pot trials will see for themselves how marvellously like to others are so many of the so-called new ones sent there to be grown. Practically everybody now has everywhere first-class Tomatoes.—A. D.

—— The Black Locust.—This a common tree in West Virginia where it is found in groves of considerable extent, and is of great commercial value on land that has been allowed to revert to forest after having been used for agricultural purposes. In the late annual report of the West Virginia Experiment Station, Professor Corbett says that it is considered of greater value than any native wood for use as driving blocks in sinking points for driven wells. The timber closely approaches in value that of Red Cedar for posts, and this, together with its rapid reproduction, constitutes its greatest value, although it is much sought for by the manufacturers of hubs for carriage wheels and for other uses where great resistance to pressure is required. According to an American contemporary, the largest Black Locust in West Virginia stands near the entrance of an abandoned coal mine, not far from Morgantown. It is a remarkable tree, being fully 4 feet in trunk diameter, and at least 100 feet in height.

—— "He Could not Stop when he had Finished!"—What a suggestive sentence in the leading article of last week! "It is a very common fault." It is, indeed; and a most exasperating one. Who has not suffered under the speaker who has said all he has to say, and still goes droning on? It is the fault of most long sermons. "Half is," how often! "better than the whole." Indeed, there is a pregnant Greek proverb to this effect. Those who have to reprove often evidence this. The first few words would have a good effect, but they work themselves up, and then other people also, until at last warning is often given, and a most unnecessary parting takes place. *Ne quid nimis* is a valuable Latin rule. Don't overdo it! Was well—would be better—took physic and died. But the text I have taken applies most of all to oratory. The ten minute rule is excellent, and still better the five. Best of all that advice, the quintessence of common sense, to every budding orator—"Have something to say, say it, and sit down."—A. C.

—— Wolverhampton Gardeners' Club.—A lecture on "Orchids" was given to the members of the Wolverhampton Gardeners' Horticultural Club on the 7th inst. by Mr. H. A. Burberry. He dealt with his subject from the standpoint of gardeners having restricted glass accommodation, and dwelt chiefly on those kinds requiring little warmth so far as the hot-water apparatus is concerned. The culture of cool Orchids was fully and extensively referred to, dividing them into two classes—viz., the warmer and the cooler, the former differing from the latter only because more sun heat should be given during summer when they are growing, and fully describing the conditions which should prevail in each department. He enumerated a large number of the most popular and showy species which would grow and flourish under similar conditions. This at once made the frequently difficult and troublesome matters of culture and selections easy to understand. The cordial manner in which the vote of thanks was proclaimed by those present sufficed to show how greatly Mr. Burberry's remarks had been appreciated.

—— The Fruit-flavour Competitions.—Not being at the Drill Hall on the 7th, I looked for the Journal with exceeding interest on my return from the West of England to see your report of the Apple and Pear flavour competition on the above date, and was immensely pleased to find that a recommendation of mine to Mr. Mayne of Bicton Gardens, Devon, when there on the afternoon of the 6th, to send up a good sample of his Kerry Pippin, had so satisfactory a result. When looking over the fruit in company with Mr. J. Crook I at once said, "Why not send half a dozen up to the Drill Hall for the flavour competition on the next day?" My suggestion was at once acted upon, and the fruit packed and sent off by post. I think, so far as I remember, that was the first lot of this really delicious early dessert Apple that had come before the judges. Let Irish readers take notice that Irish Peach was placed first on the 24th of August, and now Kerry Pippin is placed first on September 6th. If any miserable Saxon should now contemptuously ask, "What good thing ever came out of Ireland?" the Celt can reply, "Yes; two of the best early dessert Apples in cultivation." A very beautiful early Apple, Miller's Seedling, shown recently at Reading by Mr. Turton of Maiden Erlegh and Mr. Fyfe of Lockinge, having lemon skin with pretty red stripes on it, has so far not yet found its way to the Drill Hall competitions. It is, however, too late this season. And here I cannot help drawing attention to the ignorance which prevails in the country amongst gardeners with respect to this flavour competition. I have done all I can to make it known, but hardly a gardener seems to be aware of it. Some leaflets of the competition seem to be needful, and widely distributed. At present the limited competition and practically the same exhibitors is making it rather ridiculous.—D.

—— London Allotments.—In the report for the current year the Small Holdings Committee of the London Council expresses regret that another year has passed without any amendment of the law being made enabling the Council to provide allotments in the county of London. The Council, says a contemporary, is still unable to let small plots of land direct to tenants, but is forced to proceed under the Small Holdings Act, 1892, under the provisions of which the Council lets land in plots of over one acre in extent to tenants who, by the terms of their agreements, cultivate a specified portion of their holdings and sublet the remainder to approved sub-tenants. The Council is desirous of acquiring legal power to let plots of less than one acre direct to persons who wish to take them. The Local Government Board has issued orders conferring the powers of a parish council in regard to hiring land for allotments upon the vestries of Charlton and Greenwich, but the Committee is of opinion that the power only to hire land scarcely meets the case, and they hold that local authorities should be authorised to purchase land for the purpose. During the past year the working of the Council's allotments at Millmeads and East Ham, and of the small holdings at Perry Rise, Plumstead, and West Norwood, has been in all respects satisfactory. Additional land at Plumstead, about 13 acres in extent, has been taken on a tenancy for seven years at a yearly rental of £33 9s. The Council has also taken a tenancy of about 11 acres of land in Shooter's Hill Road, Blackheath, at £25 a year. The Council's officers have endeavoured to find suitable land in other localities, "but," says the Committee, "experience proves that landowners are not often willing to grant leases on terms which the Council could be recommended to accept." The number of cultivators on the existing allotments and small holdings of the Council is 588.

—— Kei-Apple as a Hedge Plant.—This shrubby South African plant (Aberia Craffra, *Harv. & Sond.*), a member of the Annatto order (Bixineæ), is armed with long spines, and makes excellent hedges. It is evergreen and bears fruit like small yellowish Apples. When fresh they are acid and used as a pickle; when ripe they make a good jam. The "Waikato Times" of New Zealand recommends the Kei-Apple as a hedge plant in the following terms:—"One is always hearing complaints nowadays of the paucity of good plants suitable for hedge purposes. This harbours the Wheat rust or the leech, but dies out in patches, while another would be admirable were the cows not so fond of it. This being so, the thanks of the community are due to Mr. A. Tempest of Parnell for his enterprise in introducing and propagating the 'Kei-Apple.' It was Sir George Grey, I believe, who first mentioned the shrub, which grows wild upon the Karoo, or sandy plains of South Africa, and it certainly seems a perfect hedge plant. It is a sturdy, stocky, short-jointed grower, an evergreen, and with thorns which grow to 6 inches long and over, and a 'perfect terror to evil doers,' be they beasts or human beings. As an added advantage, the female plants (they are of both sexes) fruit heavily, bearing in great quantity yellow Plum-shaped fruit, the size of a Green Gage, which are both pleasant eating, and make an exquisite jam. Orchardists would do well to bear this shrub in mind when planting." To this the following note is added in the "Agricultural Journal" of the Cape of Good Hope:—"It will be noticed that a wrong part of the country is stated to be the native habitat of this plant, but all the good qualities as a hedge plant are perfectly true. In some old books of travels in South Africa it is stated that on the eastern coast there were 'wild Apricots;' were these Kei-Apples? Few people like to eat the fruit raw, but the jam is first-rate. A proportion of Kei-Apple with Tomato would make a good jam."—("Kew Bulletin.")

TOMATOES FOR WINTER AND SPRING.

As Tomatoes have rapidly gained favour with nearly all classes of society my subject must be a popular one. It is generally admitted the taste for this esculent must be acquired, consequently the start should be made with perfectly ripened fruit; and later on, if this cannot be had, fruit of inferior quality, such, for instance, as that imported, will be relished. The recent advance in house culture has been principally made in medium-sized or small gardens, the owners of which have become very fond of Tomatoes, and are, besides, justly proud of their productions. Many of these have grown profitable crops during the summer and autumn, and, provided they can command sufficient heat, there is no reason why they should not grow them during the winter also. Ornamental and useful they will undoubtedly prove, and this cannot be said of the majority of the ordinary occupants of our houses during the winter months.

Cuttings may be rooted or seed may be sown at the present time for the winter and early spring crops. The former should be well-ripened top shoots, taken off about 6 inches in length, trimmed at the lowest joint, dibbled in thinly round the sides of well-drained 6-inch or 8-inch pots, and placed either in a warm frame or a hand-light in a heated house. They should be watered in and be kept moist, but not saturated, and should not be damped over the foliage; and if much moisture condenses on the glass, air should be admitted for a short time every morning in order to properly dry the glass and foliage. They require to be shaded from bright sunshine till rooted, after which the plants must be gradually exposed to sun and air. The cuttings to be preferred are the strong yet well-matured tops of plants grown under glass; and those to be avoided, as being liable to damp, are the gross shoots often formed on plants grown in the open. Light loamy soil is suitable for cuttings or seeds. The latter may be sown thinly either in pots or pans, and placed in heat till germinated, after which the plants require to be disposed near the glass to make them sturdy. Thin out where at all crowded, and when the rough leaves are fairly visible pot singly in 4-inch pots, or in pairs in 6-inch pots, sinking the stems up to the seed leaves. This will tend to keep them dwarf, and the buried stems rooting freely materially strengthen the plants.

Various methods of fruiting Tomatoes are adopted, these being, or ought to be, in accordance with the intended sites. We have fruited them singly in 11 and 12-inch pots, or in pairs in larger pots, in any rather flat common boxes available, and planted out in ridges of soil as we treat Cucumbers. They are grown on the front side and central stages, and staked, or in the two former positions tied to wires disposed across the roof or ends as the case may be. We have also utilised the back walls of forcing houses for the purpose. In each case the result has been most satisfactory, and what we can achieve is equally possible to others if they choose to make the attempt. As compost we prefer roughly broken turfy loam with a liberal addition of decayed manure, but it is possible to grow excellent crops of fruit or plants rooting in ordinary well-enriched garden soil. It should always be remembered the Tomato loves good living, and, no matter how planted, is benefited both by frequent supplies of liquid manure and occasional top-dressings of rich compost, the latter being quickly taken possession of by the roots. Those who are unable to procure farmyard liquid manure are advised to give artificial manure or guano a trial, using these at the strength recommended by the vendors.

Although our plan is to grow and fruit the young plants with single stems, rubbing out all side shoots as they form, and stopping beyond the second or third bunch of bloom, and allowing the leading shoot following to extend and fruit, this is not necessarily the only or best method; but as a rule heavy crops can be had in this way without unduly shading the other occupants of the house. Unless the house is devoted principally to them they should be disposed at least 2 feet apart; but if they are of primary importance and plenty of root room is provided they may be planted closer. If preferred fewer plants may be thus grown, these being disposed 2 feet apart, and second growths from the base may be laid in and fruited. It is also easy to fill a house with one or two plants much after the manner of trained Cucumbers. For this method plants that have been previously fruited in pots or boxes are available. These should have their balls slightly reduced, and be shifted either into larger boxes or small pits about 2 feet square and as much in depth, which may be formed with loose bricks, allowing room in both instances for top-dressings. When this reserved space is filled further top-dressings may be given if a rim is formed with slates or boards in the first instance, or more bricks in the other. Such plants, if kept thinned out and stopped occasionally beyond the bunches so as to gradually occupy the allotted space, prove very remunerative.

From the commencement in every case the plants should never be allowed to become dry at the roots, and should receive light airy positions as near the glass as possible. Syringing must be avoided, and at times when many flowers are expanding the fruit may fail to set unless the atmosphere of the house be kept rather dry. We grow a variety of fine-foliaged plants and Ferns under our Tomatoes, the temperature of the house ranging on most occasions from 55° to 60° by night to 60° to 65° by day, the ventilators being slightly opened for a short time towards the middle of every mild day. In this manner, and by attending closely to watering with tepid water varied with liquid manure, and top-dressing whenever exhaustion is apparent, that healthy growth may be maintained which may be relied upon for perfecting moderate crops throughout the winter and spring, or till such times as the house may be wanted for other purposes. We make three annual sowings; the first in January for plants to be fruited in pots during April, May, and June; the next in April for plants to be fruited in boxes in Peach and other somewhat cool houses during July, August, and September; and the last in August or early in September for the winter supply. Any fruits of the late autumn crop there may be unripe in October are cut and hung up in bunches in a warm house to ripen, and these and any we may cut green at the end of September from the few we have on the open walls and ripened similarly prove of service in maintaining the supply till the house-grown produce is fit to use. Tomatoes may also be ripened in boxes placed before the kitchen fire whenever convenient, or on a rack at a safe distance above the fire.

A difficulty is frequently experienced in setting good crops during the dull autumn and winter months even with notoriously free setters. Every care should be taken that the plants receive no check in any way, and by closely rubbing out all superfluous growth, the bunches of bloom will be encouraged to develop strongly. A drier atmosphere maintained and frequent smart taps given towards midday or about an hour after air has been given will distribute the pollen and insure a good set. If this fails the blooms may be lightly touched over with a camel's-hair brush. We invariably secure good sets; in fact find it necessary to thin out the bunches, as a constant if comparatively light supply is preferable to occasional gluts, which result if extra heavy crops are allowed to mature at one time.—W. E.

THE NATIONAL CHRYSANTHEMUM SOCIETY - THE DISQUALIFIED EXHIBITS.

THE recent disqualification must in a great measure be attributed to the ambiguous manner in which the schedule is framed. For several years past various classes were stated to be for "blooms of any *large flowering* variety or varieties," and what is understood to be such have been shown with success. This year it reads the same, but a footnote is inserted at the bottom of the amateur classes as follows:—"Only the varieties included under the head of early-flowering in the Society's Jubilee catalogue, 1896, can be exhibited in the foregoing classes." This apparently was overlooked or misinterpreted by the various exhibitors.

Among the early-flowering varieties given in the catalogue very few, if any, can be called large-flowering, neither do they bloom in September. The footnote should have distinctly stated that the *whole* of the varieties exhibited at this show should be as given in the catalogue. But is it advisable to attempt to encourage the cultivation of these small-flowering early varieties except it be in the natural or bush form?

If such stipulation is considered a wise one, then the selection must be compiled with more care than has been displayed in the Jubilee catalogue, for several of the finest and largest flowering varieties are omitted. Two in particular I would mention—viz., Queen of the Earlies and Barbara Forbes. These were sent out as early-flowering varieties in the spring of 1896, and were shown at several of the early meetings of the N.C.S. in the autumn previous.

The late Mr. W. Piercy, no mean authority, repeatedly expressed the opinion that Queen of the Earlies was the finest early white in existence. Two seasons ago it was pronounced by Mr. W. H. Lees, who then grew it, to be immensely superior to Madame C. Desgrange. Barbara Forbes received the first and only F.C.C. awarded by the N.C.S. throughout last September, yet, strange to relate, neither of these varieties is to be found in the early flowering list of the N.C.S., and for this reason were disqualified by the judges (to whom no blame can be attached) at the recent exhibition. That they were known to the Catalogue Committee is proved by the fact that they are not to be found in the general section.

It is worthy of remark that several varieties which have repeatedly been exhibited and catalogued by all the most important trade growers are omitted from the catalogue, whilst quite two-thirds of those catalogued have not, and never will be, listed by the English trade grower. Annie Heard, a single, and perhaps the prettiest and most graceful white we have, was certificated in 1895 by the N.C.S. and R.H.S., and a portion of the Committee of the former are the compilers of the catalogue, and yet it is not to be found in the list of selected varieties. If not worth inclusion in the list, why certificate it? What weight do the Catalogue Committee themselves place upon the certificates?—W. J. GODFREY.

FLOWERS FOR VASES.

THE highest philosophy leads to simplicity. What a time elapses before we recognise that fact. All Nature is essentially simple, and gardeners, as waiters on Nature and fellow workers with her, ought to study simplicity above all things. In nothing is this so true as in the arrangement of flowers. Some years ago we entered a cycle of vulgarity and ugliness in the floral decoration of dining tables. It is true that flowers, no matter how barbarously treated, always retain their individual beauty. That we cannot destroy, but we can and often do mar it, and at that time we certainly did reach the lowest level of decorative floral art, while the labour and time spent in filling and refilling receptacles of tin or other material was just so much time wasted. Happily, we have reached a period when Nature is more left to speak for herself. Without doubt we shall always have those who consider the labour and ingenuity spent on arranging flowers as some measure of their beauty, but a freer and healthier tone prevails generally. In fashionable bouquets for the hand this is especially noticcable, for while a large amount of artificiality is retained it is an artificiality of a more generous nature, individual blossoms being less crushed together, and the rarer ones brought so prominently forward as to show their beauty on every side.

Bouquet-making, however, is comparatively limited in extent, and does not appear to be growing as a feature of garden work. Room decoration with flowers, on the other hand, is spreading to an alarming extent, using that expression from a gardener's point of view, for the market grower and the middleman who disposes of his goods must look with lively satisfaction on the spreading downward tendency of this innocent and pleasure-giving taste, while all must cordially view the increasing love for flowers with appreciation. But from the gardener's look-out it becomes a question of much importance, as the prevailing tendency with all extra demands is to expect them to be met without any corresponding addition to the means for doing so. So it is in this case; summer and winter, spring and autumn, flowers are wanted, and the gardener is left to find them as best he may. I am afraid too many gardeners at the present day must think of the doings of Pharaoh the hardhearted when he ordered his Hebrew subjects to gather their own straw without lessening their tale of bricks, and apply the case to themselves. Certainly, it now-a-days requires much ingenuity to make ends meet.

I must return to my opening sentences and reiterate the fitness of simplicity. Too often very much more material is employed in vase-decoration than is required. To be orthodox we must have a border of Ferns and a complicated arrangement of blossom and greenery firmly packed so as to cover every particle of the space inside this Fern border. This is merely stereotyped conventionality, and it is wasteful. I see no reason why a vase may not be so arranged occasionally, or always if you like; but to fill half a dozen or a dozen glasses in one room in this fashion, and further to carry the same arrangement out in every occupied room in a house, is beyond good taste to say the very least. When we call to mind that these flower receptacles may be of all sizes and shapes—tall trumpets and flat wide-mouthed dishes, dainty little vessels with narrow openings, or classical pieces of various shapes—the system condemned becomes so much the worse. The vases gardeners are often called on to decorate are unsuitable, and so far it is difficult to carry out simple arrangements. I am also aware that the taste of their owners has to be studied, but outside these particular instances lies a vast field to work in with effect.

Considering the matter in a practical manner, I have at once to concede that no strict rule can be laid down to be followed with advantage. But I may be allowed to offer some hints, which I trust may be found not altogether unworthy of consideration. The first hint I would give is to consider that flowers do not grow in bunches. A bunch of flowers tied together is a reasonable mode of carrying these in the hand, but not necessarily the best way of showing off or enjoying their individual beauty. This brings me to hint that the shape and size of the receptacle should be studied. A large trumpet-shaped glass and a low, wide, and open dish require widely different treatment. The latter might at present be effectively and simply filled with flowering shoots of Pansies or Violas; or Sweet Peas, and Mignonette make a charming mixture; or going to more refined (?) material, we may employ double Ivy-leaf Pelargoniums, sprays of Heaths, Begonias, Lapagerias or Stephanotis, in each case using sufficient foliage of Pelargonium or Begonia or Sweet Peas for a setting without having to add Ferns. The idea is to have flowers charming in themselves, and so arranged as to show their beauty easily. Then if we take the tall trumpet we must decide on bold flowers at once, and, as in the case of the flat dish, a certain flatness of arrangement is called for, so in our tall glass any approach to flatness must be avoided. If you use single Dahlias, cut shoots with leaves, buds, and open blossom, and arrange as freely as the plant itself grows. If Gladioli be selected, cut with foliage attached, and let the spikes be fresh, young, and bold. And so on with any other flower chosen, let them always be massive if possible, and stand free of each other.

For medium-sized glasses a certain degree of airiness should prevail. Roses are not particularly "airy," but by cutting with long stems, keeping the foliage intact, and adding sprays of Jasmine on the common Clematis, lumpiness is easily avoided. Very suitable for such glasses are the Japanese Windflowers, which may either be used by themselves or intermixed with Marguerites, Oxeye Daisies, and Sweet Peas. The most charming of all flowers just now are Picotees and Carnations. These are much better arranged in smallish vases, first inserting in the water four or five healthy cuttings (foliage), and then adding a few long-stemmed shoots cut off just as they grow. For small glasses I think, as a rule, that fine single blooms are much the best an Eucharis backed with a spray of Maidenhair Fern, an open Gloire de Dijon with foliage and bud, a truss of double Ivy-leaf Pelargoniums with its own foliage, are examples of what I mean.

These are all flowers common at present that are mentioned, but the same remarks are applicable to flowers at all seasons. Notwithstanding the great variety of flowers we have to choose from, gardeners have restricted themselves to a few well-known kinds, and, unfortunately, have treated them all very much alike; no matter whether a flower grows in lowly fashion like a Pansy or on tall shoots like a Chrysanthemum, the blossom itself is snipped off with an almost unvarying length of stalk. This should not prevail. Colours of flowers are often badly selected for effect. Take the Chrysanthemum as an instance, and we have a great variety of shades and colours which are not uncommonly mixed together when cut. Red, white and yellow Chrysanthemums are almost enough to employ for cut purposes, and they should, as a rule, be cut with long stems, and arranged thinly in large vases, leaving foliage and buds to show. Single Anemones are grand for spring, but are very seldom met with. Many wayside or wild flowers are lovely. Forget-me-nots, Bugloss, Marsh Marigolds, Oxeye Daisies, Cornflowers, Harebells, Grass of Parnassus, and Wild Roses, are names that occur at the moment.

Just a line or two more to protest against the general employment of Maidenhair Fern to the exclusion of other foliage that is equally beautiful when appropriately employed. For many purposes the Maidenhair is of unique value, but for decorating vases in general it is much better to rely on foliage belonging to the flowers used. With even more force does this apply when decorators pass the leafage Nature has bestowed on plants and ransack the pinetum for material.

In decorating dinner tables, I do not think anything is more suitable than rather small glasses to be filled with good flowers. At the same time I would not like to say anything against laying cut flowers on the cloth provided it is done without anything hinting of artificiality. I mean I would not make any arrangement as to shape other than just laying on the flowers as they are cut. If the flowers are poor in character some other means of using them should be employed.—S.

WESTONBIRT.

UPWARDS of twenty-four years ago, or to be exact, in the issue of the *Journal of Horticulture* dated July 31st, 1873, there appeared an article descriptive of the beauties of Westonbirt, in which the writer stated it as his opinion that that was the first extended reference which had been in the pages of this or any other gardening paper, and so far as can be found no notes have appeared in these columns since then. This neglect is more than surprising when the undoubted magnificence of the estate is borne in mind. Its palatial mansion, lovely pleasure grounds and flower gardens, well-equipped houses, and superb arboretum are each worthy of an article to itself. No general notice could possibly do justice to either of these individually, much more to the whole, but an effort must be made in the limited space at command. The writer of the references to which allusion has been made spoke in highly eulogistic terms of the place then, when it was, so to speak, in its infancy, and more than corroboration can be added now. On every hand there is beauty either of Nature herself or of the art of man. Then the occupier was the late R. S. Holford, Esq., now his son, Captain Holford, Equerry to his Royal Highness the Prince of Wales, is the fortunate owner.

In justice to the former of these gentlemen it must be placed on record here that it is to him the credit is due for this worthy addition to the list of the "Stately Homes of England." The estate has been in the possession of the family for several generations, but it was not until Mr. R. S. Holford came into the property that a determined effort was made to improve the horticultural and the arboricultural departments. His knowledge in each of these subjects was most profound and took an eminently practical shape. To-day Capt. Holford has the same interest, but with considerably less time to devote to estate matters. Trees there are of his planting, and in their placing it can readily be perceived that the taste of the father has been inherited by the son. This is as it should be, for it may be taken as a criterion that the estate will, so far as it is in his power, be maintained as it has been and as its beauty demands that it should be.

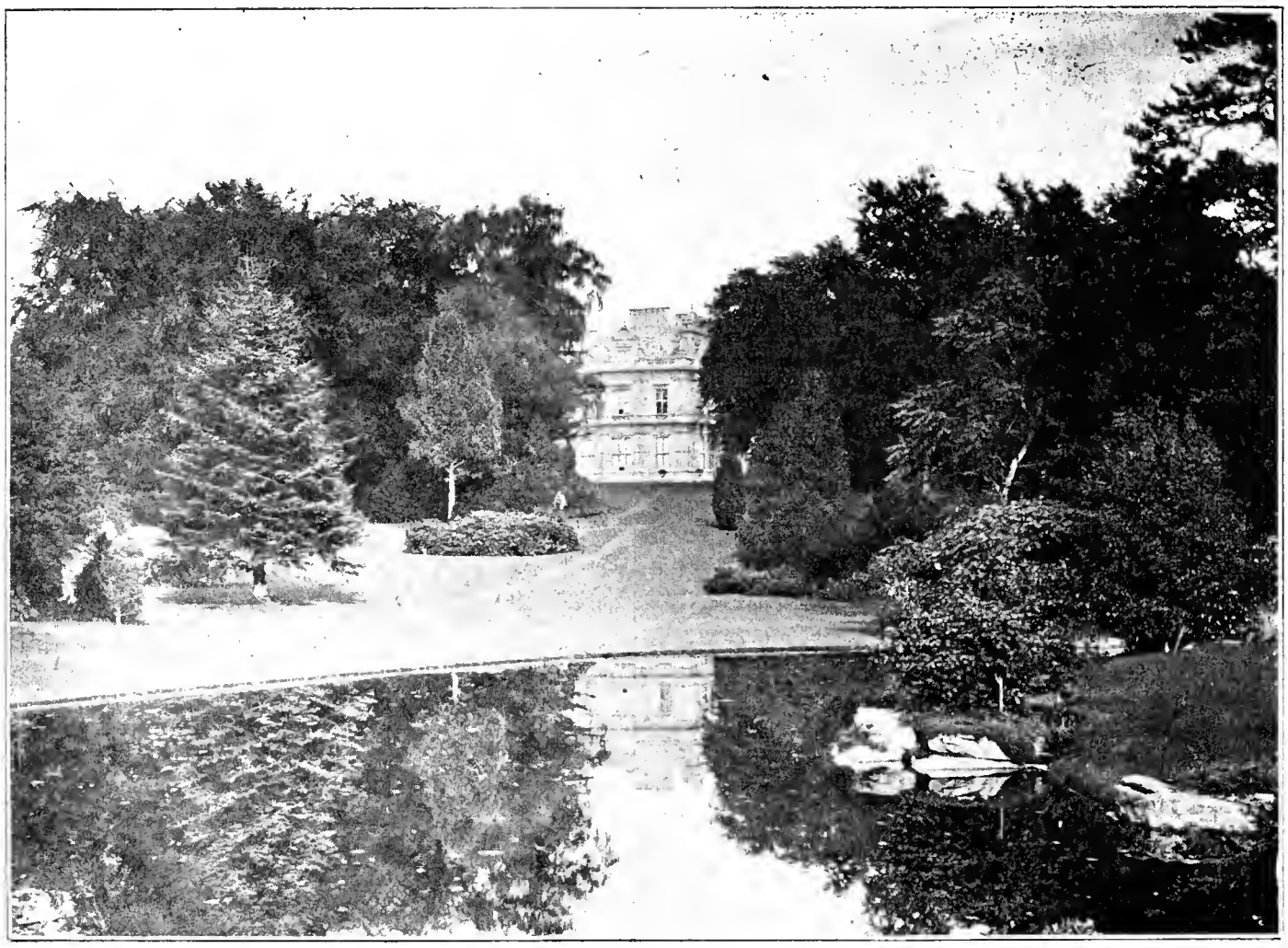

FIG. 38.—IN THE PLEASURE GARDENS OF WESTONBIRT.

Perhaps the feature which strikes the visitor to Westonbirt the most forcibly is the exceptional artistic taste seen on every hand that was displayed in the planting of the trees in the pleasure grounds about the mansion. Knowledge of plant life and of tree life is stamped in every clump, in every glade, and in every dell. Each tree and bush is neighboured by those of different character, though the harmony is never strained in the slightest degree. One can see at a glance that the planter was quite alive to what each tree or bush would eventually attain, with the consequence that every one, while showing itself to the best advantage, assists in emphasising the points of its neighbours, whether they be comparatively close to or distant from it. When the changes were commenced there was flat meadowland, now there are rockeries, lake, shrubs, soft lawns, and handsome trees in about the most charming 30 acres of pleasure grounds it has been the writer's fortune to see.

From an arboricultural point of view the interest engendered at the outset is maintained to the end, for the variety is remarkable. There are to be seen almost all kinds of Coniferous and other trees, and in the majority of instances there are perfect examples of each. Specimens of several represent the products of the first consignments that came to this country, and amongst them may be noted Wellingtonia gigantea and Cedrus atlantica, with scores of others of which mention cannot be made. The Conifers are of singular beauty, the boughs sweeping the ground and rising gracefully to the summit without a break. The Liquidambers, the Tulip Trees, the Oaks, the Acers, with many besides, are all excellent amongst the deciduous kinds, and are no less beautiful in their way than the Conifers previously noted. One might spend days amongst the trees noting the stature of a noble Cupressus here, and the spread of branch of the Cedrus deodara yonder, the graceful contour of a Douglas Fir, and the handsome leafage of the Japanese Maples, but such a course would need the eye and mind of a specialist in arboricultural craft. The results of such an inspection of the trees here and at other places where kindred work was done—Tortworth for example—would be valuable, and of more than passing interest.

Returning now to matters pertaining more of a horticultural character, but with no apology for the digression into the world of trees, we find an individuality marking Westonbirt as different from most other estates. In the planting of a small border of shrubs, in the formation of the rockeries, in the making of the lake, in the throwing up of terrace on terrace, judgment, practical knowledge, skill, and taste have all been combined, and with the happiest results. Glance at the illustration (fig. 38), which in a peep from the lower ground between the trees, shows the mansion on the rising terraces. It is a pretty picture, and only one of the many that abound on all sides. From one place a glimpse may be had of the lake, with its rocky sides and fertile borders, while in another an opening in the verdure will show some noble tree or beautiful foliage or flowering shrub. A walk is one of never-failing interest, for "at every step fresh beauties greet, and glorious scenes unfold."

The planting of bulbs in the grass near the edges of beds and borders has been very extensively carried out, and one is always meeting something fresh. There are Daffodils for the spring, with Snowdrops, Aconites, and Dutch Crocuses; while hardy Cyclamens, Crocus species, and many others thrive luxuriantly. Year after year these grow and spread, but their flowers in the soft coolness of the grass carpet are always fresh, always admired. It seems a great pity that more of this system of planting is not followed by those in charge of the pleasure grounds of estates. We might go on about this section at great length to the exclusion of other features of interest and beauty, but this would not be carrying out the determination made at starting, to do the best we could for all.

The mansion, which was built by Mr. R. S. Holford, is an ornate structure, and if one were writing for an architectural publication would supply an abundance of "copy," as it is it must be passed with a cursory glance. The view of it shown in the photographic reproduction (fig. 39), to secure which the operator stationed himself on the lower terrace, will convey to readers an admirable idea of its general character, and of its imposing magnificence. It is built of Bath stone, and it need scarcely be said that the rooms within are commensurate in dimensions with what the exterior would lead one to suppose. London readers, and many country ones too, will be familiar with Dorchester House, Park Lane, which was erected by the same gentleman as Westonbirt House, and with it passed to Captain Holford. The smoke of thousands of chimneys has

taken the freshness from the London house, but the country one is clean and bright owing to the purer atmosphere.

To the left of the mansion, as shown in the illustration, and attached thereto is the conservatory, which is of considerable size. A handsome corridor leads from the interior of the house to the conservatory proper, and both are of course kept stocked with plants of all the kinds that will thrive. From the roof depend many climbing plants, of which the most attractive just now is undoubtedly Bougainvillea glabra. The cool atmosphere of the structure evidently suits it splendidly, for the flowers are much finer, both in respect of size and colour, than when, as is so frequently the case, the plant finds a home in the intermediate house, or even the stove. The Palms in here are numerous and varied, while flowering plants are introduced in suitable places to brighten the structure, which is a trifle dark in colour overhead to show leafage off to the best possible advantage; but this cannot well be helped, and the best that can must be done.

In the foreground on both sides are flower beds. These are not very numerous except in the garden enclosed by walls especially for them, and are at a discount, but there was one specimen with a spike of three handsome blooms. We shall look forward to seeing some of the older seedlings in James' Street next year.

Though Orchids are not grown so extensively as in some establishments that have been visited, they are constantly being added to by Captain Holford, who is deeply interested in them, so eventually there will not only be quality, as is the case now, but quantity in addition. As with the Amaryllis, flowers are at this moment conspicuous by their absence, but a glance at the labels shows how judicious has been the selection with a view to securing the best. All the Cattleyas, Dendrobiums, Odontoglossums, Cypripediums, and others are in splendid health, and will render a good account of themselves in the years to come if the present promise is fulfilled. Coleuses, Begonias, Ferns, Crotons, Solanums on the roofs, with all the customary greenhouse and stove plants, are thoroughly well grown, many of them in considerable numbers. When this visit was paid the first three were making beautiful displays in their respective houses. Nothing advantageous would accrue to the naming of varieties, so we will advance another step towards the conclusion of our tour round Westonbirt.

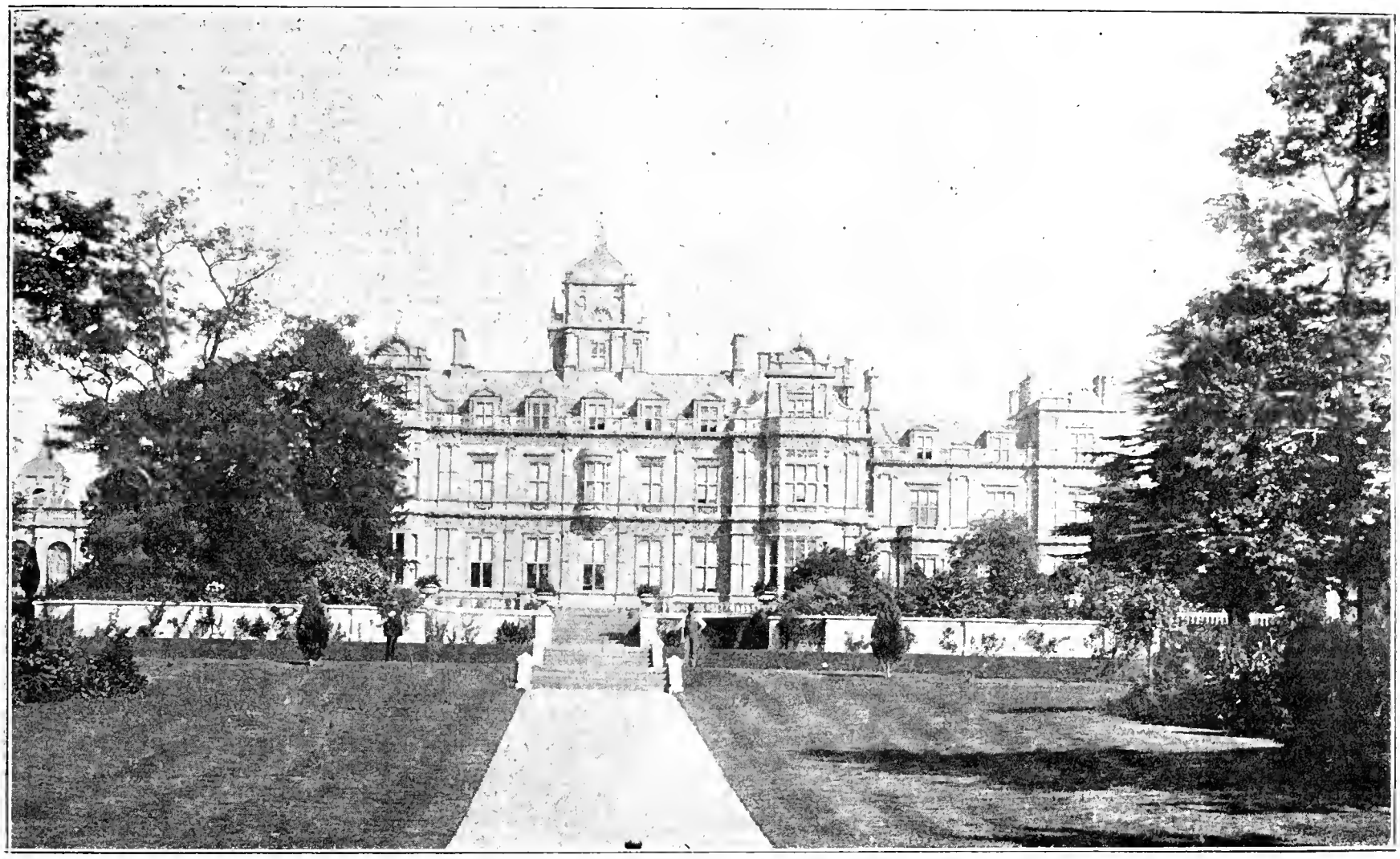

FIG. 39.—WESTONBIRT HOUSE.

where some beautiful flowers may be seen. Outside of this the beds are occasional, and are occupied generally with one or two kinds of plants. To enhance the charm they are not close together, but are separated by broad sweeps of lawn or clumps of flowering and foliage shrubs. As the customary plants are utilised in the flower garden they will not be enumerated here, as it would simply be taking space unnecessarily. The stone walls encircling it are clad with plants of all sorts, including Berberis, Vines, and Ampelopsis amongst others, to see which in their beauty would mean a visit towards the end of October, when the leaves have taken on their autumn tints. This, indeed, would be a very suitable time to visit the demesne, as the trees and shrubs would then be very much more beautiful than they are now, for, according to the head gardener, Mr. A. Chapman, the colouration assumed by many is intense and really superb.

The number of structures devoted to the cultivation of plants is very large, and as the whole of them are in one enclosed space they are convenient for working. Of all the plants grown, the greatest interest is centred on the Amaryllis, of which the collection is certainly one of the finest in the country. Frequenters of the Drill Hall shows will remember the grand displays that have been made by the Westonbirt plants, about whose flowers there is a distinctive air of substantiality and quality. The colours, too, are distinct from many of those grown elsewhere. There are thousands of seedlings from less than one year old upwards, and some interesting results are anticipated in the future. All of them are from Mr. Chapman's fertilisation. Just at present flowers

It is apparent that the soil is admirably suited to stone fruits, for they crop wonderfully; and this is the case year after year, both indoors and out, without any very special attention. Plums are, perhaps, the lightest this season, but these are far better than in less fortunately situated places. Pears on the walls are also good, but Apples are not quite up to the average. Melons, Cucumbers, Grapes, and Tomatoes all have a considerable amount of space allotted to them, while Peaches and Nectarines are extremely numerous. The vegetable gardens, of which there are three, are well stocked with all kinds that are required. None could be selected as being markedly superior to its neighbours, for all were in creditable condition. A portion of the smallest vegetable garden is devoted to reserve beds of hardy flowers, whence one may cut continuously for several months in the year. Most of them are herbaceous, and in the majority of instances a bed is utilised for one kind only.

After having inspected the home gardens we made our way to the arboretum, which is situated about three-quarters of a mile from the mansion. Here may be seen thousands of trees of the most varied kinds in the rudest of health. There are Conifers by the thousands, as well as evergreen and deciduous trees, and nowhere can a bad specimen be found. Obviously, some are far better than others, but all are interesting and many extremely rare. The expert who examines the trees in the pleasure grounds would find himself in a paradise in the arboretum. The area was not known by Mr. Chapman, but by the many grass drives by which it is intersected it must be of very great extent. The drive through the park

to the shade and coolness beneath the trees here must be extremely pleasant for the visitors to this lovely domain. From hence we made our way towards the quaint old town of Tetbury, delighted with the beauties of Westonbirt, and convinced that the day had been most profitably spent.—H. J. WRIGHT.

LIVERPOOL AND DISTRICT FRUIT REPORTS.

FOLLOWING my system of last year I am sending the usual fruit reports from our district, taken from gardens where hardy fruit is well grown, and where the collections are kept pretty well up to date. The situations are varied, and may be taken as fairly characteristic of the districts mentioned.

CLEVELEY, ALLERTON.

Mr. Cromwell has planted extensively of late years, and has now a grand collection of young pyramids in full bearing. Early kinds of Apples are much the best, this being attributed to the fruit having been set prior to the severe frosts the third week in May, which seemed to destroy the blossoms on late growing kinds. Pears in the open are better than on cordons on walls, although much below the average. Plums, nil. Strawberries have been excellent, the varieties grown being Royal Sovereign, Scarlet Queen, President, and Duc de Malakoff. Stevens' Wonder Mr. Cromwell has not succeeded with, either in pots or planted out. Of Raspberries Superlative is fine. Blackberries increase in favour, Mr. Cromwell advising their cultivation most emphatically for preserving with Apples. The arch, 30 yards long by 9 feet wide, is just now clustered with ripe fruit, from 20 to 30 lbs. being gathered on the 6th inst.

ALLERTON PRIORY.

Mr. Craven grows hardy fruit to the best advantage, although the trees are very old. Apples are moderate, some good, notably on standards. Pomeroy of Lancashire (a highly coloured local variety, and wonderful cropper), Warner's King, Lord Derby, Ecklinville, and King of the Pippins. Pyramids are better—Lane's Prince Albert, Ribston Pippin, Worcester Pearmain, Potts' Seedling, Cox's Orange Pippin. Cellini, usually good, is this season a complete failure. Plums and Damsons are failures, Cherries almost so. Gooseberries and Black Currants good, Reds fairly so; Pears thin, Jargonelle, Beurré de Amanlis, and Durondeau being the best.

CALDERSTONE, AIGBURTH.

Apples are a fair average crop, Pears are the same, Mr. Tunnington praising the good shelter from the cold winds and May frosts. Peaches and Nectarines outdoors are carefully cultivated, in splendid condition in every respect, the crop being abundant, showing what can be done in this respect at the present time, but wasps are most troublesome. Apricots in the open are more than half a crop, but Plums are a failure. Small fruits have been good.

ELM HALL, WAVERTREE.

Hardy fruit has been much improved since Mr. Bracegirdle came into charge. Apples are a good crop, especially Warner's King, Keswick Codlin, Suffields, Grosvenors, Ecklinville, Stirling Castle, Bismarck, Lane's Prince Albert. Of dessert Irish Peach, King of Pippins, and Ribstons are the best. The Russet section is not so plentiful. Pears are fairly good, Jargonelle, Marie Louise, Louise Bonne of Jersey, Durondeau, Clapp's Favourite, Pitmaston Duchess, and Winter Nelis being fine. Plums and Cherries have been very scarce. Figs, Apricots, and Peaches slightly protected very good. Small fruits have been plentiful.

HIGHFIELD, WOOLTON.

The Apple crop, always good with Mr. Haigh, is this year excellent. Pears in the open are a failure, but there is a good average crop on walls. Plums are in the same position. Of small fruits, Gooseberries, Red and Black Currants have been half a crop, with Raspberries quite up to the average, and Strawberries very good.

KNOWSLEY HALL.

Apples are very good, the best being Lord Derby, Lord Suffield, Bismarck, Schoolmaster, Cellini, Potts' Seedling, Yorkshire Greening, Ribston, Blenheim, and King of Pippins. Pears are under average in quantity and quality. Bush fruit has been a fair crop, whilst the best Strawberries have been British Queen, Royal Sovereign, Leader, a grand addition; Latest of All, and Oxonian. Plums, as in most places, are a complete failure. Mr. Doe has the trees in capital condition.

COURT HEY, BROADGREEN,

Apples are a fine crop throughout; Pears very poor, the fine cordons on the wall have suffered much from May frosts. Bush fruits have been a very fair crop, and Strawberries good.

BLACKLOW HOUSE, ROBY.

We have an excellent supply of all kinds of Apples, many of which have had to be thinned. Bramley's Seedling fruiting for the first time promises to be a welcome addition. Pears are not a heavy crop, but of good form, and with a fine September will improve greatly. Such sorts as Citron des Carmes, Beurrés Capiaumont, Diel, d'Amanlis and Bosc, Hacon's Incomparable, Magnate, Marie Louise, Prince Consort, and the delicious Doyenné du Comice, are all well cropped. Gooseberries, all kinds of Currants, and Strawberries have been first-rate, but Plums and Cherries almost a failure. Liquid manure has had to be used freely, as the majority of our trees are bordering on the half century.

OAKLANDS, SPITAL.

Mr. Ranson, who has seen twenty-three years' crops gathered in, says this season's is certainly the worst. Apples are a first-rate crop and fine fruit. Pears being about a third. This is a noted Damson and Plum district, but the crop is almost nil for miles round, a hundred fruits of the latter having to suffice for Mr. Ranson in place of some 3 or 4 cwt. in former years. Strawberries and Raspberries have been capital, but failure must be written of the Currant crop.—R. P. R.

VIOLA NOTES.

VIOLAS to bloom well over a lengthened period require a rich and moist soil, not necessarily wet, but one which will support the plants in dry weather. Even a light, well-drained soil, rich in humus by liberal dressings of manure and leaf soil, will give stamina to plants in dry weather, enabling them to withstand its effects with better results than are produced from plants in a heavier-textured soil. Violas, it must be borne in mind, are not marsh plants; they grow on knolls, or slopes, or in ground free from stagnant water; therefore, though a moist soil be desirable, it should be well drained, moisture being afforded by supplies of water in a prolonged dry period.

Ground for Violas ought to be trenched or stirred to a depth of 15 to 18 inches, as good soil admits. It is of no use going down with a view to bringing to the surface matter which, before it can be available as food for plants, requires amelioration by atmospheric influence and an addition of organic substance. Trench the ground in autumn, putting in some partially decayed vegetable refuse not further from the surface than a foot; and if the ground will not admit of being turned up deeper loosen the under strata, placing the manure upon it, throwing the surface rough for the winter. In spring dress the surface with leaf soil or manure

Plants raised from seed grow more upright and do not branch nearly so well, and are not, for a time at least, so floriferous as are those from cuttings. Seedlings are not good the first year; it is not until the plants are cut down that dependance can be placed upon seedlings for a full display: hence I do not advise the plants to be raised from seed except for the origination of improved varieties. Those, however, who wish to raise plants from seed may sow the seed the middle of August up to early September in light rich soil in a sheltered situation, pricking out the seedlings 3 inches apart in a sheltered spot in October, and planting them in March or early in April.

Cuttings give the best and most floriferous plants. Take the cuttings towards the end of September or first week in October. Choose for them a sheltered border—under a low wall or fence—and moderately rich soil, made fine and level, surfacing with a thin layer of sand. Let the cuttings be of the shoots which spring from the base of the plants, not using the exhausted flower growths, and about 2½ to 3 inches long, pricking them in about half their length 2 inches apart, firming them well in, completing with a good watering. In a very bleak position the cuttings may be put in a frame and wintered in every respect like Calceolarias.

Plant them out in spring before dry weather sets in, and in no case defer their planting until the usual time of bedding, for Violas and Calceolarias are not able to contend with drought if it come upon them before their roots have obtained a good hold of the soil. Short duration of bloom and sudden collapse are due to late planting.

Plants from cuttings made in early October will give an effective summer display, but not unfrequently Viola beds become seedy in autumn, as, indeed, all plants do that have been in a high state of perfection during the hot summer months. For a late or autumn bloom, cuttings may be put in in May or June, affording them shade. An amateur tells me (and I have seen) how to root Violas and Pansies in summer—namely, put them in between the rows of early Potatoes where the cuttings are shaded from the sun, lift the plants with balls the first showery weather after rooting, and plant them where they are required to bloom. For a spring display, or rather early summer, for it is not until May that Violas are in their beauty, the cuttings should be put in the second week in August, and be in their flowering quarters in October. An earlier bloom will be had by wintering the plants in frames, planting out during March. Potted and plunged in cocoa-nut fibre refuse they stand well, and if in the open a top-dressing of the same material is of great assistance to the plants. Plants divided in October and then planted will afford a good early display.

Violas stand wet well, better perhaps than any other flowering bedding plants, and succeed in summer in high cold situations, where more tender subjects do not have other than a starved appearance. Being moisture-loving plants they are benefited by a top-dressing in summer, for if mulching has the property of retaining heat in winter, it possesses equally the power of retaining moisture in summer. Soak, therefore, Viola beds with water in dry weather before the soil becomes hard and cracked if heavy, or dusty if light, applying the water to the roots rather than overhead, and mulch with short manure, which will be hidden by the foliage. Neater than manure and as good is cocoa-nut fibre refuse, and if this is placed close up to the plants they will produce fresh shoots freely, which will root into the mulching.

To keep the plants in flowering order through the summer it is necessary to cut off the seed pods and to thin out the old stems, thereby encouraging young growth; and this attended to before the plants are exhausted, frequently going over the beds, attending to them with water and weak liquid manure in dry weather, we shall find Violas continue blooming from early spring to late summer in as good a state of perfectiveness as most descriptions of flowering bedding plants.—G.

A VISIT TO WORCESTER.

No visitor with an hour or two to spare and the slightest pretension to an interest in horticulture, would ever think of visiting the ancient city of Worcester without looking in at the nurseries of Messrs. R. Smith and Co., which are situated at St. John's. The people of Worcester find pleasure in styling themselves as of "the City of the Faithful," an honourable title to which we fancy we have heard the Exonians lay claim. But whether or no they are justified in this matters little to readers of the *Journal of Horticulture*, who are satisfied with the knowledge that the city has within its precincts such a famous nursery as that under notice. It is no establishment of Mushroom-like growth, but a business that has grown with the years and with the decades, and stands now renowned the world over for its Clematis, its hardwooded plants, its shrubs, and its fruit trees, with other things that one need not particularise in an introductory paragraph.

As the train rushed on its way towards the town the writer found himself wondering whether he would experience any difficulty in reaching the desired goal. But nothing of the sort need have been fancied, for it was quickly learned that trams ran frequently from the Great Western station yard to the gates of the nursery. The route is for some distance through many narrow strects, but after crossing the river a broad road bordered by trées is entered upon, and is considerably more pleasant, especially on a hot day in the summer. These few hints are given with a view to assisting other horticultural strangers who may purpose visiting Smith's. It may be said that the distance is about two miles, and thus a comfortable walk on a cool day, but rather too far under a blazing sun when the one or two hills that have to be mounted are taken into consideration.

When once St. John's is reached one finds oneself in a totally different atmosphere—the air being much purer, sweeter and fresher, than in the town just left. Such being the case, one could not be surprised at the charming effect the first entrance within the gates of the nurseries left upon the mind, for everything looks bright and healthy. A long broad walk stretched away in front of us, flanked by vegetation on each side, but we did not follow this, but bore away to the left in search of the offices and of a guide, both of which were speedily discovered. A rest and a chat here over gardening and gardeners occupied only about a quarter of an hour, after which we commenced our tour in real earnest, and inspected at the outset

The Glass Department.

The writer had had a sort of impression that, beyond Clematis and Heaths, nothing "great" was grown under glass, but in this was most hopelessly wrong, for there are Roses by the thousand, Pelargoniums, all kinds of hardwooded plants, Ampelopsis Veitchi, and others in enormous quantities, and all in splendid health. Naturally the Clematis took attention first, and as we passed through house after house, we ventured to wonder audibly how many were grown, and were astonished to find the stock was about eighty thousand. "Stupendous!" readers may think, and wonder where the whole of them find their way to. All ages are represented in various places; some have only just been root-grafted, and do not yet show any signs of growth. In another stage, the plants in about 3-inch pots had each a 3-feet stake that was clothed with clean, strong, healthy growth. These were packed pot thick in immense central beds, and on the side stages of several very long span-roofed houses. Beyond these two samples there are others of much greater age, and, of course, all the varieties for which the firm is renowned are represented.

The vast array of Roses in pots is almost as imposing as the Clematis, and the plants have the same desirable characteristics of health, cleanliness, and strength. Almost the whole of them belong to the Tea and Noisette sections, and of all there is probably a larger number of Maréchal Niel than of any other individual variety, though all the most popular ones are represented by hundreds, and even more. It is noticeable that at every few yards through the houses are standpipes with lengths of hose, so that water may be applied rapidly in any particular spot that may require it. Asparagus deflexus, A. plumosus nanus, A. Sprengeri, with Ferns, Dracænas, and other plants appreciated for the beauty or elegance of their leafage, receive more attention than is customarily devoted to them in nurseries, and prove by their condition that the treatment to which they are subjected is in every way suited to their requirements.

Let us now turn for a moment to the hardwooded plants, of which we will mention Ericas and Azaleas as two typical examples. Of these and others there are thousands, growing in houses, frames, and in the open air. Young plants and old ones are seen on every hand, the propagation being effected at home—indeed, Smith's is one of the few establishments where the increase of these plants is largely carried out. The growth is wonderfully sturdy and strong, and proves that the firm has made a speciality of something it thoroughly understands. It would be impossible to find anywhere a collection of plants in better condition than these. Azaleas are propagated by the thousand to meet the extensive demand, and beyond the new varieties, of which some are purchased each year to keep the collection up to date, there are no continental specimens on the place. Evidently the wants of these are known by the man in charge.

But we must proceed on our way, and note in passing the hundreds, even thousands, of Lapagerias, especially of rosea, of which there are some superb plants. Bouvardias constitute a business in themselves, to such an extent are they grown; while Gardenias, Ixoras, and Stephanotis, with Cannas, Crotons, and many others, receive attention in proportion to their importance, and the demand there is for them from buyers. None of these several plants are grown and arranged in houses for show, as is seen in most nurseries; they are grown for sale, and so excellent is the firm's reputation, that purchasers find no necessity to make their own selections—instead, they state their requirements, and rely upon having them fulfilled. It is probable that of the plants we have mentioned, the stock in the Worcester Nurseries is one of the finest and most extensive in the United Kingdom. Thousands of Pelargoniums of the various sections are noted in our walk round, for in these a very large trade is done, especially, we learned from our guide, in the North of England and across the border.

Flowers out of Doors.

When mention has to be made of the outdoor flowers we need not go farther than the Roses ere making a start, for of these there are about twenty acres, some in one place and some in another. Hybrid Perpetuals and garden Roses, of course, take up the major portion of the space, the Teas, as has been previously observed, being grown within doors. Standards and dwarfs, young and old, all have their place, and all are in capital condition. Despite the intense heat that had been prevailing for some time prior to this visit being paid, there were large numbers of beautiful flowers to be seen, from which, by careful selection, a box could easily have been found that would have done credit to any show. A noticeable quarter in this section was that occupied by the Crimson Ramblers, which by their magnificent growth and beautiful foliage, were conspicuous before all others.

Hardy plants of all kinds for rockeries and for beds or borders receive attention, and are grown in small hedge-enclosed gardens. In this department the most noticeable feature amongst the plants in bloom was the uniform excellence of the species and varieties. This, we learned, was due to the fact that a few years ago, when land was scarce, a thorough overhauling had been carried out, any that were at all inferior having then been lifted and thrown away to make room for others much more deserving of the valuable ground at disposal. No attempt will be made to mention names here, as herbaceous plants are familiar to all, and the most prominent will flash across the mind of the reader as these notes are perused.

Trees and Shrubs.

As the nursery occupies an area of 200 acres, or thereabouts, it will readily be recognised that there is plenty of room to grow shrubs and trees of all sorts and of various sizes, and this, despite the fact that 20 acres go for Roses, and considerably more than that for Asparagus, which is grown to a surprising extent. The specimen shrubs of all kinds on the margins of the main walk, which is rather over a mile in length, are splendidly grown, and demonstrate both the suitability of the soil and the cultural methods adopted. Hollies are of exceptional excellence in all stages, from the tiny plant to the pyramid or standard many feet in height. From these alone it can be seen that the nursery is no juvenile, for many years must have elapsed since the largest plants were propagated. Flowering shrubs are apparently numberless, as are those grown for the beauty of their leafage; while of trees, such as Oaks, Limes, Planes, and others, there are the same immense stocks on hand.

Conifers form one of the most interesting departments in this establishment, and the collection would be very difficult to surpass, so complete is it, and so excellent the specimens it comprises. In all there must be several acres of Thuias, Cupressus, Pinuses, Piceas, Yews, and others. Of these the Golden forms, more particularly of the first and second named, are peculiarly beautiful, and as there are plants of each perfect in all respects, much interest is centred amongst them. In the borders of the principal walk almost all the kinds grown are represented, the bulk being relegated to quarters here and there about the nursery. This facilitates comparisons being made by purchasers and visitors, as it is difficult during the planting season for the various sections to be reached in comfort. Thus selections can be made from those referred to, and the plants lifted from their respective positions wherever they may be. The system has much to commend it, and fortunately finds favour in most large nurseries where trees and shrubs are grown extensively.

Fruit Trees and Vines in Pots.

It would not be possible to have found anything more appropriate with which to bring these notes to a conclusion than the fruit trees and the Vines in pots, for, excellent as are the occupants of the several other divisions, these are no less so. Clean, strong growth is the main characteristic. There is no grossness, no over-luxuriance or sappiness, which warn the experienced cultivator that fruitfulness is scarcely likely to accrue. Quarter after quarter is noticed of Apples, Pears, Plums, Cherries, Peaches, Nectarines, and all kinds of small fruits. Here are standards and pyramids, there bushes, whilst yonder are sections of trained trees all in fine condition. At the time this visit was paid the quarters were even and well stocked, but before another six months have passed they will be thinner and considerably more untidy by reason of the gaps made by those that will be removed. The Vines in pots are a speciality, and more than this need not be said to guarantee the excellence of their condition.

Another word or two and we have done. The references to this visit to Messrs. R. Smith & Co.'s nurseries must not be finished without mention being made of their surprising cleanliness. Acre after acre was observed with scarcely a weed on it, while there was probably not an acre of the whole 200 that was not occupied to its fullest extent. It cannot be questioned that the land and its occupants are most creditable to the firm and to the men employed thereon.—STRANGER.

Maréchal Niel on Gloire de Dijon.

As everyone knows this Rose, and it is so universally admired by all classes, amateurs in possession of a limited amount of glass structure, who have hitherto failed to grow a strong healthy plant for the roof or back wall, might try to advantage the following simple method of culture.

Plant a dwarf Gloire de Dijon in good turfy loam well enriched, and allow a few growths to go up. On these inarch Maréchal Niel, which must be allowed to take the lead when the union is effected, by gently stopping the Gloire. Good plants are soon obtained in this way. The stock then asserts its superior strength, and throws up a strong shoot from the base, which may be inarched also, and turned to good account. I have seen trees worked upon this principle every year adding a new clean growth, and working the old gradually out—covering large spaces, and bearing heavy crops of first-rate blooms.

A few cuttings may be rooted and grown in small pots to make the work of inarching more convenient if the stem is in too awkward a position to draw down a growing branch for union.—R. A. Anderson, *Alnwick.*

Rose Souvenir de la Malmaison.

A recent note on this fine old and really almost perpetual blooming Bourbon Rose reminds me of one I saw growing in a glass corridor recently at Cricket St. Thomas, the late residence of Lord Bridport, near Chard, Somerset. There Mr. Lyon, the gardener, drew my attention to a fine climber which had filled a great portion of the back wall of the corridor with luxuriant growth, and on which were just two or three blooms exactly like those of the well-known dwarf Souvenir de la Malmaison. It is there termed the Climbing Souvenir. Is there really such a Rose in commerce, and if not, what variety is it at Cricket? It is a curious thing that whilst Rose varieties have been during the passing half century so numerous, and so many have been almost reproductions of others, that we have never found any one at all like the old Malmaison. There is a large bed of it at Hampton Court Palace. It has been planted many years, and yet it is in season always in vigour, and almost always in bloom. Its grave defect doubtless is that it is not a show Rose and is almost unclassable. Its great merit is that it is a splendid garden Rose, and yet it is fifty years old at least. There is, too, at Cricket, in the front of this corridor, but kept repressed so that the light is not excluded, not only climbing Niphetos, but also the dwarf variety and W. A. Richardson. These are like huge long bushes. The true old Cloth of Gold flowers profusely on the roof of a Camellia house, and is presumably fifty years old. Its stem, 16 feet long, is at the bottom about 6 inches through.—A. D.

Garden Roses.

Although what is known as the florists' Rose may be the more popular with the public, it cannot be denied that the section styled Garden Roses is gaining much favour with owners of gardens, as well as the numerous visitors to the Rose shows in June and July. What I mean by garden Roses are those kinds that blossom in clusters, single or otherwise, Crimson Rambler, for instance. Where is there a Rose in the first named section that can compare with Turner's wonderful Rambler as a garden ornament? It matters not whether the plant is growing under glass or out of doors, the effect is unsurpassed. Even for cutting with long stalks and big clusters of bloom this Rose is difficult to excel. When allowed to grow at will, singly, and on grass, is there an equal to it in its wonderful flowering capacity? There is yet another point not touched upon in its favour, the period over which the blooms will last in perfect condition without shedding their petals or even losing colour. I have noted the same blossoms good for a fortnight. It seems incredible, but perfectly true, and that is far and away the most pleasant part of it. Take as other examples William Allen Richardson, Felicité Perpetual, the various Moss Roses, not forgetting the single-flowered varieties, or Lord Penzance's charming Briars, and see in them my idea of garden Roses.

I have long considered them grand for either large or small gardens, and purpose in these brief notes detailing a list of what I consider desirable varieties to cultivate, and as the season for Rose planting is near at hand some readers may be induced, perhaps, to take in hand a few of my favourites. Various methods of growing them will occur to planters, but singly on grass is a favourite way of seeing them to the greatest advantage. As hedges to a path, on a bank, trained over arches, or even trailing over dead or living tree stems, are all suitable places to plant and train them.

Growing in masses in beds in the Rose or flower garden is a good method of dealing with the dwarf or bushy growing sorts. The tall and strong in habit require more space than an ordinary bed on grass or gravel affords to do them justice. They seem to need more head room and some support to trail over or lean upon. It does not pay to prune these Roses in the orthodox manner common to the Hybrid Perpetual section, or even Tea scented varieties. The first year, perhaps, after planting they are best cut tolerably hard back to induce basal growth, wherewith a proper foundation for future use is laid. Liberal treatment in the way of good soil, deeply dug and liberally assisted with manure, is essential to the new vigorous growth so desirable, to give a full and lasting crop of bloom.

As with all Roses early planting is a step towards assuring success in the near future, while copious supplies of moisture at the root during dry weather and occasional soakings with liquid manure, will all aid in giving a stimulus to growth that cannot fail to bring their reward. The mulching of Roses during dry weather, in light soils especially, with half-decayed stable manure is not practised enough. Too often the moisture is allowed to evaporate after the trouble to give water has been taken, whereas an inch or so of some mulching material would check this, keep the roots cool, and at the same time assist in stimulating growth.

Just a few notes on pruning this class of Rose and I will pass on to the selection of names. The point is to encourage as much freedom in growth as possible. For instance, plants of Crimson Rambler in the open, making shoots 6 feet long, may be regarded as being entirely satisfactory. The point, then, in pruning these plants is to cut away all weak and useless shoots, making room for those left. Growths of the class indicated will give huge clusters of bloom on stout stalks their whole length, whereas if these 6 feet growths were cut down near to the ground, as in ordinary H.P. pruning, the season's flower crop would be mainly lost. Encourage free growth, and then provide space for it to mature, is the salient point in pruning; you may then rest content upon a glowing crop of blossoms when the proper time arrives.

In the list of varieties that I purpose giving for future guidance I do not intend to follow any alphabetical order or set method of tabulation, but to jot them down as they occur to my mind.

Fellemberg.—This belongs to the China section. The colour is bright crimson, and the variety is effective and deserving of note.

Isabella Sprunt.—The deep canary yellow blooms of this are well known. It is very free flowering, and beautiful in the bud.

Persian Yellow.—An exceedingly deep yellow Briar Rose, with large, full, double, and freely produced flowers.

Commandant Beaurepaire.—Bright rose, striped with purple and violet, is the colour of this. The flower is large and full.

Bardou Job.—Almost single, but with large petals of bright shaded crimson, produced freely and continuously. It is one of the most beautiful and distinct.

Claire Jacquier.—Nankeen yellow is the hue of this charming little Rose. The flowers are produced in clusters. The plant is a strong climber, and excellent for trellises and arches.

Crimson Rambler. — This is now too well known to require description.

Hebe's Lip.—A distinct and beautiful garden Rose, of which the colour is white, with a Picotee edge of purple. It is amost single. T is is often named Reine Blanche, a variety sent out a few years since, and certified as new.

Gustave Regis.—One of the finest of garden Roses. The canary yellow buds, with their deeper centre, are long and pointed.

Madame d'Arblay.—A hybrid Musk Rose, blooming in large clusters. The colour is white, and the plant is hardy and useful for climbing. It is sweetly scented.

Lucida Plena.—This is a pretty buttonhole variety. The colour is rose, with a deeper centre.

Blanche Moreau.—A pure white Moss Rose of excellent quality.

Baronne de Wassenaer.—This also is a Moss. It is very early, double, and showy; colour deep rose.—E. Molyneux.

(To be continued.)

THE ANTIRRHINUM OR SNAPDRAGON.

One would almost conclude that Antirrhinums as a genus were indigenous to Britain. Two species are considered so. For long, narrow, curved or straight borders, few plants with their habit can equal them. Cottagers with little time to spare for gardening, yet wishing to have a showy piece of ground, could not do better than sow Antirrhinum seeds, and enthusiastic amateurs never fail with them. They grow anywhere—on rocky slopes or among boulders with scarcely any soil. They are splendid for walls, and everyone must have observed how they thrive with no more nourishment than that got from between the stones of a crumbling wall or ruin.

At the same time, light rich soil insures their fullest beauty. Sow seeds during the early part of September, either in boxes, pans, pots, or a cold frame, and after germination and some growth, let each seedling stand free from its neighbours, wintering them in a cold frame. Or early in February sow as above, having a 55° temperature to start with, reducing it as growth, season, and the several shiftings advance. Slight protection when required must be afforded, airing whenever safe. The outcome of this should be beauty, slight fragrance, and satisfaction from July till they fade.

Cuttings taken during August or September from favourite varieties should be inserted in a light dry soil with frame and mat protection, and will be useful for spring planting. Like many other hardy plants, notably Foxgloves, they are self-sowers. Given a sheltered spot in light rich soil they spread their seeds, which lie through winter unharmed.

Three distinct classes exist:—Tom Thumb, dwarf and close; Medium, best for general use, about 20 inches high, and Majus, the type, which attains a height of 7 feet. Few flowers give such a fine choice of colour—pure white, grey white, straw, sulphur, primrose, deep canary yellow, darkest mauve, maroon, vermilion, pink, peach lilac, and others. —A Young Scot.

ALLIUM PEDEMONTANUM.

THE plant represented in the annexed woodcut deserves all that can be possibly said in its favour, for it is an alpine bulbous plant of rare merit, and destined to assist largely in the embellishment of our hardy bulb borders all through the earlier part of the season. It is fortunately quite devoid of the disagreeable garlic smell usually characterising Alliums, and which must be tolerated with the showy flowers of the others. For making clumps in the mixed border or the rock garden this bulb is undoubtedly an exceedingly desirable acquisition, as it increases quickly and without becoming in the least troublesome, so compact is its habit of growth. It is also a most useful pot plant, with a considerable advantage over other spring bulbs in the length of time it remains in bloom, and even after being cut the flowers are quite fresh for a long period. It forms tufts of from four to six narrow grass-like leaves, having a very graceful drooping habit, and above the foliage rise in great profusion the charming umbels of drooping dark rosy-pink flowers. It is increased by division or seeds, which ripen plentifully.—M.

HORTICULTURAL SHOWS.

EDINBURGH.—SEPTEMBER 8TH AND 9TH.

THIS magnificent exhibition was held in the Waverley Market on Wednesday and Thursday last, and was one of the finest ever held under the auspices of the Society. The entries, notwithstanding the backward season, were enormous, upwards of 2300 being received, and yet the competition was very keen throughout, especially in the fruit and cut flower classes. It is impossible in the limits of a short report to give a list of all the prizetakers, but the following were the fortunate exhibitors in some of the principal classes.

The Society, to celebrate the Diamond Jubilee of her Majesty's reign, issued a supplementary prize list, offering substantial money prizes and medals for a group of plants, group of cut flowers, a table of fruit, and a table of vegetables respectively. The entries included some of the best English and Scottish growers, and in each case the first prize went over the border to England. It is to be hoped the Council will see their way to retain these classes in future, for the great fault formerly of Edinburgh shows was their stereotyped nature.

JUBILEE CLASSES.

Taking these first, for a group of plants Mr. J. McIntyre, Darlington, was first, winning the Jubilee silver-gilt medal and £20 with a beautiful and graceful arrangement, using a large Kentia in the centre, on a cork stand, Celosias, Dracænas, Orchids, and fine-foliaged plants, making a bright display. Mr. Malcolm McIntyre, gardener to Sir Charles Tennant, Bart., was a close second.

For a table of cut flowers, 15 feet by 5 feet, prizes to the value of £10, £7 7s., and £5 5s. were offered, from which Dahlias were excluded (which many persons thought rather a ridiculous exclusion for a September show). Messrs. Harkness & Sons, Bedale, were placed first with large and brilliant masses of Helianthus, Liliums, Gladioli, Montbretias, a bold, bright table, but lacking the quality of the second prize group of Messrs. Cocker & Sons, who used large mirrors at the back. Mr. J. Forbes, Hawick, took third place. Mr. Campbell, Blantyre, and Mr. Irvine, Jedburgh, were very highly commended. This was a splendid class, all the exhibits being of the first quality. The Jubilee silver medal went with the first prize.

For the best table of fruit, for which the prizes were £21, £12 12s., and £7 7s. were offered, some magnificent tables were in competition, Mr. J. Hunter, gardener to the Earl of Durham, Lambton Castle, winning with splendid examples of Gros Guillaume and Black Alicante Grapes, Victoria Nectarine, Pavie de Pompone Peach, Magnum Bonum Plum, Brown Turkey Figs, Golden Eagle Peach, Hybrid, and Charlotte Rothschild Pines, Washington and Gascoyne Scarlet Apples, Duchess of York Melon, and Pitmaston Duchess Pear. This was a most meritorious table, not a weak dish in the lot. Mr. R. Cairns, gardener to Martin White, Esq., Balruddery, Dundee, was a splendid second, and the veteran, Mr. Kirk, Alloa, third. The large Veitch Memorial medal went with the first, silver and bronze Jubilee medals with the second and third prizes.

For the best table of vegetables there was the same keen competition, Mr. Jas. Gibson, gardener to W. Watts, Esq., Devonhurst, Chiswick, leading with fine examples of Excelsior and Ailsa Craig Onions, Satisfaction Potatoes, Autumn Giant and Mammoth Cauliflowers, Red and White Celery, Student Parsnip, Lyon and International Leeks, Perfection Tomato, Autocrat Pea, and Best of All Bean, the whole forming a handsome exhibit of well-grown and well-staged produce. Mr. R. T. Rae, gardener to Major Scott Kerr, Roxburgh, was second; and Mr. W. Harper, gardener to J. R. S. Richardson, Esq., Perth, third. The medals were the same as in the preceding class.

GENERAL CLASSES.

For a table of plants arranged for effect, Mr. G. Wood, gardener to J. Buchanan, Esq., Oswald Road, Edinburgh, was first, Eulalias, Cocos Weddelliana, and splendid plants of Oncidium recurvum being effectively used. Mr. J. McIntyre, Darlington, was second.

Mr. J. Napier, gardener to P. Neil Frazer, Esq., Murrayfield, had the best four Adiantums, showing a huge specimen of A. digitatum. The same exhibitor was first with four British Ferns, and also with four exotic Ferns, showing splendid specimens in each case.

Fine double Petunias, Cockscombs, Pelargoniums, Begonias, and Fuchsias were exhibited by the local gardeners. Large Palms and Tree Ferns were placed about the Market, which greatly enhanced the beauty of exhibition, but it was difficult to find the prizewinning plants.

Roses were a fine feature of the Show. For twenty-four Teas Messrs. D. & W. Croll, Dundee, led with, amongst others, Bridesmaid, Catherine Mermet, Ernest Metz, Innocente Pirola, and Madame Cochet. Messrs. Adam & Craigmillar, Aberdeen, were second. Messrs. Cocker & Sons, Aberdeen, won with twelve Alfred Colomb, and Messrs. D. & W. Croll for twelve scarlet Roses, showing Captain Hayward; Messrs. Cocker and Sons were second with A. K. Williams. For thirty-six Roses Messrs. D. & W. Croll won; Messrs. Cocker & Sons were second; and Mr. Hugh Dickson, Belfast, third. For eighteen Roses Messrs. D. & W. Croll were again first, Messrs. Cocker second, and Mr. Smith, Stranraer, third.

For thirty spikes of Gladioli Messrs. Harkness, Bedale, were first

FIG. 40.—ALLIUM PEDEMONTANUM.

with fine clean spikes; Mr. Campbell, Gourock, second. Mr. M. Campbell, Blantyre, was first with twenty-four double Dahlias, staging fine solid well-finished blooms—Shottesham Hero, Colonist, J. Cocker, and Penelope were the most notable; Messrs. Harkness & Sons were second. Mr. M. Campbell was also first for eighteen sprays of Cactus Dahlias, Messrs. R. B. Laird & Sons second, and Messrs. Laird & Sinclair, Dundee, third. For eleven spikes of Hollyhocks Mr. Forbes, Hawick, took the first place; Mr. Irvine, Jedburgh, second. Messrs. Laird & Sons had the best eighteen single Dahlias, staging immense sprays; Mr. John Downie second.

Herbaceous flowers were staged in bewildering profusion. For twelve bunches, Mr. Bryson, Innerleithen, was first, showing grand bunches of Montbretias, Lobelia cardinalis, Veronica longifolia subsessilis, Statice incana, and many others; Mr. Meiklem, Bridge of Weir, was second; and Mr. Patterson, Selkirk, third. Mr. M. Campbell, Blantyre, won with twelve Carnations in a great competition.

FRUIT CLASSES.

For a collection of twelve dishes of fruit, Pines and Bananas excluded, Mr. J. Hunter, Lambton Castle, took the lead with fine bunches of Chasselas Napoleon, Gros Guillaume, and Gros Maroc Grapes; Golden Eagle Peach, Victoria Nectarine, Pitmaston Duchess Pear, Gascoyne Scarlet Apple, Magnum Bonum Plum, Moor Park Apricot, Brown Turkey Fig, and Washington Apple. Mr. Harris, gardener to Lady

Henry Somerset, Ledbury, was second; and Mr. J. McHattie, Strathfieldsaye, third.

For eight dishes, Mr. Harris was first with Black Hamburgh, and Muscat of Alexandria Grapes, Barrington Peach, Lady Sudely Apple, Lord Napier Nectarine, and Pitmaston Duchess Pear as the leading dishes; Mr. D. Kidd was second, and Mr. Martin White third.

For six bunches of Grapes, Mr. Lunt, gardener to A. Stirling, Esq., Keir, won with Gros Maroc, Museat of Alexandria, and Black Hamburgh; second, Mr. White; third, Mr. J. Leslie, Pitcullen House. For four bunches, Mr. D. Kidd, gardener to Lord Elphinstone, Musselburgh, was placed first with superb bunches of Muscat of Alexandria, Mrs. Pince, Gros Maroc, and Muscat Hamburgh. Messrs. D. and W. Buchanan, Kippen, were second; and Mr. D. Airdrie, gardener to J. H. A. Graham, Esq., Larbert, third. There were five entries, and either good enough for a first place.

Mr. D. Kidd was also first for two bunches of Muscat of Alexandria; Mr. R. Cairns, Balruddery, was second; and Mr. W. Rutherford, Anthony Castle, third. Mr. J. Matthison, gardener to Messrs. Craig of Currie, was first for two bunches of Black Hamburghs; second, Mr. J. Menzies, Dunipace; third, Mr. Sutherland, gardener to T. Learmouth, Esq., Polmont. For one bunch of black Grapes Mr. J. Day, gardener to Earl of Galloway, Garlieston, was first with Gros Maroc; second, Mr. McLean, Alloa, with Madresfield Court; third, Messrs. Murray & Son, Orchard Park, Polmont, with Gros Maroc. Mr. McLean, Alloa, won for the best bunch of white Grapes with Buckland Sweetwater. Mr. T. Sutherland, Polmont, had the finest flavoured black Grape in Madresfield Court. Mr. D. Murray, gardener to the Marquis of Ailsa, Maybole, had the finest flavoured white in Museat of Alexandria.

Vegetables.

These were very fine. Mr. J. Waldie, Dollar, was placed first for a collection of twelve varieties, showing splendid Leeks, Onions, Celery, and Carrots; Mr. A. Dickson, Glenmoriston, was second; and Mr. W. Harper, Perth, third. Leeks are always a feature of the Edinburgh Show. For twelve Mr. J. Hood, gardener to Miss Baillee, Dryburgh House, St. Boswells, was first with splendid specimens, blanched over 16 inches. Mr. S. Ormiston, Jedburgh, was second. Mr. J. Gibson, Chiswick, won with six Parsnips. Turnips, Cabbages, and other vegetables were exhibited in large quantities.

Trade Exhibits.

Of course in such a large show the trade was well represented, and their exhibits alone would have made a splendid exhibition. Messrs. Dickson & Co., Waterloo Place, had Vines in fruit and other plants; Mr. J. Downie, Prince's Street, stove and greenhouse plants; Messrs. J. Grieve & Sons, foliage plants and cut flowers; Messrs. Methven and Sons, fine-foliaged plants; and Mr. Phillips, Araucaria excelsa. All the above are Edinburgh nurserymen.

Messrs. Bunyard & Co., Maidstone, exhibited fruit; Messrs. Laing and Mather Carnations and single hybrid Chrysanthemums; Mr. Eckford, Wem, his famous Sweet Peas. Messrs. Cocker & Sons, Aberdeen, had a fine collection of herbaceous flowers, arranged in a huge bank; Mr. John Forbes, Hawick, showed herbaceous flowers and Carnations.

Messrs. Dobbie & Co., Rothesay, occupied 250 feet with 300 varieties of Dahlias arranged in sprays, interspersed with Ferns and backed with Palms—a glorious show; Mr. Kerr, Dumfries, also had Dahlias. Mr. A. Lister, Rothesay, exhibited Pansies, Dahlias, and herbaceous flowers. Mr. M. Cuthbertson, Rothesay, staged a table of herbaceous flowers. The show was well managed, and better use made of the vast space at the disposal of the Council than in former years.

WELLINGBOROUGH.—September 11th.

The second exhibition of the Wellingborough and Midland Counties Dahlia Society took place in the Corn Exchange on the 11th inst., and Mr. T. Pendered (the President) and the Committee must be complimented upon the remarkable success. Several of the southern growers and exhibitors of Dahlias came with their flowers, and so numerous were the entries that the capacities of the Corn Exchange were tested to the utmost, and some of the vegetables, which were numerously shown by cottagers and gardeners, had to be accommodated in an ante-room. There is no doubt that an important exhibition of Dahlias can be maintained at Wellingborough, if only the inhabitants will give it a proper measure of support. It is a centre readily reached from all parts, as well as in a district which appears to admirably suit the Dahlia.

Several classes were open to all England. The leading one was for twenty-four blooms, and there were nine entries. Some exhibitors had large, coarse, ungainly blooms, as if size would rule with the Judges above every other consideration, and they can now, no doubt, see how illusory was any such expectation. The stands from Mr. S. Mortimer, Swiss Nursery, Farnham, and Mr. Geo. Humphries, Chippenham, came so close together in point of merit that the Judges awarded them equal first prizes. The former had very fine blooms of John Hickling, J. B. Service, Mr. Gladstone, Shottesham Hero, Glowworm, Arthur Rawlings, Duke of Fife, Walter H. Williams, Frank Pearce, and Lord Chelmsford. Mr. Humphries' leading blooms were John Hickling, Glowworm, Mrs. Langtry, William Rawlings, Miss Cannell, Florence Tranter, James Stephens, Henry Walton, and Miss Fox. Mr. J. T. West, Cornwalls, Brentwood, was second; Mr. J. R. Tranter, Henley-on-Thames, was third. With twelve blooms Mr. Mortimer was placed first, having in fine character J. B. Service, Thomas Goodwin, John Hickling, Duke of Fife, Perfection, Shirley Hibberd, Glowworm, and J. T. West. Mr. West was a good second, and Mr. Tranter third.

Cactus and Decorative Dahlias are shown at Wellingborough on stands in the same way as the Show blooms, and they are decidedly effective, being less formal and uniform in appearance. Mr. Mortimer came in first with twenty-four varieties, having blooms of fine quality, the leading ones being J. E. Frewer, Princess Ena, Gloriosa, William Stredwick, Starfish, Mrs. L. Seymour, Matchless, Delicata, Cycle, Mrs. Gordon Sloane, and the spider-like Fantasy. Mr. J. T. West, who ran Mr. Mortimer very close indeed for first place, had excellent examples of Cæsar, J. E. Frewer, Mrs. G. Sloane, Ruby, Island Queen, Ethel, Octopus, and Beatrice. These two stands proved of great interest to the company, especially as they contained so much novelty. With twelve blooms the same exhibitors were first and second, again staging capital flowers.

For twelve bunches, three blooms of each, Mr. W. Baxter, Woking Village, was first, and furnished an admirable object lesson to the Midlanders in setting up Cactus Dahlias for exhibition. He had in fine character Fusilier, Mrs. L. Seymour, Beatrice, Lady Penzance, Miss A. Jones, and Mrs. F. Fell.

Pompons were shown in twelve bunches, three blooms in each, and Mr. J. Wright, nurseryman, Leicester, was placed first with fresh and bright flowers, rather larger in size than we are accustomed to in the South. Chief among them, Tommy Keith, Darkness, Favourite, Salmon Queen, Little Frank, and George Brinckman. Messrs. Yarde & Co., Northampton, were second. In all the foregoing classes there was a most encouraging competition.

Some open-to-all-England prizes for amateurs were also offered. The best twelve blooms, which were repetitions of those already named, came from Mr. R. Burgin, St. Neots; Mr. F. Middleton, Althorp, was second, and they occupied similar positions with six cut blooms. The best twelve blooms of Cactus came from Mr. H. A. Needs, Horsell, Woking, fine examples of varieties already given and admirably set up. Mr. J. York, Desborough, was second; and they were also first and second with six blooms, and also with six bunches of Pompons, Mr. Needs having nice neat blooms well set up. There were classes also for Dahlias grown by cottagers.

Prizes were also offered for fruit, the best collection of six dishes coming from Mr. Hayes, Castle Ashby Gardens. For Grapes, Apples, Pears, Mr. T. Pendered, the President, taking the first prize in the class for culinary Apples with a fine dish of Peasgood's Nonesuch, Cucumbers and Tomatoes; and there were various classes for vegetables, which were largely exhibited, and generally of good quality.

Certificates of merit were awarded to the following new varieties of Dahlias: Show Dahlia J. R. Tranter, from Mr. J. R. Tranter; Show Dahlia Mr. Pitt, a deep rosy lilac self, from Mr. G. Humphries; Cactus Dahlias Eastern Queen, very dark, and E. J. Deal, bright red, from Mr. S. Mortimer; Cactus Dahlia Mr. Moore, maroon and brilliant crimson, from Mr. J. Green, Dereham; Cactus Dahlia Island Queen, soft mauve-lilac, and Pompon Nellie Broomhead, from Mr. J. T. West.

A very interesting collection of Cactus Dahlias came from Mr. J. Green, and also of Apples from Messrs. H. & E. Lack, Wellingborough, and of Dahlias from Mr. W. Spriggs, the active Secretary of the Society, all of which were highly commended.

THE YOUNG GARDENERS' DOMAIN.

Anthuriums.

These handsome stove plants may be divided into two sections, the ornamental foliaged and the flowering varieties. The former have large, handsome leaves, some being a dark velvety green with silver midribs and veins, while others are a rich glaucous colour. The leaves of several are 3 feet long, and present a bold and striking appearance. It is only in large structures that such plants are seen to advantage, for they require plenty of room to develop their foliage.

The flowering varieties are much smaller, more compact in growth, and although they have not the beautiful foliage of the other section, the deficiency is amply made up by the beauty of their flowers. These vary in colour from white to the darkest shade of red, while some are spotted. They also vary in shape, some having them twisted and bent backwards. For cutting they are invaluable, and when arranged in glasses with Asparagus or Fern the effect is very graceful.

The plants are propagated by division, or if they have become tall sphagnum moss may be placed round the stem, just below the foliage, and if this is kept moist roots will soon be emitted into it, when the tops may then be taken off and potted. The remaining length of stem may be cut off about an inch from the soil into lengths having two eyes to each. Lay these in pans of sphagnum moss and place in a brisk bottom heat; keep moist, and they will soon commence growth. The remainder of the stem on the old plant will also grow if kept moist. Another method of propagation is by seeds, but this is tedious, and requires patience, as it is usually necessary to wait about three years before you are able to find out if your work is rewarded with good varieties.

The material most suitable for potting is two parts fibrous peat, one part loam broken into lumps, one part charcoal, with an addition of sphagnum. The pots must be thoroughly clean, and filled three parts full of crocks. When potting, raise the plants on a cone above the rims of the pots, taking care to work the soil thoroughly amongst the roots. Place them then in a moist atmosphere, where there is a temperature of about 70°, shading from the bright sun and keeping well syringed.

The best of the flowering varieties are A. Andreanum, A. delicatum, A. Louis Fournier, A. albanense, A. Madame E. Pynaert, A. Lady Iveagh, A. Scherzerianum, S. Wardi, and S. Rothschildianum. Among the best of the ornamental section are splendidum, Warocqueanum, Veitchi, and crystallinum.—Elveden.

Indoor Rockwork.

In forming an indoor rockery, the chief object aimed at is to imitate Nature as far as possible, arranging the plants so that rugged pieces of stone are visible, and choosing such as will prove interesting throughout the year. The best stone is common red sandstone, as on this light foliaged plants show themselves to advantage, which is not always the case when planted on white stone.

Many are the modes in which the rockery may be built. Centre beds with a rustic stone base look well, as there is a great advantage in being able to re-arrange the plants on the beds, and having frequent changes. Arches are desirable. A central column is needed to support them, which should span the house, and from which trailing plants, such as Panicum, Tradescantia, Selaginellas, and others should depend gracefully. Where the means are at hand water may be used, and whether in the form of a cascade, fountain, or tank, it gives the rockery an increased charm.

There is a great art in arranging the plants, so that each one shows itself to the best advantage. Plants that retain their beauty for the greatest length of time should be used in preference to short-lived ones. The most suitable plants for the rockery are Ferns and Selaginellas in variety, Rex Begonias, Saxifrages and Mosses, Coleus, and a host of others. Flowering plants may also be used with advantage. The best way with these is, when making the rockery, to leave pockets or crevices large enough to hold the pots, as by this means a constant supply of bloom may be maintained without the continual work of replanting.

The sides and roof of the house should be covered with creepers, gracefully festooned, to meet the plants growing on the rockery. Constant care is needful after planting, in the way of watering and damping, until the plants have got a fair start, and then very little work is necessary to maintain the beauty and freshness of the indoor rockery.—E. J. B.

Clerodendron fallax.

This plant is of immense value for decorative purposes, the splendid bright blooms contrasting well with the deep green foliage, and considering the time it lasts in flower it is a most desirable plant to cultivate. It may easily be raised from seeds or by cuttings, and both methods are good ; but so far as my experience goes the former give the least trouble, as the plants can be destroyed immediately after flowering, as when old they are liable to become harbours for insects.

We usually make three sowings—viz., January, March, and at the end of May, for the latest. The seeds are sown in pans and placed in a bottom heat of about 85°. After germination, and when the seedlings are large enough, they are transferred to 3-inch pots, while for the final shift 6 or 7-inch sizes are the most serviceable. The following soil suits them admirably :—Two parts of loam, one of peat, one of rough leaf soil, with coarse sand added. Firm potting is advisable, and they are placed in a heated pit with a temperature of 60° at night, increasing according to sun heat during the day, and closing early in the afternoon to raise the temperature to 85° or 90°, with abundance of moisture.

When the pots are filled with roots they should be watered three times a week with manure water, and occasionally top-dressed with some approved artificial fertiliser, as the plants are gross feeders. As soon as the flower spike can be perceived, gradually give more air, eventually removing to the greenhouse or conservatory, where they remain an object of beauty for a long time. By saving a few plants annually and cutting back after flowering earlier flowers are obtained. The earliest seedling plants follow these, and a succession of flowers will be produced from about the end of May till December. Care must be taken with the latest, or they will damp considerably, a rather dry intermediate temperature suiting them best to flower in.

The insects most prevalent on Clerodendron fallax, generally, are red spider and aphis. The former is best prevented by growing the plants quickly and well in a warm temperature heavily charged with moisture. Aphis must be destroyed by vapourising or fumigating. It is well known what splendid specimen plants Clerodendron fallax make by pinching the leading shoots and potting as required.—J. L. G.

FRUIT FORCING.

Cucumbers.—The plants for winter fruiting should be placed out as soon as they are ready, a good bottom heat being essential to success. The soil may consist of light turfy loam, with a third of fibrous peat, a sixth of old mortar rubbish and tenth of charcoal, the whole well incorporated. For imparting vigour later rely on surface dressings and liquid manure in preference to mixing manure with the compost.

Plants in Bearing.—Maintain a healthy and vigorous growth by a genial condition of the atmosphere. Avoid closeness by judicious ventilation, regulating the atmospheric moisture according to circumstances, so as not to induce stagnation through excess. Keep the growths fairly thin, going over the plants twice a week for stopping and removing superfluous growth, being careful not to overcrop the plants, cutting the fruit directly it attains the desired size. Be sparing in the use of water over the foliage, but damp the floors and walls in the morning and afternoon, also evening of bright or windy days, gradually however, reducing the moisture as the days shorten and the heat declines. Add a little fresh soil when the roots protrude through the ridges or hillocks, always previously warmed, applying weak tepid liquid manure once or twice a week as may be necessary. Aphides sometimes appear at this time. Fumigate on two or three consecutive evenings, being careful not to give an overdose of either tobacco smoke or nicotine vapour.

Figs.—*Earliest Forced Trees in Pots.*—In April and May dishes of Figs are very acceptable at dessert, and to produce them the trees are best grown in pots. Those not in large pots, say over 13-inch, should have the roots examined, and as it is not advisable to increase the size, a few inches of soil may be removed from the base of the balls. Loosen these a little at the sides to admit of fresh compost, remove the loose surface soil, shorten the roots, and replace in fresh turfy loam with a sixth of old mortar rubbish, and a small handful of bonemeal to a bushel of soil. Afford a good watering, and place the trees where they can have plenty of air with shelter from heavy rains and snow, also safety from frost.

Trees in large pots that are stood on brick pedestals to prevent their sinking require different treatment. In their case every particle of old fermenting material should be removed, also all the surface dressing from amongst the roots, with a hand-fork. After shortening the roots and attending to the drainage, apply a surface dressing of the compost named, and ram it firmly into the pots. Supply water to the soil for settling it, and after this keep the house cool, dry, and well ventilated until the time of starting in November or December. To trees not in as large pots as desired, and those requiring an increase of root space, a moderate shift may be given, the sides of the ball being loosened with a hand-fork, and any straggling roots cut back, those in the drainage being removed. Drain the pots efficiently, employ the soil in a moderately dry condition of the same composition as previously advised, and ram it as hard as the ball.

Succession Houses.—The trees which are ripening second crops of fruit require lessened supplies of water, not affording any until the soil is getting dry, and not then if the moisture is sufficient to keep the foliage from becoming limp, for that condition must be avoided. Withhold water from the house, except a sprinkling occasionally during bright weather, a little fire heat being necessary in dull and wet weather to admit a free circulation of air and prevent damp. Remove all soft and useless wood, thin out where crowded, and when the fruit is gathered cut away the growths that have reached the extremity of the trellis, and are not necessary for next year's bearing. It is absolutely essential that the wood be thoroughly ripened by the exposure of the growths to light and air, and the points of the shoots on which the first crop next year is borne ought to stand well up to the light.

Lifting Unfruitful Trees.—Exuberance and sterility characterise trees in too large and rich borders. Lifting such trees is a certain means, the trees having plenty of light, of inducing fruitfulness, and should be performed as soon as the leaves have commenced to turn yellow. If the trees are very luxuriant it is a good plan to make a trench about half the distance from the stem the branches cover of the trellis, and quite down to the drainage, so as to cut off all roots at the trench. This should be done while the leaves are quite green, fully a month in advance of their turning yellow, and it will check the tendency to late growth, concentrate the energies on the maturation of the wood and buds, almost always changing the character of these, so that they form Fig buds and produce a good crop the following year. Carefully lift the trees when the leaves turn yellow, cut back any strong and long roots, reserving those which are most branched and fibrous. Good drainage is of paramount importance, having a foot thick with a drain to carry off superfluous water ; there is nothing better than brickbats and a thin layer of old mortar rubbish over them. Good turfy loam, preferably rather strong and gravelly, a sixth of old mortar rubbish, and a similar amount of road scrapings form a good compost for Figs, and 2 feet depth is ample. Place the soil firmly in the border to insure a sturdy, short-jointed growth, and spread the roots evenly in the top foot of soil, working it amongst them, and placing them in layers as they rise, not covering the topmost more than 2 or 3 inches. Have the compost moderately dry when used, and afford sufficient water to settle it about their roots. A border of about one-third the width of the trellis—say, 4 to 6 feet—is ample for Figs, and much better than a wide one.

Pines.—*Suckers.*—Those recently started should be raised near the glass as soon as the roots are plentifully made, so as to secure a sturdy thoroughly solidified growth, especially in plants intended to be wintered in small pots. When the suckers become well rooted transfer the strongest started in late summer to the fruiting pots at once, draining these well. Employ the fibrous part only of sound turfy loam, in lumps proportioned to the size of the pots. Jamaicas are apt to become weak and attenuated in growth when grown in large pots ; 9 or 10-inch suffice for them, and they must not be grown away from the glass, or be kept very moist and close. Queens succeed in 10-inch pots, or very strong plants may be given a little more root space, say 11-inch pots ; Envilles have all their requirements as regards soil supplied in 10-inch pots ; Smooth-leaved Cayenne succeed in 10-inch pots, 11-inch at most ; and Providence in 11 or 12-inch pots. The small plants should be shifted into 7 or 8-inch pots, in which they must be kept until spring. Plunge the pots in a bottom heat of 90° to 95°, in which they must be continued until the roots have taken freely to the fresh compost, when they may be raised, a temperature of 85° being afterwards sufficient.

Growing Stock.—Young plants require free ventilation on all favourable occasions to keep them in a healthy sturdy condition, maintaining a night temperature of 60° to 65°, with 5° to 10° more by day artificially unless dull and cold, and keep at 80° to 85° from sun heat. Ventilate early in

the day, but not so as to lower the temperature, keeping the bottom heat steady at 80°. Water the plants whenever they require it, employing weak and tepid liquid manure. Avoid the use of the syringe too frequently, as sprinkling the paths morning and evening will suffice in all but very bright weather. Fruiting plants should have a night temperature of 70°, with 80° to 90° by day, closing at 85°.

Strawberries in Pots.—Watering the plants must not be neglected, but they are seriously injured by continued needless watering. The varieties intended for early forcing should soon be given the protection of frames, only using the lights in frosty weather and to throw off heavy rains and snow, ventilating freely when the weather is mild, withdrawing the lights when fair, and when wet tilting them. Any plants that have the soil very wet, and remain so for some time without watering, should have the drainage seen to. The crowns are often too numerous, not on La Grosse Sucrée, but on Vicomtesse Herieart de Thury. Where a number of crowns cluster round the central one, remove the small ones sideways with a wedge-like piece of wood without injuring the central crown or crowns or the leaves. This will concentrate all the vigour of the plant on the chief crown or crowns, and though there will be fewer trusses of bloom there is no need to fear a deficiency of crop. There is nothing like a loose surface for Strawberries in pots, which prevents the soil leaving the sides of the pots, and admits of the water passing evenly through the ball, moistening the soil thoroughly. A little dried cow manure or horse droppings, rubbed through a quarter-inch sieve, applied to the surface of the pots, will keep all right there. Remove all runners as they appear, also weeds, and do not allow the plants to suffer through want of room, giving them plenty of space for the full exposure of the foliage to light and air, which is essential to a steady growth and plump, well-developed crowns.

THE FLOWER GARDEN.

Bulbous Plants.—Any bulbs in a dry state are considerably weakened by being kept out of the ground much later than this, though as far as bedding Hyacinths, Tulips, Narcissi, and Crocuses are concerned they cannot well be planted before the beds are cleared of their summer occupants. In addition to taking an early opportunity of planting miscellaneous bulbs, newly bought in or otherwise, advantage should also be taken of a dry time in September or the early part of October for lifting, dividing, and replanting many of the bulbous plants already established on the place. Not that these require annual or even biennial attention, but most of them pay well for lifting and replanting every third or fourth autumn.

Anemones.—The apennina, nemorosa, vernalis, and coronaria types are all perfectly hardy. They are very beautiful in the early spring and summer months, and are simply indispensable where bright coloured flowers are largely required for cutting. They succeed admirably in a variety of positions, including fruit borders. They ought to have the benefit of a freely worked loamy soil to which road grit or sand and well decayed cow or horse manure have been freely added. Dispose the roots 2½ inches deep and about 5 inches apart each way.

Crocuses.—Patches of these in variety are very effective near the fronts of shrubberies and mixed borders, where, if they are planted early and about 4 inches deep, they will increase rapidly, paying well for lifting, dividing, and replanting every third or fourth autumn.

Crown Imperials and Fritillarias.—These ought not to be disturbed often, but if there are signs of failure or it is desirable to increase the stock of any of the varieties, directly their growth is completed, lifting, dividing, and replanting may take place. They ought not to be very roughly used, but a small ball of soil and roots should, when possible, be saved with each bulb, the replanting not being long delayed. Mixed borders and the fronts of newly formed shrubberies are the best positions for this class of plants, there being then no necessity for often disturbing them. Any bought in should be obtained and planted not later than October. All require a rather rich loamy soil, those that have been purchased or roughly used being well surrounded with sand. Plant just below the surface in groups of three or six bulbs.

Cyclamens.—Both C. Coum and C. europæum are comparatively hardy in the more southern parts of the country, and are admirably adapted for rockwork. The present is a good time for planting them; they ought to have a rather dry sheltered position and a light sandy soil to root in. Plant in groups of about three plants.

Dog's Tooth Violets.—These are more hardy than the foregoing, and are worthy of cultivation for their beautiful leaves alone. They thrive best in a peaty sandy soil, where, if not interfered with, they spread rapidly. The fronts of shrubberies and the margins of beds are the best places for them. If the soil is of a somewhat heavy nature add common peat and sand freely, or failing the former use abundance of good leaf soil.

Hyacinths.—Those permanently planted should not often be disturbed, but when they are moved, September and October, or before fresh root action commences, will be the best time to do it. Late in October or early in November is quite soon enough to plant new bulbs in beds or borders. The Grape, Feather, and Musk Hyacinths are of a very different character, and all are very effective in their way. Every four or five years is quite often enough to disturb them, and they ought therefore to be planted rather deeply in front of the borders. They are not particular as to the kind of soil they are planted in.

Irises.—About every third season the bulbous-rooted varieties ought to be lifted, divided, and replanted, taking care not to wholly clear the roots of soil. This may well be done now, and new bulbs planted as soon as they can be had. They all ought to have the benefit of a freely worked well-enriched soil, and if planted somewhat thinly, or about 8 inches apart, and fully 4 inches deep in beds, the surface of the latter during the winter and spring may be furnished with Alpine Auriculas, Pansies, and such like; and during the summer with Verbenas, Mignonette, and other tender plants that do not unduly rob the ground of moisture and fertility.

Narcissi and Daffodils.—These rank among the most serviceable and the most popular spring flowering bulbs that can be grown. To be constantly successful with them they must not be disturbed oftener than every third or fourth year. Single bulbs of choice varieties, given good room and not disturbed, soon surround themselves with offsets, all of which flower grandly when comparatively small, always providing they are not prematurely detached from the parent bulb. It will thus be seen that flower beds are not the proper places for any but the cheap Narcissi of the Polyanthus type; but they will do well near the fronts of mixed borders, shrubberies, and even the open spaces between fruit trees. Commoner Daffodils should also be extensively planted along side paths and drives in woods, and the poeticus type of Narcissi thrive admirably on the banks of ponds and lakes. It may not be advisable to dot them promiscuously over lawns and turf generally, but they thrive well and are very effective when grouped in the turf not far from shrubberies and under high spreading trees. In most cases the tops die down before the grass need be mown, and every season the effect will be greatly improved. From 6 inches to 8 inches apart each way is none too much space to allow all the larger varieties in the various sections, the smaller forms being located about 5 inches apart. Plant to a depth of about 5 or 6 inches. They will thrive in almost any kind of soil, but are most at home in a fairly rich free-working loam, sand or road grit being freely added.

Snowdrops.—These must be planted early, and not often disturbed, or otherwise the stock of bulbs will soon dwindle away. Groups of bulbs 2 inches below the turf on lawns, banks, in shady places, and the margins of lakes, shrubberies, and borders where they are seldom or never disturbed, rarely fail to increase rapidly and flower abundantly.

Tulips.—Any that have been long undisturbed in one place may shortly be lifted and replanted, and new bulbs of border varieties ought to be put out not later than the middle of October. Give them some fresh loamy soil and a little sand to each bulb.

THE KITCHEN GARDEN.

Cabbage.—In many districts wet weather, almost without a break, has been experienced ever since the "spring" Cabbage seed was sown, and as a consequence slugs have had matters nearly all their own way. Where hundreds ought now to be almost ready for pricking out, or even planting out, only a few solitary plants are to be seen. It is too late to sow more seed, with a view to having abundance of plants for moving again this autumn; but any raised soon might stand through the winter in the seed beds, and be available for planting out early next spring. The plan of sowing seed where a portion of the plants are to remain and heart-in early next spring is well worthy of a trial. Select good first early varieties, sow the seed on well-prepared ground thinly in shallow drills 15 inches apart. Directly the seedlings show through the ground dust them with soot and lime, repeating as often as necessary, by way of preventive of slug and flea attacks. If all goes on well a capital lot of plants will be available for transplanting next spring, those left a foot apart in the rows hearting-in early.

Celery.—Wet weather has also greatly interfered with the work of moulding up Celery. Advantage should be taken of dry days to push on with this kind of work, especially if the plants are opening out badly. Once the leaves assume their natural horizontal position they cannot be made to enclose the hearts properly, many of them also splitting when tied up. In all cases remove sucker-growth and the smallest leaves, and after the reserved leaves have been gathered well up together surround them with only enough fine soil to keep them upright. It may be found that partially moulded up rows are comparatively dry at the roots. Unless those needing it receive a good soaking of water or liquid manure before more soil is banked against the stalks "bolting" will take place prematurely. Much Celery is annually spoilt owing to neglecting the plants at the roots after earthing has commenced. If slugs or grubs are troublesome dust soot freely about the stalks. This may entail extra cleaning when the Celery has to be prepared for use; but that is better than disfigured stalks. Celery bandaged with strong brown paper prior to moulding-up is the cleanest of all when lifted for use.

Celeriac.—The Turnip-like base of Celeriac ought now to be swelling fast. These should be kept free from sucker growths and weeds, but must not be moulded up yet. When they are earthed over in October this will be done with a view to affording protection from severe frosts, not because any blanching is necessary.

Late Peas.—Hot weather in July and too many wet, dull days since has had the effect of practically spoiling numerous rows of late Peas. Mildew is rampant, and for this there is no remedy other than a change to warm, dry weather. Where the rows are doing comparatively well small birds have to be reckoned with, these emptying the pods before they are fit to gather. In the case of tall-growing varieties it is next to impossible to protect the pods, small birds finding their way through doubled fish nets even. The medium height to dwarf varieties grown entirely without stakes are the least interfered with.

Potatoes.—Lifting and storing should take place as much as possible during dry weather. As the Potatoes are lifted they should be sorted and stored at once. What drying is necessary can take place in the heaps before the tubers are covered heavily. This is the time to select tubers, and not after they have been spoilt by being treated similarly to the ware or cooking tubers. The latter must be stored in the dark, and

premature sprouting cannot well be prevented. Store all the medium-sized tubers intended for planting thinly in a light airy position, protecting from severe frosts only, and they will be very late in starting into growth accordingly. Ashleaf and other early and second early Potatoes wanted for planting purposes will frequently keep better undug than they will in comparatively warm cellars and other dark places, but they must be heavily moulded over, otherwise the uppermost may be spoilt by severe frosts.

Spinach.—Either the seed sown last month failed to germinate satisfactorily or many of the plants were eaten by slugs before they were noticeable. Where the rows are fairly regular blanks may be filled by transplanting from where the plants are too thick, doing this if possible on a dull day, and watering them in. It is somewhat late to sow more seed, but this should be done where extra wide gaps occur, and plants are scarce. Should the autumn be favourable to late growth a few rows of Spinach sown now may be of good service next spring. Thinning should be lightly done at first, and eventually to a distance of 6 inches apart. Weeds will be kept down, and slugs and grubs prevented from doing mischief, and a vigorous growth of plant promoted, by frequently hoeing among the rows and stirring with a pointed stake between the plants. A dusting of soot will also do good.

Turnips.—In some districts dry weather prevented Turnip seed that was sown from germinating, while in other parts of the country heavy rains constantly interfered with gardening operations generally, with the result that Turnips are likely to be scarce next winter. It is useless sowing more seed at this late date. All that can be done is to take good care of what plants there are growing by timely thinning, occasional sooting, and frequent hoeing among them.

PLANT HOUSES.

Fuchsias.—Young plants that are rooted should be placed singly into 3-inch pots, well watered, and arranged on a shelf close to the glass. Keep these plants steadily growing throughout the winter, and then if transferred into 5-inch pots they will flower early and prove useful for decoration. Where plants have not been rooted cuttings may still be inserted, young wood being selected, and as soon as they are rooted pot them singly, and give them a start in heat. When this practice is followed it is necessary to carefully harden the plants before placing them into cool quarters. A temperature that does not fall below 45° will keep them moving during the winter.

Solanums.—Plants that have set good crops of berrics and have been kept in pots should be supplied with stimulants. Soot water in a clear state is most beneficial for these plants; it acts quickly, and prevents the foliage turning a sickly yellow. Careful watering and feeding are necessary after the pots are filled with roots, or the foliage is liable to turn yellow and spoil the appearance of the plants. Those that were planted out and have set well may be lifted and placed into suitable pots. Where there is abundance of frame room and the Solanums were planted out the plants have a beautiful crop of berrics; but outside plants in many localities are not satisfactory. After the plants are lifted and potted in loam and one seventh of manure, place them in a northern position and give a good soaking with water. Syringe frequently until they commence root activity, when they may be placed in a sunny position.

Bouvardias.—Lift all plants from outside that are making robust growth, and place them into 6 and 7-inch pots, according to their size. Establish them on the principle advised for Solanums. When they will bear exposure to the sun arrange them in frames or in a cool greenhouse where they can enjoy full sunshine. Plants lifted at once will, if the present month proves fine, have every chance of ripening their wood and flowering profusely. Bouvardias in pots under glass must not have their shoots pinched again, but allow them to extend and form trusses. If staking is needed supply a central stake, and support the other shoots with matting. The trusses are not heavy, and thin pieces of matting will support them equally as well as using more than one stake. Feed plants in this condition with weak stimulants every time they need water. Yellow thrips are troublesome, but can be kept under by a free use of the syringe. Fumigation may be resorted to if syringing does not at once check their ravages.

Mignonette.—Plants grown for standards should have the flower trusses removed as they appear, and the shoots tied to the trellis once a fortnight. Keep the plants perfectly cool, so that strong growth will be made until the trellis has been covered, when they may be allowed to come into flower. Later plants required only for spring flowering should be supplied with their trellis, and given the same treatment. Let the whole of these plants stand on a moisture-holding base, and during bright weather syringe twice daily. Plants for pyramids can be tied to the wires or string as they extend. Care is needed to furnish the base first. Water carefully, do not give too much; on the other hand, do not allow them to become dry. Once they are allowed to approach dryness the plants become woody, and they seldom do well afterwards. Mignonette from seed sown in 6-inch pots and kept in frames until germination should be liberally thinned. Failure frequently results from allowing too many seedlings to grow together in the same pot. About half a dozen are sufficient. Sow more seed thinly for spring flowering. Place the pots in a frame, and shade until the seed has germinated, when the plants enjoy full light and abundance of air.

Calceolarias.—The earliest seedlings are large enough for small pots, place them singly into 2-inch, and grow them in cold frames. Those of a smaller size should be pricked out singly into pots or pans, 1 inch apart, so that by the time they fill the space they will be ready for potting singly. Shade from the sun, and keep moist.

THE BEE-KEEPER.

Packing Comb Honey.

Great care is necessary in packing comb honey, and although it is not in nearly such great request as it was a few years ago, there is always a market for well finished sections. It is, however, very disappointing to the bee-keeper, after having obtained sections well sealed and perfect in colour, to have them ruined through bad packing. Many dealers have given up stocking comb honey owing to the difficulty they have in keeping it in good condition. If it is delivered to them perfectly free from drip, which is often caused from imperfect packing, there is no reason why it should not keep in good condition for months, or even years.

In the first place, they must not be removed from the hive until they are well sealed over. Afterwards each section should be examined, and the propolis that adheres to the wood removed with a blunt knife. If any stains remain they may easily be removed by using a little coarse sand paper, and will then be as clean as when first used. This is a great advantage in offering them for sale, as they have a much more pleasing appearance.

Each section on its removal from the crate should be marked with a pencil to denote the top, as they must always be stood in the same position they occupied in the hive. This is important, as it is well known to the majority of bee-keepers that the bees always build their cells with an upward slope, so that each may be filled to its utmost capacity without overflowing, but reverse the comb and part of the honey will at once run out. This shows the care that is required in packing, either for short or long journeys. Also if not packed firmly, even when placed in the right position, it is easily damaged.

Size of Boxes for Packing.

I prefer boxes that will hold about two dozen 1 lb. sections; a few more or less is immaterial so long as the package is not too heavy. It is not necessary to have specially made boxes for the purpose, as grocers' empties, such as margarine boxes, are of a useful size, and answer the purpose admirably. First line the box with clean paper, and then place the sections closely together in rows in a single layer until the box is full. There will probably be an open space at the end in which there is not sufficient space to insert more sections; a piece of cardboard should then be placed over the face of the sections and turned over a few inches on the top. The space between the cardboard and the box should be filled with soft paper, also any space that remains between the ends of the sections and the sides of the box. This must be pressed in firmly, so that it is not possible for the sections to move even if they have rough treatment. The intervening space between the tops of the sections and the lid may be packed in the same manner, for which purpose several layers of newspapers are suitable. Small packages with firm packing is the secret of comb honey being sent long distances by road, rail, or water without injury.

Another Method of Packing.

Another safe method of packing comb honey is to place half a dozen 1 lb. sections together; at each end place a piece of thin wood slightly larger than the section, pass a piece of thin string tightly round the whole, and this will keep them in position. Wrap each parcel of six in paper and fasten firmly with string, care being taken that the sections are placed in the same position they occupied in the hive. It is, of course, advisable to place a prominent mark on the outside of each parcel to denote the top of the sections. This will prevent them leaking, which they will do if placed in any other position.

I lately had a practical illustration of the necessity of carrying out these instructions. Calling on a tradesman who deals largely in both run and comb honey, he showed me some packages of comb honey packed in parcels, as above. To all outward appearance they had travelled well, but on examination it was found they had been placed indiscriminately, and several of them were leaking badly, at least 25 per cent. being taken off their value. Had they been packed in the manner advised, and the tradesman duly advised of the fact, they would doubtless have been delivered in good condition. It is the small matters that make all the difference between good and bad packing.

In whatever form honey is packed, it is advisable to mark each package "Fragile, this side up, with care." By taking these precautions comb honey may be sent from one end of the kingdom to the other. Larger packages may be used, and two or three layers of these parcels can be packed in each box, but when this is done it is advisable to place a layer of hay at the bottom of the box and between each parcel of sections, when it is surprising the amount of rough usage the boxes will stand. It is not necessary to send large

packages by passenger train, as I have proved on several occasions they are carefully handled, and delivered in reasonable time when forwarded by a cheap rate per goods train.—An English Bee-keeper.

[Our correspondent, "R. I.," has sent us sections of honey, but omitted his changed address.—Ed.]

TRADE CATALOGUES RECEIVED.

Barr & Son, King Street, Covent Garden.—*Bulbs.*
W. Fromow & Sons, Chiswick.—*Bulbs.*
Hogg & Robertson, Dublin.—*Dutch Bulbs and Irish Daffodils.*
C. Phillips, Bracknell, Berks.—*Carnations and Picotees.*

TO CORRESPONDENTS

*** All correspondence relating to editorial matters should, until further notice, be directed to "The Editor," 8, *Rose Hill Road, Wandsworth, London, S.W.*, and *not* to Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Boards for Chrysanthemums (*J. C. B.*).—The size of boards for twelve Japanese Chrysanthemums, as fixed by the National Chrysanthemum Society in 1895, is 28 inches by 21 inches, 3½ inches high in front, and 7 inches in height at the back, the holes to be 7 inches apart from centre to centre.

Hollyhocks and Watsonia Ardernei (*W. Davies*).—The samples of seedling Hollyhocks are very good, but a strain cannot be fully represented by one selected variety. We cannot say that the blooms are equal to the best named varieties which we have seen exhibited. This would be more than could be reasonably expected. We wonder why you did not send several blooms of dissimilar varieties instead of three or four spikes of one variety. Your practice of sowing early in June, establishing the plants in 6-inch pots, and plunging these in ashes in a cold frame for the winter, we know from experience is good. The spikes of Watsonia are charming, but you do not indicate your method of growing the plants.

Artificial Manure for Vine Border (*T. C.*).—Of the three mixtures you name we should prefer No. 2—namely, three parts steamed bonemeal, two parts sulphate of potash, and one part ground gypsum; but instead of "steamed" we should simply use "bonemeal," as there is more nitrogen in it, and no loss takes place by the escape of the ammonia, as the soil holds it until spring, when, by conversion into nitrate, it can be appropriated by active roots, otherwise it passes off in the drainage water. The appreciable loss by volatilisation is scarcely worth mention in winter. Thus you would secure some available phosphoric acid, nitrogen, potash, and lime, with the energising sulphur, by the time the Vines put forth leaves and roots: then, if supplemented by the spring dressing, namely, three parts dissolved bones, 1½ part nitrate of potash, 1½ part sulphate of lime, and half-part sulphate of magnesia, the crop could not be otherwise than well nourished, and the Vines in good condition for another season. No. 3, however, has much to recommend it in case the border is somewhat sour by the use of stable or farmyard manure in solid or liquid form, but instead of gypsum we should use best chalk lime, air-slaked, three-quarters of a pound per square yard, and then follow with three parts dissolved raw bones and two parts sulphate of potash, first pointing the lime into the border, and using the "artificial" with the top-dressing of loam. You will get sulphate of lime in the dissolved bones, and the lime being down will not cause much, if any, loss of ammonia. It is not advisable to use kainit, except in making borders, as unless the border be outside the chlorine is not washed out, and the effect may be seen in the yellow colour of the foliage in spring, otherwise it acts well in the proportions you name—three parts bonemeal and two parts best quality kainit. If you use this, the border being outside, we should modify the spring dressing to three parts dissolved bones, two parts nitrate of potash, and one part sulphate of lime. In the kainit you will get magnesia, so there is no need to apply it again in the spring.

Diseased Carnations (*C. A.*).—The specimens shall be carefully examined. We have heard of syringing with limewash, allowing it to dry and remain on the foliage for most of a week, acting beneficially. Bordeaux mixture may be expected to be more potent. It has been found, by carefully conducted experiments in America, that a more dilute mixture than is usually advised answers equally well. The original mixture is therefore abandoned, and the following employed:—Copper sulphate 6 lbs., quicklime 4 lbs., water 45 gallons. Mix the bluestone and lime in separate vessels, the former in hot water, then place together, stirring thoroughly. Adding 1 lb. of softsoap in solution is said to be advantageous. The mixture should be applied with a sprayer, to rest on the leaves like dew, not running off them like rain after a heavy shower.

Kitchen and Flower Gardening (*Inquirer*).—The cheapest book we know which treats practically on flowers, fruit, and vegetables is the "Garden Manual," post free 1s. 9d., from the publisher, 171, Fleet Street. There are several designs on planting flower beds in the "Parks and Gardens of London," post free for, we think, 2s. 11d., from the same address. It is impossible to teach the use of tools on paper. If young men cannot learn their use in gardens they cannot rank as gardeners. The only safe way that we know in acquiring a business is to inquire for one for sale, examine the books carefully, and thus ascertain its value, on which the price can be determined. In some towns there may be room for starting a new business, but this, considering your unfortunate ill-health, would be too risky for you to undertake. You should have sent your name and address. If you want a higher class book on vegetables you had better enclose a stamped directed envelope.

Pinus halepensis (*Somerset*).—This, the Aleppo Pine, was introduced into this country by Bishop Compton in 1663. It is of rather spreading habit, and often has a thin appearance, as the leaves are not so persistent as many other species. It is said in Veitch's "Manual of the Coniferæ," an excellent work, to "thrive amongst the rocks of the Mediterranean shore, where comparatively few other trees find subsistence. The stems and branches often assume the most fantastic contortions, from the direction given to the south-west wind by the rocky angles exposed to it. In England it requires a sheltered situation." Your young trees will not be ready for planting for some time. They might, perhaps, succeed in the position you name, especially if some robust growing trees, such as Austrian Pines were planted for shelter now, though the probability is that the Aleppos would have a more or less stunted or "fantastic" appearance as they slowly advanced in growth.

Winter Dressing Vines and Fruit Trees (*J. Guy*):—The simple formula for preparing the mixture to which you refer as having been used successfully by Mr. S. T. Wright for dressing Vines and fruit trees at Glewston Court was taken by him from the *Journal of Horticulture*, page 513, June 27th, 1889. Mr. Leonard Coates there wrote from Napa, California:—"It is customary to spray our orchards thoroughly in the winter with a strong caustic solution made as follows:—½ lb. of caustic soda (Greenbank's 98° per cent.), ½ lb. of crude commercial potash (pearlash), dissolved in 5 gallons of water for Pears, Apples, and Plums, in 8 gallons of water for Peaches and Apricots, to be applied at a temperature of 130°. This wash will kill the eggs of almost any insect, and leaves the bark in a smooth, healthy condition." We have seen striking examples of the efficacy of this dressing in orchards, and at least one of its safety as applied to Vines. Finding last spring some young "red spider" emerging from under the bark of some Vines at Chiswick, Mr. Wright on raising the bark found colonies of eggs. Though the Vines were breaking to the extent of a quarter of an inch or more he at once dressed them with the solution, presumably the weaker form for safety. It destroyed every egg and emerging mite without doing the smallest damage to the Vines. By this prompt action all invasion of "red spider" was prevented. The Vines remained clean throughout the season, and are now ripening excellent fruit.

Analysis of Kitchen Garden Soil (*Ignoramus*).—We do not, as a rule, advise analysing soil. The analysis has often no practical value, for though showing the characteristics of the soil, there is nothing to show what parts of its constituents are available as food for plants, and what unavailable. For practical purposes we prefer to find the requirements of the different crops on a given soil by the effects or non-effects of manures. Analyses, interesting as they are from a scientific point of view, are of comparatively little value to the practical cultivator, and most intelligent workers get on much better without than with the tantalising elaborations of the laboratory. The analysis of a soil has to many a cultivator been money thrown away, for either he knows or does not the nature of the land, and unless he knows, the result of applying scientific methods without knowledge of their practical working, he will be disappointed. Most County Councils have an analyst, who for a fixed fee undertakes to analyse soil and crops. If you really desire to indulge in the luxury of an analysis of your soil by all means do so, and if your County Council cannot aid you, we will send the address of one or two competent gentlemen if you send a stamped directed envelope for the purpose. From them you can ascertain the cost of the work, and they would also naturally inform you of suitable manures to use, as we could if we knew the nature of the soil; but as to providing separate mixtures to all the different crops, we have never found it necessary to go to such trouble and expense. If you wish to experiment in that direction, send 7d. in stamps to Mr. W. Dyke, St. Margaret's, Ware, for his pamphlet and leaflet, and you will find plenty of good formulæ to begin with. This will be less costly than an analysis, though, of course, you can have this as well if you so desire.

Niphetos and Marechal Niel Rose Buds Browned (*Nuarb*).—The browning appears due to moisture resting on the petals, which destroys the tissues and can only be obviated by an early and free admission of air, including some at night, and thus prevent moisture from being condensed on the flowers. If there be a heating apparatus in the greenhouse the slightest warmth in the pipes would be sufficient to keep the air in motion and save the flowers; at least, we have found it so in a similar case. They damped in an unheated house, and in one with a very little warmth in the pipes and the ventilators partially open at night they were simply superb. We also found that some superphosphate made a wonderful differenee in the flowers expanding, and in their size and tint. The merest sprinkling occasionally of the following mixture acted well. Three parts dissolved bones, dry and crumbly; two parts nitrate of potash, finely powdered; and one part sulphate of lime, mixed thoroughly, used about every three weeks during growth, and washed in. This and cutting away all the weak growths gave stronger, which trained thinly gave excellent results. Owing to the letter being sent to the wrong address it was just too late for answering last week.

Preventing Club in Cabbage Plants (*D. P.*).—It is difficult to prevent club-root in Cabbage plants when so little time can be allowed between dressing the land and putting out the plants, as must be the case with spring Cabbage. Foul land requires drastic treatment, such as a dressing of gas lime, 5 tons per acre, leaving it on the ground for at least six weeks before ploughing in. Now it will only be safe to apply half that amount, and even then it should lie on the surface three weeks before being turned under, but we have used it and planted a fortnight afterwards with good results. The following dressing also answered well—Peruvian guano (8 to 9 per cent. ammonia), 2½ cwt.; mixed with 2 cwt. of salt per acre, applying just before putting out plants. What the land wants is lime, and in bad cases 10 tons per acre is nccessary, but 5 or 6 tons usually prove effective. As an alternative use 3 cwt. of steamed bonemeal per acre, and early in spring, or when the plants get well hold of the soil, top-dress with 3 cwt. of salt and 2 cwt. nitrate of soda per acre. The salt forms muriate of lime with that substance, and combines with ammonia, passing into nitrate of lime.

Names of Fruits.—*Notice.*—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. *In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing.* The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. *They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state.* (*W. P. C.*).—1, Tower of Glamis; 2, Beauty of Kent; 3, Beauty of Hants; 4, Hollandbury. (*G. N.*).—1, Winter Hawthornden; 2, Mère de Ménage; 3, Dutch Mignonne. (*J. B. D.*).—1, Autumn Bergamot; 2, Duchesse d'Angoulême; 3, Fondante d'Automne; 4, Williams' Bon Chrêtien; 5, Summer Thorn; 6, perfectly hard. (*H. C. G.*).—1, Loddington Seedling; 2, Court Pendû Plat; 3, Cox's Pomona; 4, Cellini; 5, Sturmer Pippin; 6, Northern Greening. (*R. D.*).—1, Ribston Pippin; 2, Warner's King; 3, Cox's Orange Pippin; 4, Irish Peach. (*C. F. G.*).—As we have repeatedly stated, it is quite useless sending Pears to us for naming which are perfectly hard. Please read the directions printed above and send again. (*A. A*).—Your Grapes reached us practically as a mass of pulp, and certain identification is an impossibility; 1, possibly Black Alicante; 2, may be the same; 3 and 4 suggest bad and good examples of Gros Colman. Your best course would be to visit an establishment where Grapes are largely grown, and find yours by comparison.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*Ignoramus*).—Lycium barbarum, introdueed from Barbary in 1696. It is one of the Box Thorns, and belongs to the natural order Solanaceæ. Its recognised popular name is the Tea Tree. (*D. F.*).—1, Ceanothus azureus; 2, Helenium pumilum; 3, Funkia grandiflora; 4, Colutea arborescens. (*V. W.*).—1, Odontoglossum crispum; 2, dead; 3, specimen insufficient. (*O. B.*).—1, Humea elegans; 2, Oxalis floribunda; 3, Geonoma gracilis; 4, Cocos Weddelliana.

COVENT GARDEN MARKET.—Sept. 15th.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	1 0	to 3 0	Grapes, lb....	0 8	to 2 0
Cobs	27 6	0 0	Lemons. case	11 0	14 0
Filberts, 100 lbs.	25 0	0 0	St. Michael's Pines, each	3 0	8 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, ½ sieve	0 0	0 0	Onions, bushel	3 6	4 0
Beet, Red, doz	1 0	0 0	Parsley, doz. bnchs	2 0	3 0
Carrots, bunch	0 3	0 4	Parsnips, doz	1 0	0 0
Cauliflowers, doz.	2 0	3 0	Potatoes, cwt.	2 0	4 0
Celery, bundle	1 0	0 0	Salsafy, bundle	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Seakale, basket...	1 6	1 9
Cucumbers...	0 4	0 8	Scorzonera, bundle	1 6	0 0
Endive, doz.	1 3	1 6	Shallots, lb.	0 3	0 4
Herbs, bunch	0 3	0 0	Spinach, pad	0 0	0 0
Leeks, bunch	0 2	0 0	Sprouts, ½ sieve	1 6	1 9
Lettuce, doz.	1 3	0 0	Tomatoes, lb.	0 4	0 0
Mushrooms, lb.	0 6	0 8	Turnips, bunch	0 3	0 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var. doz. ...	6 0	to 36 0	Ficus elastica, each	1 0	to 7 0
Aspidistra, doz....	18 0	36 0	Foliage plants, var., each	1 0	5 0
Aspidistra, specimen ...	5 0	10 6	Fuchsias, doz.	3 0	5 0
Chrysanthemums, per doz.	4 0	9 0	Heliotropes, per doz. ...	3 0	5 0
,, ,, single plants	1 6	2 0	Lilium Harrisi, doz.... ...	12 0	18 0
Coleus, doz.	2 6	4 0	Lycopodiums, doz.	3 0	4 0
Dracæna, var., doz.	12 0	30 0	Marguerite Daisy, doz. ...	4 0	9 0
Dracæna, viridis, doz. ...	9 0	18 0	Mignonette, doz.	4 0	6 0
Euonymus, var., dozen ...	6 0	18 0	Myrtles, doz.	6 0	9 0
Evergreens, var., doz. ...	4 0	18 0	Palms, in var., each... ...	1 0	15 0
Ferns, var., doz.	4 0	18 0	,, specimens	21 0	63 0
Ferns, small, 100	4 0	6 0	Pelargoniums, Scarlet, doz.	2 0	4 0

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms ...	2 0	to 4 0	Lily of the Valley, 12 sprays	1 0	to 2 0
Asparagus Fern, bunch ...	1 0	2 6	Marguerites, 12 bnchs. ...	2 0	3 0
Asters, per bunch	0 2	0 6	Maidenhair Fern, doz. bnchs.	4 0	8 0
Bouvardias, bunch	0 4	0 6	Mignonette, doz. bnchs. ...	2 0	4 0
Carnations, 12 blooms ...	1 0	3 0	Orchids, var. doz. blooms.	1 6	12 0
,, doz. bnchs. ...	3 0	6 0	Pelargoniums, 12 bnchs....	4 0	6 0
Chrysanthemums, 12 bnchs.	4 0	6 0	Pyrethrum, doz. bnchs	1 6	4 0
,, ,, 12 blooms	0 6	2 6	Roses (indoor), doz.... ...	0 6	1 0
Cornflower, doz. bnchs. ...	1 0	2 0	,, Tea, white, doz. ...	1 0	2 0
Dahlias, doz. bnchs.... ...	2 6	6 0	,, Yellow, doz. (Niels)	1 6	4 0
Eucharis, doz.	2 0	3 0	,, Red, doz. blooms ...	0 9	1 0
Gardenias, doz....	2 0	4 0	,, Safrano (English) doz.	1 0	2 0
Geranium, scarlet, doz. bnchs.	3 0	4 0	,, Pink, doz....	1 0	2 6
Gladioli, doz. bnchs. ...	4 0	8 0	,, outdoor, doz. bnchs.	3 0	6 0
Lilium lancifolium, per bnch.	1 6	2 0	Smilax, bunch	1 6	2 6
Lilium lancifolium, short, per 12 blooms	1 0	1 6	Sunflowers (various)... ...	2 0	4 0
Lilium longiflorum, 12 blooms	2 6	4 0	Tuberoses, 12 blooms ...	0 3	0 4
			Violets, doz. bnchs.... ...	1 6	2 0

SIDE BY SIDE.

The old copybook maxim was "Comparisons are odious.' Yes, so they may be; but for all that, at times they are necessary. Eaeh man and woman individually thinks that his own burden is the heaviest of all the burdens borne by mankind, and exeept in moments of great despondeney each one eonsiders he bears his burden better and is more patient than his neighbours. But we are apt to undervalue the fortitude of others, more through ignoranee than through any laek of good feeling. We eannot enter into all the little details of their ease, and we see the bright features with such a clear eye.

Our attention has been drawn lately to the price of American agricultural produee—that is, of the American States. We have before us a price list, if we may so eall it, of the vendable artieles in the hands of the farmers. We are asked to eompare these prices with our own prices; and then the question arises, Which of the two nations is in the better plight?

Well, if we eome to take the price list alone as our guide, undoubtedly we are getting more money for our goods, even bad as prices are here; but this is by no means all the question. We are asked to adjudieate on very insufficient data; in faet, we are asked to take a leap in the dark. An English farmer, were he required to make a balance-sheet that could be fairly understood by the multitude,

would have a very difficult task before him. We are not told one word as to the cost of production, and we always imagined that the cost of production formed the basis for a true valuation. Of course, there are such things as fancy prices; but these are just now beside the question.

An Englishman sets down first his rent, and greater than his rent, his labour bill, then rates and taxes, which are many and heavy, especially if he should happen to farm within the boundaries of an urban district. We know several cases of this sort where the tenant helps to pay for, but does not participate in, the luxuries supplied to his town brethren. The highway rates are always heavy —of late years this burden has increased—then come sanitary rates, school rates, excessive poor rates, and in many parishes certain special rates for the maintenance of dykes and strengthening of river banks. All this takes a great deal of capital, and these calls, instead of being stationary, are always growing. Then every year a large amount must be spent on artificial foods of various sorts, if we would keep our stock in health and up to the mark.

The bill for tillages, perhaps, is not exorbitant, for we buy carefully, and on analysis only, but the bill is there and has to be met. Then come all the minor expenses, tradesmen's bills, the blacksmith, the ironmonger or implement maker, the wheelwright, the farrier, and a hundred other oddments that together make a very substantial total. Then a certain sum a year must be written off for wear and tear of dead stock, and no farmer gets through a twelvemonth without several funerals, and usually the least valuable are spared.

All these items have to be taken into consideration before the price of one single commodity can be adequately fixed. We have a long time been doubtful as to the advantages of owning land. A tenant farmer gets pulled up by his landlord before he has time to become absolutely penniless. An owner goes on from bad to worse, with no remission of rent to help a bad season—he probably over-estimates the value of his land, and only awakes to the true state of affairs when he finds himself a hopeless bankrupt.

Our American friend says "three parts of our business is done on credit, the remainder on borrowed capital." He gives us no idea of the class of land farmed, no idea of rent, no idea of taxes, except that he states they are increasing. The class of farmer of whom he speaks seems to be on a par with our 50 and 100 acre men, for he says most of them do a great deal of their own work. Were the holdings larger, that would be an impossibility. He gives no wage table, no railway rate; but from his figures, living must be very cheap. He says the average Wheat crop is 13 bushels per acre. Well, all we can say is, either the land is very poor or shockingly farmed. Such returns would break the Bank of England. He does not tell us the quantity of Maize per acre, although he speaks of the price as 11d. to 1s. per bushel. These 13 bushels of Wheat per acre make 39s., and we have made less than that here, but we do not go on sowing such a poor paying crop. He speaks of Strawberries rotting on the plants. Why plant them so far from a market? "Good horses from £10 to £15." Well, that word *good* is open to much question, except where English sires have been used. The American horse does not amount to much. "Beef 2½d. per lb. (dressed), mutton 2½d. lb., hog (pig) 2d. lb." We do not know the beef and mutton, but we do know the hog is dear at 2d.

"Many of the farmers are paying interest from 6 to 8 per cent." Well, they either do not offer very good security, or America must be an El Dorado for investors. We cannot find a safe investment here paying more than 5 per cent. Certainly the Americans can teach us one good lesson, and that is how to make machinery light as well as strong. They have a pull there, and we owe them a great debt for handy useful implements, easy to work and good to keep in repair. But we may have too much even of machinery, as many English farmers have found to their cost this autumn. As all the corn crops were fairly even and level, with no laid places or twisted or storm-broken patches, a great breadth has to be cut and tied by machinery. All went merry as a wedding bell till the weather broke. The farmer had been congratulating himself on the saving in his labour bill; but when a press of work came, when the bright harvesting days were few, where were the men? No machinery can fork into waggons, no machinery can stack, and the short-handed farmer found himself involved in a fearful difficulty.

In this uncertain climate it will always be a case of men and machinery—men first. To put the matter shortly, the American farmer has only himself to thank for the ruin which stares him in the face. The majority of them started with little or no capital, save the capital locked-up in a virgin soil. That soil they have cropped and cross-cropped, in defiance of every known rule of agriculture, and now they find the land no longer yields her increase.

It is only by careful rotation of crops, by constant manuring and first-rate tilling that land for Wheat growing can be kept in heart. We have learned our lesson this side of the Atlantic, and our brethren are learning their lesson now. By-and-by the world will need all the corn land there is, and will demand that such land be treated so as to yield the highest possible returns, and then there will be a chance (and not till then) of corn growers being owners of a remunerative crop. Here, in the old country, it is considered absolutely necessary, or was a few years ago, to have capital at the rate of £10 per acre. Have our American friends as a body ever had 10s.? We fancy not.

WORK ON THE HOME FARM.

Thatching has been almost completed during the past week, but the weather has been so bad that the Barley rakings are still in the fields, and likely to remain there unless we have a change. They are seriously damaged, but having all the sheaves safely stacked we must not grumble, but be thankful we have done so well. We hear very bad reports of damage done to grain still outstanding, and find the damage much more widespread than we had expected. Having measured others' good fortune by our own, we are sorry to discover the mistake, and trust that a spell of fine weather now may do much to minimise disaster.

We have run the cultivator through the stubbles, but the weather has been much too wet to do anything else there, but ley is now ploughing well, so there is plenty of work for the horses.

Two days' threshing have given us a fair idea of what harvest results are likely to be. Wheat, as we have stated before, is a fair yield, and the quality is good. Barley thrashes smaller even than was anticipated, and the portion of tail corn is large. Colour is very good, but we suppose the maltster will want size this year; he always asks for that which the farmer has not got to offer.

Midseason Potatoes are being marketed. They are a light crop, and though meeting a better demand than usual at this season they are not making much per acre. The late kinds are making second growth, and are, in fact, almost in full flower. This will mean a much increased crop, but deterioration in quality and a late Potato harvest, which is invariably an expensive one.

Ewes have now been running with the ram some time where early lambs are wished for, and farmers are generally putting them together. Hedges about home, if not trimmed before harvest, should be attended to now before the extra hands are paid off; there is always plenty of work for the regular men during the winter at scotching and plashing.

This is a good time to paint or tar gates and fences.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

DATE. 1897. September.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp. of soil at 1 foot.	IN THE DAY. Shade Temperature. Max.	IN THE DAY. Shade Temperature. Min.	IN THE DAY. Radiation Temperature. In Sun.	IN THE DAY. Radiation Temperature. On Grass.	Rain.
	Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Inches.
Sunday 5	30·006	53·2	52.4	S.W.	55·1	60·5	44·9	68·1	41·3	0·363
Monday 6	29·814	58·2	54·6	W.	55 9	65·9	53·2	104·9	52·1	—
Tuesday 7	30·013	56·2	52·7	N.W.	55·9	64·3	47·0	110·5	44·0	—
Wednesday 8	29 968	54·5	51·8	N.	56·2	60·4	48·3	84·9	45·1	0·149
Thursday .. 9	29 994	51·3	50·3	N.E.	56·0	62·0	51·0	103·7	51·0	—
Friday 10	30·269	57·2	50 9	N.E.	54·8	65·4	42·4	111·6	36·8	—
Saturday .. 11	30·413	56·1	52·9	N.E.	54·4	67·1	44·3	108·4	39·8	—
	30·068	55·2	52·2		55 5	63 7	47·3	98·9	44·3	0·512

REMARKS.

5th.—Rain early hours up to noon, and again from 6.30 to 7.30 P.M.; dull, damp, and cold all day.

6th.—Morning fair, and afternoon bright.

7th – Bright early and up to noon; cloudy till 4 P.M., and sunny after.

8th.—Overcast early; generally sunny morning; overcast from about noon, and rain at night.

9th.—Rain early; dull till 10.30 A.M.; afterwards alternate sun and cloud; bright at night.

10th.—Bright and sunny all day, fine night.

11th.—Fine morning; dull about noon; fair afternoon, and fine night.

Much finer than the previous weeks, and also cooler.—G. J. SYMONS.

Journal of Horticulture.

THURSDAY, SEPTEMBER 23, 1897.

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PRIZE GRAPES.
(FROM YOUTHFUL VINES).

WINNING the first prize for Muscat Grapes at a Shrewsbury Show is quite sufficient evidence of the excellence of the produce thus honoured. Mr. W. Neild, Horticultural Instructor at the Cheshire Agricultural and Horticultural School at Holmes Chapel, was the most successful exhibitor of two bunches of Muscats at the last great Show; and not only so, but the Grapes were cut from Vines that were raised from eyes last year, and within eighteen months from the time those eyes were inserted. Believing such results worthy of approbation, and the means by which they were attained of publication, we have obtained the following particulars from Mr. Neild, and we thank him for supplying them. He writes:—

"The Vines that produced the first prize Muscat Grapes at Shrewsbury this year were raised from eyes or buds inserted early in March, 1896. The method adopted was to place each bud separately in a small piece of fibrous loam. For the purpose of inducing the formation of roots the buds with their cubes of soil were placed on a thin board resting on the hot-water pipes in the house in which the Vines were subsequently planted.

"As soon as the roots had penetrated to the outside of the soil, and the shoot or stem had grown 3 or 4 inches in length, the young Vines were transferred separately to boxes 12 inches square and 3 inches deep. When the stems were about 2 feet long, and before the roots became matted together, the Vines were planted in the permanent border, and shaded for a few days to prevent the possibility of injury by strong sunshine.

"The border is being formed in sections; at present it is 3 feet in width, 2 feet of this inside the house and 1 foot outside; the front of the house is built on arches, to permit of the roots passing outside. Last year the Vines made strong sound growth, reaching beyond the top of the rafters before the end of the season.

"In the winter they were pruned to within 3 feet of the border, and they are now $2\frac{3}{4}$ inches in circumference at 1 foot above the soil. In spring the buds burst freely and regularly, several of the laterals showing five bunches on each, but were

reduced to one. The bunches exhibited weighed 4½ lbs. and 4¼ lbs. respectively.

"Reverting to the border, its depth is 2 feet 3 inches, or 1 foot 9 inches of soil and 6 inches of drainage. The composition of the border is as follows:– To every six cartloads of soil was added one of old lime rubble, two barrowloads of charcoal and wood ashes, and 2 cwt. of raw half-inch bones. Beyond this no manure of any description was added. The soil, which was taken from the surface of a pasture field, was of a heavy and retentive description. It was not rich in nitrogenous food, which was practically limited to the roots of the various grasses and other plants growing in it. It was also deficient in lime.

"The soil was chopped up roughly, and the other materials thoroughly mixed with it before making the border. When the compost was in a moderately dry condition it was firmly packed together, so that but little settling has taken place.

"During the summer of 1896 a comparatively small quantity of water was applied to the border. A larger supply has been given this year, but still much less than is frequently advocated by some cultivators. It has been asserted that if a Vine border is well drained it cannot be 'over watered.' My belief is that quite as many Vines are ruined by the application of an excess of water to their roots as by using it too sparingly. Some soils have a much greater capacity for holding moisture than others, and consequently they do not require to be watered so often; but whatever the character of the soil may be, whenever water is needed it should be given in sufficient quantity to thoroughly moisten the entire mass.

"The good condition of the soil and the requisite food constituents are essential to the growing Vine, but I believe that the atmospherical conditions to which Vines are subjected are of at least equal importance. Grapes of good quality can be grown when the borders are in an indifferent state, provided the atmosphere of the house is in the most favourable condition for Vine growth.

"The bottom of the border was concreted to prevent the descent of the roots into the clay subsoil. A thorough watering with weak liquid manure was given before the Vines came into flower, and again after the stoning period of the fruit was passed."

Such is the plain practical narrative of the preparation and precedure adopted by Mr. Neild, who is to be congratulated on the success he has achieved so soon at the greatest show of Grapes in England. He is evidently not a believer in "big" borders, nor are we, and he also knows that the best of borders fail in producing superior Grapes in the absence of otherwise good cultural treatment. We rather think we have somewhat of a sensation in store in the way of Vine borders, and hope to show the smallest on record in proportion to the crop of Grapes it has been made to support.

THE OLD GARDEN—A MEMORY.

THERE is a constant, nameless grace
About the dear old-fashioned place
I never can forget.
I find it in the Hollyhocks,
And in the scented rows of Phlox,
The beds of Asters, fragrant Stocks,
And darling Mignonette.

The dear old flowers our grand-dams knew,
The dear old shrubs they loved and grew,
Still make it sweet and fair.
The modern grower, who insists
On novelties from seedsmen's lists,
With barbarous names by botanists,
Will find small pleasure there.

The above tuneful lines by "M. S." in the "Westminster Gazette" come opportunely, one ventures to think, and if savouring of a sentiment which praises the past to the depreciation of the present, one cannot but admit the soothing and softening influence they possess; and few probably will deny the value of these little asides which retouch the notes of some long-forgotten harmony of early life, whose faint reverberations are all but drowned in the din and rattle of latter days.

If the pleasures of gardening are enjoyed as much by anticipation as they are in realisation, like so many of the pleasures of life, retrospection possibly affords the most unqualified satisfaction, hence "A Traveller" tells his little tale of woe, and "Invicta" pines for the open-air Peaches of his boyhood days, softly impeaching those who neglect their walls, and ever and anon some old showman resting on his laurels figuratively shoulders his crutch and shows how fields were won in the brave old days of long ago.

Now, in low-toned cadence "M. S." touches one tender spot that all must have in their hearts, conceal it as they may, for the old-fashioned garden — the garden of auld lang syne. Fewer and farther between as we hurry along are these havens of all that is restful, such an one as above depicted; for somehow this restless spirit of the age appears to have invaded most gardens, and, where it rules, all must be "up to date." What "dear old-fashioned place" inspired our gentle singer to chant its charms we need not inquire. That such with "their nameless grace" still exist it is good to know. One wishes, daring as the wish may be, to keep them; one hopes, though vain may be the hope, that the improving (?) hand may never there display its trained dexterity, and improve them out of existence.

Our smart young gardeners, what think they of our theme? Is it of "such stuff as dreams are made of?" Possibly. But granted that it is so, I would that they momentarily closed their eyes on all that is so big now, even great Shrewsbury; upon all that is so smart and so severely trim, and hie back with me to a Gloucestershire garden. Lest any should imagine that such an illustration as I will endeavour to re-draw is not adapted to our present "up to dateness," I dare venture to assert that the flower borders would adorn in their "nameless grace" any garden in proportion to its size, from that of prince to peasant. Far removed by what seems to be a lifetime; ever journeying and settling, in the vicissitudes of life, there is one treat long self-promised, and that is to renew acquaintance some day with "the dear old-fashioned place." Ah! some day. I know it cannot be, for good men there of high and low estate have gone; yet, happily, one retrospective peep in memory's mirror flashes back the whole scene of that old garden of delight.

I do not know but what even then, when last seen, that changes were not in contemplation, for it was remarked that "Old Eph" was "on his last legs," not but what one supposes they were the identical pair which had borne him through a long and honourable life of labour, which was certainly one of love in caring for these particular flower borders, over which he ruled despotic. These ran parallel with the path, which in its turn ran centrally the full length of a long rectangular garden, some 4 acres in extent. The first time I saw these borders was at this season of the year in all their autumn glory, and during my sojourn they were a source of endless gratification, no day passing without a visit to them at early morn or dewy eve. It is but right to remark that my old friend, as I came to regard him—we had so much in common—was not the head gardener, never had been, nor ever had aspired to the post. For some forty years on the regular staff, the last decade of life found him generously allowed by the noble family he had humbly and faithfully served to work or rest on the same terms as when the bent back was straight. He chose to work, and chose wisely, as the guardian of the two long flower borders, to their decided gain.

Such a glorious vista of colours and of grace, such fragrance, it would be difficult to equal, impossible to surpass. Though possessed of a supreme contempt for all the primness and uniformity so characteristic of the bedding craze then in vigorous youth, the old man did not disdain to gather up what he could of the surplus stock of Nosegay "Geraniums," Fuchsias, Heliotropes, or what not, and "stick them in" here and there as gaps occurred, to adorn his darling borders. That these were "the dear old flowers our grand-dams knew" is doubtful, but "the dear old shrubs they loved and grew" were there. Lavender and Rosemary, Southernwood and Sweet Briar rubbed shoulders with big bushes of scented Verbena; and as for "Asters, fragrant Stocks, and darling Mignonette," they were there galore. Sunflowers, Sweet Peas, and Peas that if not sweet were bright in their perennial ramblings were there, with majestic Hollyhocks towering over all. What a medley it was surely, and here and there one detected a piece of red worsted tied round the neck of some flower or seed pod, which "Old Eph" designed to multiply, as of the best in the borders.

He was always busy on the "last legs," always genial—to me—although he was said to be a "bit cranky" by those who had no sympathy with his loose flower gardening ways. True, some tall plants had a habit of being near the walk, and short things *vice versâ*, yet it would have been a libel to say that anything was uncared for. Even a "Chaney Aster," ere it could bow its heavy head, if inclined to do so, was supported, though all his staking was very heterodox, being merely a support in the way the plants were inclined to go instead of the right and proper (?) method of bunching them upright in regimental correctitude.

It may not be seemly, some may think, to ramble on about things of the past. "We are altering, and have altered, the wildness of the old gardens," probably not a few can say; but

You may break, you may shatter the vase as you will,
The scent of the Roses will cling round it still.

—THE SQUIRE.

TRAINING FRUIT TREES—THE JUMBLE SYSTEM.

I DID not head my letter, on page 235, Decadence in Wall Tree "Culture;" someone else has done so in the rejoinders on page 260. I will therefore, if the Editor permit, try and make my point clear, as above. "E. D. S." explains it very explicitly when he says, with truth, "The crowding of branches, large and small, is a too common source of failure in the culture of wall trees," going on to say, "If branches at their formation were disposed more thinly, the management subsequently would be easier, and the results considerably increased;" or, in other words, the better and more correctly trees are trained, the less time they require in management, and the better the returns in proportion to the labour expended on them. That is my case precisely, and "E. D. S." is exactly right. He seems to know very well that a jumble of three or four times more branches than a tree ought to be burdened with must, of necessity, take more time in keeping in order than a tree with so many less to be pruned and secured to the wall and kept clean. I have not seen a man yet, and I have shared fruit tree work with a few scores, who has been able to train and attend to three or four branches, and to complete the work in the same time as he would finish one; and if it should be my fortune to discover such a prodigy, I shall not have lived and loved gardening, and written in vain.

Thank you, "E. D. S." I think you must be older than your frisky co-responder, who, after a peculiar dance in dialectics, strikes a (borrowed) dramatic attitude, and tells us with a whoop he is "off." Is he? Well, the old "gardener-hunter" is after him, intends catching him up, and making him face the "music."

And so "H. D." is really "young." He tells us so in the sixth paragraph of his declaration, as may be seen by all who care to turn to it on page 261—young, but "not vain." Oh, no; his youth forbids—or he might be. So youth is his salvation. Only "a few years ago," as he let us know in the historical paragraph, he "was in button clothes." The words cited are his own, not mine; yet this young man of bright promise—on paper has had more experience than one whom he infers, and probably with accuracy, is much older than himself. Surely the logic is rather shaky, but it is only an instalment.

Listen. This valiant young knight of the knife and the pen hastens to say in his second paragraph that while men might work as hard in gardens fifty years ago as they do now, they "certainly"—mark the word—did not work more hours. Now to be "certain" is to speak from personal knowledge; and having in view the confessions he has permitted to escape him, notwithstanding those "grey hairs," one is again tempted to wonder how old he is, and to marvel at his memory of what he saw in 1847; and even further still to wonder if he had seen a tree or a man at work at all at that time. Yet how "certain" he is about the hours of working.

It is a fact that his antiquated and inexperienced senior was training trees under the old masters within ten years of the accession of the Queen, and has, consequently, passed his jubilee as a worker—training them as a training for himself, and rejoicing in it till the creeping on of twilight in the dog-days; training them when the boundary walls of the home enclosures were the pride of their owner, his gardener, and visitors. Why? Because of their complete covering in every part from the ground upwards with properly spaced branches laden from base to extremity with handsome and much cherished fruit.

As a matter of fact, young gardeners in those far-past days were as ready to attend to wall trees, early and late when it was necessary to do so, as they are now to work overtime in thinning Grapes. They took pride in the trees then, and were as happy in working on them as "H. D." was when "handling the scissors" at four o'clock in the morning. This pride in outdoor work which then prevailed has largely vanished. It commenced waning about thirty-five years ago, when the men began to be surfeited with overtime during the bedding mania through potting scores of hours by candlelight in early spring, and then in watering, pinching, trimming and finnicking over flower beds and ribbon borders through summer evenings till the time for taking cuttings came round again. There is not much wonder that they had enough overtime to more than satisfy them. It is this lost pride in the work of training, pruning, and managing wall trees that told adversely on their condition—not at once, but in the course of time—until in innumerable instances the right word for inscribing on numbers of garden walls was Ichabod, for their glory had departed.

Talking about "want of time" for attending to wall trees, through the claims of "dinner table decorations," as accounting for the deplorable condition of so many of those trees, seems almost like trifling with the subject, though ardent young men may be firmly convinced that such talk represents the profoundest reasoning. It is a mere skimming of the surface. The unfortunate change that has been brought about is the result of a combination of influences operating in various ways for more than a generation.

A transfer of interest from one subject to another gradually, but surely, leads to a loss of pride and a weakening of zeal in respect to the subjects left behind; and this depreciation can have no other result than a loss of knowledge of a particular kind for a particular purpose. The effect of this, as applied to the training and culture of fruit trees, such as once made garden walls ornamental and profitable, is that there have been, at any time during the past twenty years and more, hundreds of young gardeners who could not train from its foundation and build up a really good wall tree to save their lives.

I do not suggest that "H. D." belongs to that category. On the contrary, I am inclined to think he knows just enough to know better, and hope it is so. He has not told us that he has planted trees, trained them from the beginning, furnished walls with them, and kept the straight thinly disposed branches in a fruitful state throughout their entire length over a period of more than twenty years. If he cannot tell us he has done this, what is his authority for attributing ignorance to those who have, and there are happily several such still existing?

True he has told us that the "guiding spirit" of this Journal has praised some splendid trees of which he had charge for "many years." Will he tell us what he means by "many?" He ought to be able to do that without difficulty, and until he does nobody will know how many his "many" counts. Then will he further tell us whether he planted those trees and trained them from infancy into their splendid condition, or whether someone else did the foundation work before his time? As a practical man he will recognise the pertinency of these questions.

Then, again, when the "spirit" praised those trees, did he, or it, do so because they were splendidly trained, but barren, and such as a man wasted his time over; or because they were both admirably trained and fruitful, and such to which intelligent labour was not misapplied? If they were "barren," why cite them as examples of the knowledge and skill of the dresser? If "fruitful" why condemn splendidly trained trees that bear crops of fruit worthy of praise? Our bright young star may choose which horn of the dilemma he prefers, and rest on it as comfortably as he can; he cannot sit on both, as they are too divergent, and if he attempted he might, perhaps, experience one of those "nasty falls" which he seems to anticipate.

As "H. D." canters away he leaves a few other footmarks behind him, but they mostly lead to the jungle, where the lion lurks. Well trained trees only last a few years; the branches die; they only bear at the tips. Such is the gist of his dolorous ditty, and he almost glories in their miserable condition. The other view is that the best trained and managed trees, like the best trained and managed Vines, are just those which remain productive the longest, and cost the least in labour. The reasoning of our reformer seems very much on the par with the crooked and many branches he loves. He seems to shudder at a straight one as a monstrosity, and appears "gone" on "side shoots" and the time-absorbing "laying in."

Did he ever see a wall of cordon Pears with the (to him) horribly straight stems roped with fruit? He would, of course, soon alter that by laying in those precious side shoots between them; and does he know that a really well trained tree is composed of a number of straight properly distanced cordons? Whether he knows or not, he would not let them stand in beautiful fruitful isolation, but lace in the side shoots, or set his labourers to do it, and call it "training;" it is in one sense worthy of the name, for it is training on the modern jumble system. On such preference, all I will say more to-night, as the hunters' moon is getting low, and the midnight chimes are dying, is *Chaçun à son goût.*—MELTON.

HARMFUL AND HARMLESS GARDEN MOTHS.—8.

"Do not forget the puss-moth," said a friend; "feline in name but not feline in nature; a cat to which gardeners have not the dislike they feel towards the four-legged one." Well, the puss-moth does occur about gardens sometimes; I have seen it in several along the Thames and New River, where the side of the ground next the stream is edged by Willows, and it no doubt visits other gardens near which grow these, or Poplars.

Seldom does a puss-moth rest on the trunk of a tree, like many moths will, till their hour of flight arrives. Guided by the mysterious force we call instinct, it prefers to secrete itself amid foliage, the thicker the better, as offering more security from a hungry bird. To some of us older entomologists this insect is associated with several metropolitan cemeteries, where the caterpillars used to be often seen upon the Weeping Willows appropriate to such places, and, since the days of Izaak Walton, or before, it has been familiar to anglers, owing to its occurrence besides rivers or brooks. (I am not aware, however, that any angler ever tried the caterpillar as bait, though it might tempt a voracious fish.) This moth, which comes out in May and June, is greyish, with yellow wing-rays and numerous dark markings, the body white, having on it black spots and bars. Nothing about it

is particularly suggestive of a cat, unless it be the head seen in profile when the insect is reposing. Probably, however, it was rather some appearance or attitude of the caterpillar that prompted the English name, for it certainly is very peculiar in form and marking. One of its singularities is the possession of a pair of horns at the tail, which the insect raises aloft while crawling, and from which it can thrust out inner horns or filaments, but they have no power of wounding or striking, being seemingly only flourished to create alarm. Now, when the puss caterpillar is but a week or two old it is nearly black, and has two little knobs, like ears, standing out on each side of the head, and, if in repose upon a leaf with the two horns folded together, it really does much resemble a crouching cat in miniature.

About August, or a month later, we may discover the full grown caterpillar on some Willow or Osier, but the species is not so abundant as to be injurious. Ruminative after eating, it then rests with both extremities elevated, and the head drawn back into a curious pink recess, having two black spots, which form the first segment of the body. Though the tail is harmless, the caterpillar has its means of defence, and if provoked, can squirt from an orifice under the chin a pungent fluid, probably acid, which, should it touch the eye or lip, causes sharp smarting. This may keep off insect enemies, perhaps birds. The cocoon, constructed upon bark, is so hard that it will turn the edge of a knife. Allied to the puss (Dicranura vinula) are some smaller moths called kittens, mostly rare, somewhat like it in markings, and in habit similar. Strolling one day in a garden at West Kensington, I took upon a Poplar the caterpillar of D. bifida, which has more variety of colour than the larger species, and feeds only at night. I should hardly hope to find this insect now about London suburbs.

September brings out the figure-of-eight moth, a moderate sized insect, owner of the long Latin name of Diloba cœruleocephala, originated by the blue head of the caterpillar, on the crown of which are two black spots. The body is green and yellow, dotted with black warts; therefore it is conspicuous upon the Hawthorn hedges, where it feeds in June, though we never see a number of them together. I have taken specimens occasionally off the Plum and Apple; abroad the species is well known as a foe of fruit trees, showing partiality for the Peach and Apricot, and requiring to be hunted after. In fact, Continental gardeners not only seek the caterpillar, but also the cocoon, made of silk and leaves, which is attached to the under side of some twig. The moth, which has its English name from two white spots on the brown fore wings, shaped rather like the figure mentioned, puts its eggs in patches of six or eight, choosing shoots upon which the leaves will expand earliest, from their position. These eggs remain through the winter, and hatch about April, according to the weather.

When the autumn breezes are thinning the leaves on our shrubs and trees, we may notice upon an Elder bush or a Honeysuckle, perhaps upon the Blackberry or some fruit tree, a twiggy-looking caterpillar, of some shade of brown, with two little points at the tail and seven humps along the body. This is the caterpillar of the swallow-tail moth, Ourapteryx sambucata, very common in the South of England. We come across it also feeding upon herbaceous plants in borders, apparently enjoying a change of diet; but feed where it may, this caterpillar invariably seeks a tree as winter approaches. Taking a place in some angle of the branches, or under a piece of loose bark, it remains motionless till April is well advanced, and becomes adult in June, spinning then a rather slight cocoon of silk, into which bits of leaves are worked; it is usually suspended like a hammock from some twig or branch. During July the largish moth flies about gardens and hedgerows, notable from its pale colour, nor is it difficult to capture. It is of a light yellow, streaked with olive brown, the hind wings having two short tails. However, it is not an insect we are called upon to destroy, the caterpillar doing no mischief worth recording.

The smaller brimstone moth (Rumia cratægata) is frequent along country roads through the summer season at intervals, and passes also into gardens, owing to its being associated with the Hawthorn, the chief or only food of the caterpillar. In colour the moth is a much brighter yellow than the preceding, with conspicuous red-brown spots. The caterpillar is brown and humped; it may be taken while the moths are on the wing, since there are two, if not three broods yearly. One of the most lovely garden moths bears the name of the Lilac Beauty (Pericallia syringaria). It is not plentiful in collections of insects, and many entomologists would be grateful to any gardener who could secure for them caterpillars of the species, young or adult. It is not possible to describe the moth; even an accurate drawing hardly exhibits the delicate markings and varied tints. July is its month of appearance, the eggs then laid upon Lilac (occasionally the Privet or Elder is selected by the parent). Caterpillars hatch generally the same year, hybernating, 'tis said, where is not exactly known; perhaps they live together. More probably their winter life is solitary. Small and greyish brown, they escape notice. The full-sized caterpillar is more showy, glossy grey or rose coloured. Near the tail end of the body are two singular hooked lumps of yellow.

Amongst the moths which have the misfortune to make themselves the victims of gaslights the thorns are prominent, some of them are familiar even to the London gaslighter. There are entomologists who devote leisure time to searching gas lamps, a rather difficult pursuit. Owing to this failing of theirs, thorn moths are often seen hovering in gardens near lit-up windows, and the species called the early thorn (Selenia illunaria) feeds upon various garden plants while a caterpillar in early summer, the moth flying during April. There is nothing thorny about any of these moths, seemingly; the name was given because most of the caterpillars have protuberances which resemble thorns on a twig, but they have no power of pricking. The September thorn (Ennomos angularia), with angled wings of brown and yellow, is a common species, which occurs even in London suburbs, the caterpillar eating Birch, Elm. and Sycamore. Later still in its time of emergence is the feathered thorn, which is abroad in October, taking this, and its Latin name of Himera pennaria, from the beautiful plumes which adorn the head; the wings are of a rich brown lined with white. Nearly allied to the thorns, but stouter in body and darker in hue, is the brindled beauty (Briston hirtaria), garbed in brown and black, which sometimes swarms during the spring about London parks and squares, leading one to think the sparrows do not eat the caterpillar, which is of conspicuous colours. It lives upon the Lime and Elm, but sometimes infests the Pear and Plum.—ENTOMOLOGIST.

MUSCAT OF ALEXANDRIA GRAPES SHANKING.

HAVING had a pretty wide experience in renovating and lifting Vines when in green leaf, and also during their resting period, I may be able to give "R. M." (page 200) some assistance in the prevention of Muscat of Alexandria Grapes shanking.

In the first place, What is shanking? It is a term well understood by gardeners, the majority of whom have had experience of it at one time or the other in their career. A house of Grapes may to all appearance be doing well, and have got over the critical stoning period. The cultivator is looking forward to having some well-finished Grapes, when suddenly the bunches collapse. At first it may be only a few mysterious brown marks that are observed, but in a few days the stems shrivel, and many of the points and shoulders of the best bunches go off in the same manner. Evidently a check has occurred to the flow of sap, which I have not the least doubt has originated at the root of the Vine.

If a mixed house of Grapes is grown, the first to become affected with shanking will be the Muscats. Some varieties of Grapes seldom or never shank. They may be overcropped, and otherwise treated badly; instead of being black they may be red, but in some instances that have come under my notice shank they will not, although the next Vine being a Muscat of Alexandria will be shanking badly. This clearly proves that the latter is a tender variety, and requires, where it is possible, special treatment. This, however, is not really necessary, as Muscat of Alexandria is planted largely in several mixed vineries under my charge. The Vines have been planted upwards of forty years; in fact, many of them are inarched on other varieties, and this season the crops are probably as satisfactory as at any time during their existence.

It may be of assistance to "R. M." if I state how this has been brought about. We have had shanking at various times, but not to any serious extent. Directly this is observed steps are taken to remedy it. I may say that the roots are inside and outside, so it is a simple matter to provide fresh soil. This is done as soon as the fruit is cut, and if possible before the leaves fall, these being kept on the Vines as long as possible by syringing and shading, so as to encourage new roots to form. The old soil is carefully removed from one of the borders, and the roots of the Vines placed in mats, which are kept constantly syringed as the work proceeds. Ample drainage is provided, and if an outside border, never more than 18 inches of soil is used. If it is possible, keep the border above the level of the surrounding land. By this means every ray of sunshine is caught, the border is warm, and the water passes away readily. Grapes grown on Vines planted in a border of this description will rarely shank provided the soil is right.

Our soil is on the strong magnesian limestone formation. But lime made from the stone, although answering admirably for building purposes, is as poison, either when used new or old, to all vegetation with which it comes in contact. Was the limestone used by "R. M." of the right quality? The loam is usually cut the previous autumn and stacked. We sometimes use a heavy and light loam in equal proportions, similar to that mentioned by "R. M.," in others only the heavy loam has been used, with no perceptible difference. To this is added charcoal, wood ashes, and broken bricks in equal parts, the latter being about the size of a hen's egg, the fine dust being sifted out. About one part of this mixture to twelve parts of soil is used. Bone meal, and quarter-inch bones in equal quantities are used in proportion of 1 stone (14 lbs.) to a large cartload of soil. This is well incorporated, and placed firmly in the border. The roots are spread out thinly in the compost, and after being finished off the whole is covered with a layer of litter or bracken sufficient to keep out the frost.

If "R. M." will make up a shallow border on the above lines, and not use any horse or pig manure, which in his case doubtless did more harm than good by keeping the border cold and stagnant, he will, I have no doubt, be able to grow good Muscat of Alexandria Grapes without being troubled with shanking for some time to come. But he must first take steps to keep the Elm roots out of the Vine border, or they will soon impoverish it to such an extent that it will be impossible to grow good Muscat Grapes without constantly renewing the border.—S., *Yorks.*

ORCHIDS

Cycnoches chlorochilon.

When visiting the Chelsea nursery of Messrs. J. Veitch & Sons, Ltd., I noticed a plant of this peculiar and interesting Orchid in flower amongst many others. The Swan Orchid, as it is termed, always attracts general attention by the curious structure of the flowers. It is a native of Demerara, from whence it was imported upwards of half a century ago. It is, however, by no means common, being usually grown in collections merely as a novelty. C. chlorochilon (fig. 41) has stout conical pseudo-bulbs bearing the flowers at the top in pairs; the sepals and petals are bright green, the lip broad and yellowish with a dark blotch at the base, and directed to the upper portion of the flower. The column is slender, curved, green, and in the position where the lip is usually seen in Orchid flowers. The plant is of strong habit, requiring a compost of peat and sphagnum, with the temperature of the Cattleya house, supplying abundance of water and moderate shade.—Orchidist.

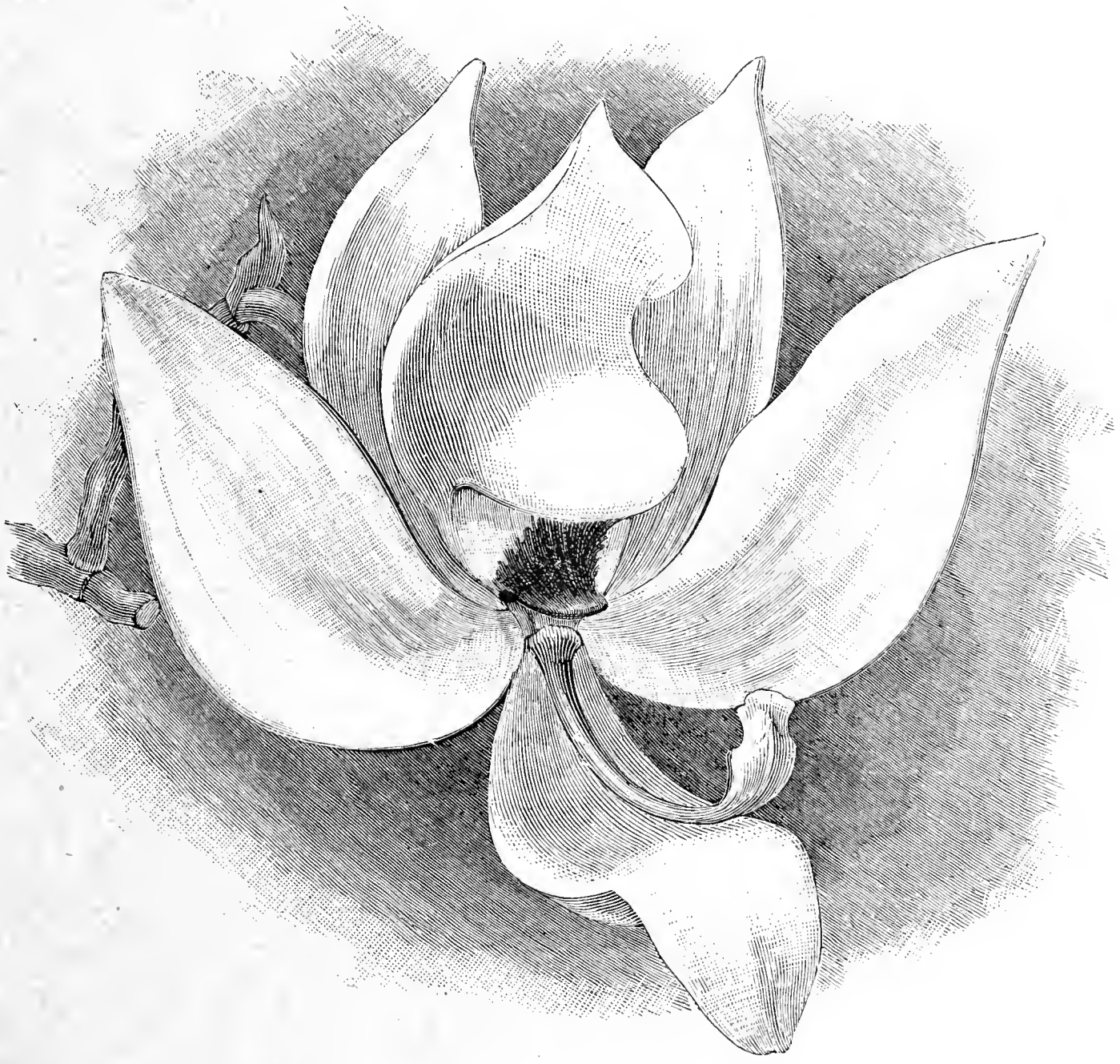

Fig. 41.—Cycnoches chlorochilon.

The Mexican Lælias.

There can be no question about the beauty of this section of Lælia, or their utility in keeping up a fine display for many months in the year, a great part of their flowering season being at a time when really good Orchids are not at their best. They form quite a distinct set botanically, and must be cultivated differently from that group usually grown in company with the labiata section of Cattleyas. Not many are yet in bloom, but I have one or two spikes of L. autumnalis open considerably in advance of their usual flowering season, and this prompts me to send a note on their culture.

It must be understood at the outset that all the plants here referred to grow further north of the equator than do the species with which I have compared them. Not only this, but they are also found at great elevations above sea level, where a much lower range of temperature exists than in the lower region about the coast of Mexico. The veteran Orchid collector Roezl, who has many times visited these regions, says of some of the species that "they grow at altitudes between 7000 and 8000 feet where severe frosts often occur at night." But presumably these frosts are of very short duration, as in most of these upland habitats of Orchids day and night temperatures to a certain extent, and to a greater one, winter and summer readings are more regular than in the valleys.

There can be no doubt that if a house can be set apart entirely to this section of Lælias and one or two other Orchid species with which we are not just now concerned, much better results will be attained than if they are grown in a house with a general collection. This of course is only possible in large collections, growers of smaller quantities of plants having usually to make the most of the conveniences to hand. For this reason I cannot give details that will suit every case, but must leave individual readers to make the best arrangements they can under existing circumstances.

A clear almost unbroken light is of the utmost importance, both during the growing and resting season. While such as L. anceps are growing the plants delight in having the sunshine full upon the foliage—always provided that this is not of the immature kind produced by heavy shading and undue heat—a very moist atmosphere, and abundant ventilation. Rather difficult to keep up, someone may say; and so it is, but it can, and must be, managed if the best results are to be looked for. The grower who lowers his shading in fitful weather, closes his house, damps down, and then leaves the plants to their own device, will never grow the Mexican Lælias properly.

During summer the house should have a little air on constantly night and day, this being increased early in the morning, the floors, stages, and walls of the house well damped, and the shading kept off the roof as long as possible. The foliage then keeps cool until late in the day, while had the house remained closed until the sun reached it there is an upward rush of the temperature, at once necessitating early shading. Many times in the heat of summer I have left the blind up on the Mexican house until nearly midday, then lowered them for a couple of hours, and shut up with ample moisture.

In the coldest winter weather one may as a rule keep a little air on during the greater part of the day, the pipes being gently heated to keep the house nicely warm, and the plants so arranged that every ray of light reaches them. The roots at this time will be kept nearly dry, watering being necessary only at very long intervals. While growing freely, on the other hand, they may, if the plants are properly potted, be watered almost daily. The atmosphere of the house, too, may be kept much drier in the winter, what little moisture is necessary being given early in the day, so that it has time to dry a little from about the plants before nightfall.

There are one or two species—L. majalis as an example—that are benefited by being placed out of doors for a few weeks after the growth is fully made. The lovely flowers of this plant are never so freely produced as when this is done. The plants of all the Mexican kinds like a shallow compost; one that soon runs dry after water is given, and allows plenty of fresh air to reach the roots. Pans, pots, or baskets may be used for them. They are also frequently grown on rough wooden blocks, while the trellised rafts now made in

all sizes are excellent receptacles for the plants. A great advantage of the latter is they can be suspended at a corresponding angle to that of the roof, and thus obtain the maximum of light.

Equal parts of peat fibre and sphagnum moss is the best compost in either case, only a very little of this being placed on the rafts; just enough to form a setting for the rhizomes. In the pots or pans about an inch for the smaller sizes, with a little more for larger ones, suffices, and in this case plenty of small rough charcoal or crocks must be mixed with the more compressible material. Clean every part of the plant after it is taken from the old compost, and cut away all decaying roots. These few cardinal points in their culture properly grasped, and altered only so far as to meet individual circumstances, will enable anyone interested to take up their culture with every prospect of success.—H. R. R.

An Orchid Painting from Brussels.

A very beautiful plate of Orchids has been sent us by Mons. Lucien Linden of Brussels, representing some of the best of the firm's introductions during this year. There are two forms of Odontoglossum crispum, one named Lueiani and the other Lindeni, both beautiful varieties splendidly reproduced. Besides these the plate contains Cypripedium insigne aureum and Cattleya Trianæ Imperator. As a whole the plate is a great credit to the artists, printers, and to Mons. Linden, for it is a veritable work of art.

Cypripediums and Skin Irritation.

Among many other papers in the "Proceedings of the Indiana Academy of Science," dated 1894, but only just received, is one by Mr. T. D. MacDougal, showing that various species of Cypripedium have an irritant action upon the human skin. It was found that when the leaves of C. spectabile were rubbed lightly upon the skin of the wrist, arm, face, or ear the person experimented upon was usually "poisoned" in a degree corresponding to the manner of application, and in a time varying from ten to twelve hours. There could be no doubt about the unpleasant effects produced by the leaves, for Mr. MacDougal soon found that he could not obtain subjects willing to sacrifice their feelings upon the altar of scientific knowledge. He was able to prove, however, that similar painful effects were produced by C. pubescens and C. parviflorum. To ascertain whether the effect was due to the mechanical injury resulting from piercing the skin by the pointed hairs upon the leaves, or to the corrosive action of the secretion found on the outside of the globular tips of the glandular hairs, separate tests were made by material from C. spectabile. The hairs of each kind were taken from the leaf by means of a pair of fine forceps, and the tip pressed against the skin. Irritation was found to result from the contact of the glandular hair only. It was found, further, that the irritant action of the plant increased with the development of the plant, and reached its maximum with the formation of the seed pod, from which it is inferred that this is a device for the protection of the reproductive bodies during the period from pollination to the maturity of the seeds.—("Nature.")

VEGETABLES FOR HOME AND EXHIBITION.

PARSNIPS AND TURNIPS.

Nothing adds more to the attractiveness of a collection of vegetables than sound, clean, and straight roots of Parsnips, and no autumn collection can be quite complete without them. Well worked land is the first consideratiou to successful Parsnip culture. The reason is obvious, as the roots naturally strike downwards to a considerable depth, and if the medium is hard through lack of cultivation or of a very stiff or clayey nature, obstruction is placed in the way of the downward tendency of the roots, and forked unshapely specimens are the result. Liberal use of crude manure has the same effect, therefore the advice given in reference to other tap-rooted vegetables is applicable here—viz., grow your Parsnips on ground that has been heavily manured for some previous crop, or, failing that, bury the feeding material to a fair depth beneath the surface. Parsnips generally do well in soil that contains lime, and a dressing of this useful commodity on the quarter where the vegetables are to be grown will invariably give good results. In the Channel Islands seaweed is largely used as a manure for this crop, and is said to answer admirably.

In order to obtain large specimens, some growers sow the seeds in September, but this method cannot be generally recommended, as so many of the plants run to seed before the roots are developed. The end of February or during March, according to the weather, is a suitable time for sowing, having previously taken advantage of favourable opportunities for breaking down the soil to a friable condition. Abundance of room is another rule that growers may follow with advantage, as growing too closely together is not only conducive to small, unshapely roots, but is also an incentive to that enemy of Parsnip growers—canker. If the seeds are sown in rows 18 inches asunder and the plants subsequently thinned to 1 foot apart, roots may be grown in the ordinary bed of ample size and quality sufficient for the exhibition table, and it is altogether a mistaken idea to think there is anything gained by allowing the plants to remain in a crowded condition.

Free use of the Dutch hoe is the chief requisite during the summer until this becomes impracticable through the abundance of foliage. In growing for exhibition purposes an occasional top-dressing of two parts superphosphate of lime and one part muriate of potash at the rate of 3 ozs. to the yard of drill is beneficial, and in dry weather applications of liquid manure from the farmyard or soot water may be used with advantage. The roots do not reach maturity till October, though drawing may commence in September. It is a good plan to take up part of the crop in November and store in sand for future use, as was recommended for Beet and Carrots. The remainder may remain in the ground, as the severest frost does them no harm, but on the other hand adds to their sweetness. None, however, should be left after February or March, as they will then commence growing. In storing great care should be exercised that the roots are not allowed to become dry, or they will shrivel and be stringy when cut. The best varieties for exhibition or home use are the Student and Sutton's Tender and True.

Mention has already been made of canker, and in it we have the most formidable disease to which the plant is subject. In some seasons and localities Parsnips suffer worse than in others, and as the work of destruction is going on underneath the surface, there appears to be no effectual means of cure. As in many other cases, the best method is to render the conditions of cultivation as favourable as possible for the sturdy growth of the plants. Change of soil for this crop is always advisable, more particularly so when canker makes its appearance, and a dressing of lime at the rate of about two bushels to the rod will be found beneficial. Also trench the ground so as to bury the living spores of the fungi beneath the surface. In preparing Parsnips for the show table straight unblemished roots of even size should be chosen. Care must be taken in digging not to damage them in any way or break off the thin tender tip of the root, as this detracts from their appearance, and beyond washing them clean no further preparation is necessary.

Amongst the many vegetable crops none is easier to manage than the Turnip so far as culture is concerned, and the chief point is to secure a succession fit for table the whole year round, as Turnips are always in request. Even in the winter, when green stuff generally is scarce, the blanched succulent tops of these vegetables are highly appreciated as a substitute for Seakale, and as a green vegetable Turnip tops are extensively offered for sale in the London markets. When young and tender they are very palatable, being often invaluable when severe frost has stripped the garden of its supply of Brassicas. Little need be said about the preparation of Turnips for show, as everyone knows that none other than sound young specimens are of any use. This season has been a bad one for Turnips, and they have, in consequence, been scarce and of inferior quality. The protracted drought has not been conducive to the rapid growth that is necessary in order to obtain sound sweet Turnips, while that natural and deadly enemy of the crop, the Turnip flea, has thriven amazingly.

As already stated, succession is an important point in Turnip culture, and in order to keep the kitchen continually supplied a start may be made as early as January by sowing on a gentle hotbed, as is usual with early Radishes. Care must, however, be taken, as overheat will produce rapid growth of the tops, but no roots will be formed. In February another sowing may be made in a sheltered position outdoors, taking care that the ground is friable and light, and if preceded by some other crop, such as Celery, that has been subject to thorough working of the soil, so much the better. Sowings must follow at intervals through March, April, and May, in order to keep up a constant supply. For autumn use sow in June, while the end of July and August should be chosen for inserting the seeds that are to produce the winter supply. Generally speaking Turnips are sown in rows from 12 to 15 inches apart, and in successful management more depends on timely and judicious thinning than anything else. Great care is necessary in this operation, and where two or three are growing together they must be reduced to a single plant, and be finally left with a distance of from 6 to 12 inches between them, according to the general size attained by the variety.

The tropical sunshine of this summer has been disastrous to Turnips, particularly on very light soils, and watering has been absolutely necessary. Where artificial means have to be adopted for supplying moisture it should be thoroughly done. Lifting and storing may be carried out on the lines recommended for other root crops, a dry atmosphere being necessary, with no other protection except what is necessary to exclude frost. A portion of the crop may be left in the ground, and the Turnips pulled as required for use. In severe winters it is well not to destroy those not required for use, as by leaving them in the ground the green tops may serve as useful vegetables in case of emergency, after which they can be turned into the ground when digging. Like many other vegetables of this kind

varieties are legion, almost every seedsman claiming to have his own strain. For the first sowings Early Milan and Early Snowball are good white varieties, and the white Strap-leaf is excellent as a succession; while among the coloured kinds Red Globe, Orange Jelly, and All the Year Round will provide variety sufficient for ordinary requirements.

The Turnip crop is subject to attacks from various enemies, perhaps the worst of which is the Turnip flea, Haltica nemorum. Disastrous effects of this pest have been seen this summer, thus proving the statement that favourable conditions of culture are the best preventive against insect and other pests. The exceptional drought stopped the growth of the plants and encouraged the spread of the insects, with the result that Turnip beds presented a pitiable appearance. As a preventive it is a good plan to sprinkle the plants with dry lime, wood ashes, or soot in the morning, when they are wet with dew, as anything of a dusty nature is distasteful to the pest.

Attacks of the slime fungus, known as "finger-and-toes," are frequent in light and sandy soil; and here, again, nothing serves so well as favourable conditions of culture, thereby insuring free and rapid growth. Where a crop is affected by finger-and-toes a complete change of ground is the first consideration, and no infested roots should be left on the ground, otherwise the spores are washed into the soil, and the remainder of the crop suffers in consequence. All infested roots should be gathered and burnt, and the ground either trenched, so as to completely bury all traces of the disease, or be subjected to a dressing of gas lime, at the rate of about 1 lb. to the square yard, in the winter, leaving it on the surface for about a month before forking it in. Though good cultivation is the best preventive against all ills to which vegetables are heir, we cannot always insure them, as the capriciousness of climate often proves an incentive even after our most strenuous efforts. If anything is worth doing, however, it is worth doing well, and the lesson is thoroughly applicable in the cultivation of this useful vegetable, whether for home or exhibition.—Grower and Judge.

NOTES ON BULBS.

Putting the many distinct bulbous plants into one large group we should probably find that it comprised the most popular plants in cultivation, for one or more representatives of it will be found in almost every garden or greenhouse throughout the country. Especially is this the case during the spring months, when so-called Dutch bulbs are making such beautiful displays. The expression "so-called" is used advisedly, for it is somewhat of a misnomer now that so many thousands of Daffodils and Snowdrops particularly, which were some time back largely procured from Holland, are grown in the British Isles. However, as the time is with us when this section of the bulbous flowers is being dealt with, it is proposed in a few notes to mention cultural details and give selections of varieties for various purposes that may be of assistance to some readers of the *Journal of Horticulture*.

It will be thought by many persons that the culture of plants so widely grown must be thoroughly understood, but this is not the case, as can easily be proved by the failures that are constantly occurring both in large and small establishments. Two of these come to mind at this moment, and will be cited here as warnings to others who may feel disposed to adopt similar tactics. Let us take the case of a so-called professional grower first. It was only this spring that his failure with Hyacinths was observed, and for which he blamed the bulbs, the bulb merchant, the soil, the pots, the houses—everything and everybody in fact but himself, who was entirely in fault. In September excellent bulbs were procured, but potting was postponed from time to time until the end of December, of course owing to the pressure of other work. Then all was bustle and hurry. The already weakened bulbs were potted and placed, covered with brown paper, in a very warm house to make up for lost time. The results were interesting, but not beautiful, as every good grower may imagine—indeed, it was the most extraordinary collection of Hyacinths the writer has seen. Despite the efforts that were made to convince him to the contrary this professional gardener (?) persisted in changing the bulb merchant, and was quite decided to place his order in another quarter this season, and it is probable the bulb merchant who supplied them will be thankful if he does so.

Now for the amateur, who was a man of quite another calibre. Everything that could be thought of was done to insure a superb display, and the result was looked for by the writer and friends, as well as the owner, with great interest. All went well (apparently) until a week or two after the removal of the pots from the cocoa-nut fibre refuse in which they had been plunged. There were the stout growths, but, wonderful to relate, scarcely a movement was made by any single shoot, though one or two did attempt to throw up a flower, but failed. Speculations as to the cause were abundant, and during the owner's momentary absence one day an inquisitive visitor took hold of a shoot to feel if it were firm, when the bulb came easily out of the soil. It was immediately replaced, but not before it was seen that there was not one root, and it was the same with the many others that were tested. By dint of persistent persuasion it was eventually learned that a heavy dose of artificial manure had been added to the compost, and with really lamentable results.

These two cases will perhaps bring a smile to the faces of some growers who have not made such mistakes, but they serve to illustrate what may follow negligence or ignorance in bulb culture. If such things have been done, they may be again, though not by the same men, and it is to aid in their prevention that these notes are being penned. Though the cultural details to be given have been proved over many seasons, it is not to be suggested that they are the best; others may do just as well by different methods of procedure and will not feel disposed to change. Let them not do so, such is not desired. For the unfortunate and the inexperienced this writing is done, and if these and the skilled growers should gather some useful hints the object in view will have been achieved. After this rather lengthy preamble we must settle down to business and give pride of place to the always admired

Hyacinths.

The first essential towards success in growing Hyacinths either in pots, glasses, or in the open ground, is the purchase of sound bulbs. These, be it understood, need not necessarily be very large. The main thing to look for is solidity. To secure this the earlier the orders are placed in the dealer's hands the better, as it cannot be doubted that the best go first, despite the fact that it is always affirmed that no picking is done. Having secured the bulbs requisite, potting (it is with pot culture that we shall deal for a time) must commence at once, and where many are grown some may be placed in pots immediately, the remainder waiting about a fortnight. The question of compost is an extremely debateable one, but it has been found that three parts of sound loam, one part of decomposed leaf mould, with a goodly amount of coarse sand and small pieces of charcoal, suits them admirably if thoroughly incorporated. Some excellent cultivators advocate decayed manure in preference to leaf mould, but my practice has been to feed when the plants are advancing in growth, as will be referred to later.

Priority might perhaps have been given to pots and crocks over soil, but it does not matter particularly, so long as they are referred to. No need to tell the intelligent cultivator that everything ought to be scrupulously clean to commence with; but there are others, and one of them was heard to say recently, who ought to have known better, that he could not see the use of washing soil off pots and putting more in them directly. As to size of pot, much latitude is permissible, for given good soil and proper attention excellent results may be had by the utilisation of either 4, 4½, or 5-inch pots, these being one bulb for each, or say three of medium size for a 6-inch pot. For choice I would take the 4½ size, and should expect satisfactory blooms if a start had been made with first grade bulbs and proper compost. After carefully placing the crocks in the pots in the customary way, the soil must be prevented getting amongst them by having a layer of moss or the rougher portions of the compost put on, and if this can in turn be dusted over with soot so much the better.

The stage at which potting is commenced in earnest may now be considered as reached, and if the soil be in proper condition, that is to say, neither wet nor dry, it is an operation that does not call for much difficulty—indeed, it is much easier to do than to describe. When completed, the apex of the bulb may just protrude through the soil, therefore the amount of soil that is placed in the pot and on which the bulb will rest must be governed by its size. Do not make this mould very hard or the roots cannot enter freely; have it firm and no more. Then place in the bulb, surrounding it with soil to the level mentioned, which should be about ¾ of an inch from the top of the receptacle. Let the soil be firm and finished off smoothly for the sake of appearance. Water ought not to be required, but if the soil is very dry it is advisable to apply some before plunging the pots. Some growers always have a cushion of sand for the base of the bulb to rest upon, but I have found no particular advantage arise therefrom.

One of three things may be used of which to make the plunging bed. These are cocoa-nut fibre refuse, leaf mould, or coal ashes, and the first named is certainly the best and the cleanest. Whatever it is let the pots be completely covered to the depth of about 4 inches, and if, as is best, the bed is outside, put any rough material over the whole to throw off the heavy rains. If the soil were in proper condition no water will be needed until the bulbs are ready to be brought from the bed, when, soon after, a thorough soaking may be applied. From four to seven weeks are usually long enough for several healthy roots with a stout top shoot to have been emitted, and when this stage is reached they must immediately be taken from their resting place.

At this period the attention must be of the closest so as to prevent

any mishap occurring that may mar the future well-being of the plants. To bring them into full light at once is almost suicidal, as it is to allow the mould to be like dust at one time and mud at another. For the first few days put brown paper over the pots, following with white paper, and eventually discarding the shading entirely. The only object in its use is to inure the plants to the light to which they are unaccustomed. In a very few days a move will be made, the crown will expand and elongate, and no check should now be permitted whether the plants are in a greenhouse or in a room. Water judiciously, using clear and manure water alternately, the latter being given very weak or it will do more damage than good. I pin my faith on guano, ¼ oz. to a gallon, and soot water. Either would perhaps do alone, but I am a believer in a simple change of diet as well for my bulbs as for myself.—H. Rose.

(To be continued.)

AUTUMN FLOWERS.

The rain and storm which so lately stole the glory of the autumn flowers have gone. Sunlight, chastened though it is, and soft warm winds have come by day. Yet everything reminds us that we are on the brink of winter and shall soon be plunged into its dreary days. The nights grow long and chill. The swallows have gathered on the house-tops and gone in search of a sunnier clime. The Virginian Creepers have changed their colouring, and cover with blood-red leaves the garden or house front wall. Humbler plants have followed suit, while others have assumed a different colouring. We hear with sad ear the rustle of the falling leaf, though it drops to the earth to the accompaniment of the redbreast's song; for the little bird is back again to spend the winter beside our homes. We look with yearning eyes at the flowers we are so soon to lose. How we shall miss them when they are gone. They grow dearer every year, and their silent companionship more satisfying as time goes on. Yet why meet trouble half-way? Though the nights grow more chilly, and shorter and cooler the sunny days, there are many flowers yet; even some still to come to give us heart while we await the coming of spring.

There are soft-coloured Asters, pillars or pyramids of bloom; golden St. John's Worts, showy Sunflowers, white and blush and pink Japan Anemones—none more beautiful than those of purest white. Hardy Fuchsias are very beautiful, with the coral-red and purple drooping flowers, to which gather in crowds the humble bees in search of store for the coming wintry days. Great bushes of Hydrangeas are in some of the gardens; by the sea winter for these has few terrors. The lace-like Gypsophila paniculata is nearly over, but the graceful Statices still give us airy bouquets of bloom.

Early Chrysanthemums, which, by the way, do not seem to grow much in favour, are masses of colour, and Rudbeckias and Heleniums stand near, to give witness that North America can give us flowers as well as China and Japan. So say the Phloxes, too, although the original flowers are small beside those from the florists' hands. There are yet some Bellflowers, too, although their glory is greatly over. A few of the dwarfer ones are again in bloom, and the exquisite flowers of the Platycodons attest the worth of the genus which includes them among its attractive flowers.

The stateliness of the Gladiolus is of a different kind from that of the Kniphofias, or Torch Lilies, which have thrust their flaming flowers high above their long reed-like leaves. Gay, too, are the Montbretias, which remind us, as do many other plants as we look at them, of the achievements of the gardener's art, which has given them birth. Meadow Saffrons, Crocuses, Violas, Golden Rods, Sea Hollies—these, and more besides, are yet in flower. In gardens in which annuals and half-hardy flowers are largely grown we have other types of beauty still. Dahlias, Sweet Peas, Dianthuses, veined Salpiglossis, Nemesias, Clarkias, Godetias; beauties innumerable fill up the feast of Flora's maturest time.

Where can we begin, and with what shall our thoughts be occupied in detail, as we try to fix them on a few flowers of the time? The true hardy Chrysanthemums of the latifolium and maximum type have of late, in the hands of the seedling raiser, given us so many varieties that we fear that, before long, they must be reckoned among the florists' flowers, which only a specialist in that particular flower can hope to say much about. The day of "named" flowers in some races has gone by, or is rapidly passing away, so high is the standard of excellence which has been attained in raising seedling forms. When we see these great Ox-Eye Daisies numbered by the dozen or two we feel that such a time may be at hand for them too. Even now it takes a good one to be distinct enough to find for itself a space in gardens where already these Chrysanthemums are well represented. Amongst the finest I have lately seen is Mrs. Head. It is large and of the purest white in its ray petals. Yet it is not in size or in purity that it is distinguishable from others now in gardens. It is from a peculiarly pretty and informal poise of these florets that it earns and deserves a place in our gardens, and merits its use as a cut flower to fill large vases or for other decorative effects.

It seems some time since I last spoke in detail of any of the St. John's Worts, whose golden blooms are incidentally referred to in a preceding line. Long have they been held in favour by the superstitious on account of their marvellous powers to ward off or drive away evil. Traditions and legends have clustered around the plant—not in our own country alone, but in others beside. Its flowers reminded the people in olden times of the sun with its brightness and power to dispel darkness and evil of various kinds. Very beautiful are these sunny blooms with their exquisite boss-like centres; a beauty reinforced in most of the species by the pleasant-looking green leaves. There is much variety among the species; some trailing over the ground; others with erect, herbaceous stems, and others, again, with shrubby or sub-shrubby habit.

For notice now Hypericum olympicum is selected, not because it is the best—for who can venture to say as much of any—but because it is beautiful enough and good enough for any to admire and praise. Less informal than some are its starry flowers, with their small central boss and conspicuous stamens. The colour is less deep, too, than in some species, but a good plant with a number of flowers fully open attracts notice with its clear yellow flowers, which are larger in size than one would expect from the plant before it comes into bloom. It is by repute a greenhouse species, but is hardy in my garden on a rockery with an eastern aspect, where it has lived and bloomed for several years. It has round stems, and has rather elliptical-lanceolate leaves, which are full of pellucid dots, for which the genus is remarkable. A light soil with a proportion of peat in it is the compost in which it is grown here. It comes, I believe, from the Bithynian Olympus, whence it was introduced in 1706, and is easily raised from seed.

A few lines which remain may be profitably devoted to a mention of Polygonum amplexicaule—the Stem-clasping Knotweed—a Himalayan plant worth growing, but seldom seen in gardens. For some years I have seen it in the garden of Captain Stewart of Shambellie, Newabbey, N.B., where there is a good collection of herbaceous plants. The specimen here is the rose-red form, but, according to Nicholson's "Dictionary of Gardening," there is also a white variety. It may be mentioned that the above work has this plant marked with an asterisk, thus singling it out as especially good or distinct. It comes into flower in August and blooms into October, and the flowers, which are produced in racemes, will often be found useful for cutting purposes. Its height at Shambellie is about 3 feet—from this down to 2 feet being its normal growth. The name is derived from the upper leaves being sessile and amplexicaul. P. amplexicaule is far from plentiful, and is but seldom to be found in nurserymen's catalogues.

These are but, as it were, fragments of the feast picked up as we go among the flowers. All too soon will they pass away for the year, but till the sad time has come we may enjoy the smiles of the autumn flowers, saddened though these seem by the thought of approaching decay.—S. Arnott.

PLANTS FOR WALLS.

Almost every garden has its iron or wood trellis, pillars, arches, ornamental or rustic wood and iron-work, which in most instances it is desirable to cover with climbers. There are arcade fronts, arbours, bowers, stumps and trunks of old trees; some objects pretty in themselves, which it is considered in good taste to enrich with lively beauty, and other subjects objectionable, which when clothed with foliage and flowers become ornamental. Walls too high or too low, sunny or shaded, never look so well as when so adorned.

It is not always advisable to cover with climbing or other plants every surface suitable for their training and successful growth; and in the case of buildings it is not judicious to train plants over an architectural mansion—its principal parts, perhaps no part, ought to be planted against, for as a work of art it should be seen in all its details. Buildings which have many enrichments should not have these covered, though it may be advisable to clothe the intervening spaces with foliage; and in the case of brick buildings with stone dressings, the plants ought to be confined to the brick portion only, and they should only be taken up the height of the stonework, and not so as to cross it with the view of covering the upper part of the building. The plinth, too, if of stone, ought not to be hidden, but the stems of the plants made to cross it in the angles, or in the least objectionable manner. A well-designed, well-built mansion needs no plant ornamentation; but there are some buildings so mixed in character, and so inartistic, that it is desirable to cover them with foliage. Plain buildings, especially if low, may, as a rule, be clothed with plants, as these give an appearance of height, or prevent the want of elevation in the building from being so much noticed. Nothing, however, is so incongruous as to have tall and low-growing plants on the same surface. They must all attain one height, and be kept to that by pruning. I do not think they look well trained higher than the first-floor window sills, or if there be a string course, they should be kept under it; but if they are taken higher

then they should not stop until the cornice or projecting roof is reached. Of that they should be kept clear, the whole wall being covered equally to one height.

In garden architecture there are many surfaces suitable for the training of plants. Walls built for division, or for affording shelter, when unplanted are cold and wearying to the eye, but become cheering when covered with plants. Besides walls, there are buildings which present surfaces with different aspects suitable for plants, some admirably suited for a class of shrubs whose flowers are handsome and desirable for bouquets, and which cannot be depended on from plants in the open ground. Even the low walls of greenhouses or other plant houses are rendered less cool and uninviting when clothed with either foliage or bloom. Nothing, in my opinion, is so ugly as a bare wall; it offers nothing which can interest, and a badly covered wall is not much better.

Another great defect is that of employing plants without paying any regard to the character of the building, for as buildings vary, so ought the subjects; for instance, a building constructed of light-coloured materials will be subdued or toned down by planting subjects with bright green foliage and red-coloured flowers, as Roses, or such evergreens as Escallonias, not seeking too great a contrast, like that which would result from a close and heavy mantling of Pyracantha, or Ivy. Massive buildings should be covered with close-growing, heavy-foliaged evergreens, as Pyracantha, Ivy, and Magnolia, whilst a light and elegant structure should be clothed with plants like the Clematises and Honeysuckles, introducing a few evergreens for winter effect.

Some persons object to climbers and plants against buildings on account of their making the walls damp. How far that opinion may be correct I cannot say. I am aware that plants covering a wall will shade, and to a great extent deprive it of heat and air; it will be covered with moss sooner than one exposed to the sun's action, but that is because it is shaded, and not because the plants make it moist. I am of opinion that they would tend to make a wall dry rather than damp. The only way in which I think the walls are rendered damp is by their not being cut off at or a little above the ground line from damp ascending from the soil, and with plants this dampness will be increased by placing soil close to the wall instead of the loose rubbish from the building. From the watering of the plants, too, there will be more dampness than if there were no plants. That, however, shows, not that plants make walls damp, but injudicious building, for all buildings ought to have the ascent of damp from the ground cut off by a layer of asphalt as high as, if not higher than, the ground level, and above that the border for the plants should not be raised. I have seen the ground outside taken above the line of the asphalt or cement, and the walls made wet in consequence for several feet up. If the ascent of damp from the ground be cut off, and the soil not taken above the point at which it is cut off, no one will have need to complain of climbers making walls damp.

A proper border must be made for the plants. It is useless to plant them against a wall, if for a considerable depth and distance there is nothing but rubble. It ought to be removed, and proper soil put in to the extent of at least a yard from the wall, and to the same depth, placing in the bottom about 6 inches of rubble for drainage, and then a layer of turf or the rougher parts of the compost. The latter must vary somewhat in its composition, but most climbers will succeed in two-fifths of turf cut about 3 inches thick from a pasture where the soil is a rich loam, neither heavy nor light; one-fifth short manure, such as that from a Mushroom bed, or the fresh droppings from a stable as free of straw as possible; one-fifth leaf mould, and one-fifth sharp sand. The turf should be chopped up rather small, and all the materials well blended together. The border should be formed of this compost, using the materials fresh, without laying them in a heap to decay, but the upper part of the border should be of finer soil to the depth of about 6 inches. The compost just described, laid up for three months, would be suitable for the purpose, chopping it up and making it rather fine. It would not grow all climbers, for it would be too rich for some, and too open for others, and not properly constituted for a few; but it can be made lighter by adding sand, omitting some of the ingredients, and replacing with others of a suitable nature.

Not only should proper soil be provided for the plants to grow in, but it should be in quantity sufficient to support the plants to full size. The width and depth named, 3 feet, will in most cases be sufficient, but there will be cases in which a greater quantity of soil must be supplied for the roots. For instance, if the soil is wholly unsuitable, it should be taken out twice the width, and replaced with fresh. In some positions the plants have to be planted under gravel walks; then the soil ought to be taken out, proper provision made for the roots, and when the plants are put in, the gravel can be returned. The same remarks apply to places which are grassed over, and due regard must be paid to furnishing the plants with proper soil, and the grass should not be placed close to the stem, but an opening must be left all round. There are soils which will only need to be trenched, working in enriching material, such as manure or leaf mould; and where it is a good loam it will be sufficient to trench it 2 feet deep, and mix it with manure, or add the kind of soil required by the plants.

As regards the time for planting climbers, as they are usually grown in pots, planting may be performed at any season, but it is best done when they are about to commence growth, say in March, or earlier, according to the season. It is a good plan to plant them out before they have grown much, and still better if they have not grown at all. The roots should be spread out, the soil shaken from them without injuring the fibres, and a good watering given at planting, also afterwards in dry weather, so as to promote free growth.—G.

ISLE OF WIGHT HORTICULTURAL IMPROVEMENT ASSOCIATION.

THE members of the above Association had a most enjoyable outing on Thursday last, September 16th. By the kind permission of W. H. Myers, Esq., M.P., they paid a visit to Swanmore Park, Bishop's Waltham. The party of about thirty members, including their esteemed President, Dr. Groves, B.A., J.P., and Hon. Sec., Mr. S. Heaton, F.R.H.S., met at Cowes, and proceeded by steamboat to Southampton, and thence by two brakes to Swanmore. Passing on the way through Botley the market growers were noticed busy making their new plantations of Strawberries, taking the runners from the old beds and dibbling them in, as they would Cabbage plants.

A pleasant two and a half hours drive brought the pilgrims to Swanmore, where they were met at the entrance gate by the gardener and steward, Mr. E. Molyneux, V.M.H., and conducted to a pavilion on the cricket ground, where an excellent cold collation had been arranged, Dr. Groves taking the chair and Mr. C. Orchard the vice-chair. After the repast generously provided, the Islanders enjoyed a most delightful stroll through the grounds.

The mansion, which is just now being enlarged, was aglow with a highly coloured Ampelopsis, showing well by the side of the dark green Ivy and other creepers. In the neatly kept flower gardens some harmonious and elegant arrangements were admired. A combination of carpet and subtropical bedding, in which such plants as the grey Eucalyptus, Variegated Maize, Arundos, Eulalias, Solanums, and others, brightened with very fine flowering Begonias, on a groundwork of Sedums and Alternantheras were employed with pleasing effect. The herbaceous borders, which included amongst others a very fine collection of Michaelmas Daisies of every known variety were equally admired. It is not the right season to see the houses at their best, but the range of vineries indicates what can and has been done in Grape growing at Swanmore.

Apples appeared more plentiful here than in the Island. The larger trees in the home orchard were bearing fine crops, some of the more conspicuous being Blenheim Pippin, Mère de Ménage, Warner's King, Cox's Orange Pippin, King of the Pippins, Tom Putt, Cellini, Peasgood's Nonesuch, and several others.

The collection of Chrysanthemums in pots naturally came in for especial notice. Mr. Molyneux's fame as a cultivator and exhibitor has long been associated with this popular flower. The collection comprises nearly all the leading varieties of Japanese and Incurved, the height of the plants ranging from 2 to 10 feet. Their general condition may be described as not gross, but hard and boney; and the well-ripened wood is sure to produce some well-shaped blooms in due season.

The poultry runs, stocked with the leading varieties of fowls, fine Aylesbury and Pekin ducks, plump geese, fit for Michaelmas, as well as stalwart turkeys and the interesting peafowl, came in for no small share of admiration, as did the well made and neatly thatched hay and corn ricks. The general appearance of the group so impressed one veteran that he said he "should like to have a *likeness* took of 'em."

Time would not allow of an inspection of the newly planted orchard, consisting of many hundreds of the best kind of Apples for market purposes, one of which, Lord Grosvenor, is in much favour at Swanmore. Unfortunately some of the party had to leave earlier than the others to save the early boat to the Island, so only a section could accept Mr. and Mrs. Molyneux's hospitality, and the time came all too soon to leave this delightful spot.

Before departing Dr. Groves proposed a vote of thanks to Mr. Myers for his kindness in allowing them to come to see his beautiful garden, and to Mr. Molyneux for his attention in showing and describing to them the different objects which were of much interest. Mr. Molyneux, in reply, said he was delighted to do anything to advance horticulture or to please horticultural friends, and if they had reaped any profit or pleasure he was only too pleased.

To Mr. Heaton the thanks of the members are due for arranging everything for this most enjoyable outing.—C. O.

TROPÆOLUM SPECIOSUM.

THIS charming creeping or climbing plant is coveted by many who see the luxuriance with which it grows in the northern portions of the United Kingdom. It seems to revel in the moist atmosphere of the west of Scotland; but once it becomes established in more southern or drier districts, it is quite as beautiful although less vigorous. It looks its best, perhaps, when grown against a dark background, such as that formed by evergreen shrubs or hedges. A pretty object is a little Ivy-covered arbour, over which trail the crimson flowers of the Tropæolum. Equally fine is a view in an old manse garden of the same, running among some fine Irish Yews, and decorating these with festoons of scarlet blooms.

Establishing this creeper often requires patience, especially on a dry soil. Planting in firm well-trodden ground in March or April generally suits better than doing it in autumn. No one need be disappointed if there is little growth for two or three years. Once it begins to grow freely it increases with great rapidity, and unless planted where it can do no harm will become so rampant as to be troublesome. Lately I saw it against a wall behind a border planted with Anemone japonica alba. It had spread over the whole bed, and the gardener seemed inclined to think he was to be sympathised with, and not to be congratulated upon because of its vigour.—S. ARNOTT.

Notes & Gleanings

EDITORIAL NOTICE.

It is particularly desired that all communications, parcels, catalogues, and newspapers intended for the **EDITOR,** *be sent direct to* S, **Rose Hill Road, Wandsworth, S.W.**

EVENTS OF THE WEEK.—Though not precisely within the next week we deem it advisable to give our readers another reminder that the Crystal Palace Fruit Show opens on Thursday, September 30th. We hope to see a magnificent display of all kinds of British grown fruit that are now in season.

—— WEATHER IN LONDON.—Not very much rain has fallen in the last seven days. There was a light shower on Saturday evening, while on Sunday night rain fell rather heavily for some time. Monday and Tuesday were bright and dull alternately, but rain did not fall on either day. Wednesday again was fine.

—— LILIUMS AND ROSES.—I have just read two articles in the current issue of the *Journal of Horticulture*. One of them is written by "D., *Deal*," and what he writes so interestingly should be read by every ardent cultivator of that loveliest of Lilies, Lilium auratum. The other is on the subject of garden Roses, by the great Chrysanthemum specialist, Mr. Edwin Molyneux. With what he says of Turner's Crimson Rambler I entirely coincide. It is truly a superbly ornamental Rose, and keeps its brilliant colour much longer than any climber within the range of my acquaintance. Bardou Job and Gustave Regis are also of great value for garden decoration; but though beautiful in the bud they are almost single when fully blown. A much finer Rose than either, and fuller in the centre, is Madame Pernet Ducher, a French Hybrid Tea.—DAVID R. WILLIAMSON.

—— AMORPHA CANESCENS. This is, without doubt, the most beautiful and distinct of the hardy Amorphas. It is a native of the United States, and is found growing on the prairies of Michigan and Wisconsin, and is there known as the "Lead Plant." It grows to a height of from 2½ to 3 feet. The branches are sub-shrubby, and in England die to the ground during winter. The leaves are pinnate, and composed of twenty or more pairs of ovate leaflets, which are covered with an abundance of white silky down. The flowers are produced in terminal panicles, the branches of which range from 3 to 6 inches in length. The individual flowers are small and bright purple, with yellow stamens. They are densely packed on the peduncles in a cylindrical manner. The purple corolla and yellow stamens, together with the white leaves, produce a most charming effect. The flowers are at their best during August. It is best propagated from seeds sown in a little heat in spring. The young plants should be kept in pots until they are twelve months old; they should then be planted in sandy loam. When about three years old they begin to flower well.—D. K.

—— DEATH OF MR. JAMES COCKER.—The news will be received with general regret of the death, at the age of sixty-four, which took place on the 15th inst. at Sunnypark, Aberdeen, of Mr. James Cocker, senior partner of the firm of James Cocker & Sons, nurserymen, seedsmen, and florists, Aberdeen. He had been ailing for the past two years, and latterly had been unable to attend to business. Deceased was born at Corse, parish of Forgue, in 1832. He entered the business of his father—who was founder of the firm—at the nursery at Sunnypark, and afterwards went as a journeyman to Cloncaird Castle, Ayrshire. He also spent several years in London studying the various branches of the nursery business. He went into partnership with his father and brother about twenty-six years ago, a partnership which continued until the death of his father sixteen years ago. He then started business on his own account, taking his three sons—James, William, and Alexander—into partnership with him. His eldest son James predeceased him three years ago, but William and Alexander are still actively engaged in the business. Mr. Cocker was a very enthusiastic and successful cultivator of Dahlias, Pansies, Pinks, and Carnations, while latterly herbaceous plants and Roses—for which his firm was known over the kingdom—claimed his chief attention. He had also great success as a hybridist, having raised many Roses, Pansies, Violas, Pentstemons, and Phloxes.

—— A WARNING.—Several allotment holders at Kent House, Beckenham, have this season lost portions of their produce, and the police have failed to make any arrest. One allottee evidently intends taking the law in his own hands. He has put up a board with the following notice: "The Lord helps those who help themselves; but the Lord help that man I catch helping himself to my Marrows.'

—— APPLE KERRY PIPPIN.—"D." in his note on page 265 is in error in stating this variety had not been previously shown in the flavour competition. Last year it came before the judges on two occasions, but failed to get an award. It seems scarcely credible that gardeners can be so ignorant respecting the Veitch competition. I see the prizes were won last year (from July to December) by sixteen different exhibitors from diverse parts of the country, so that the competition is not so much restricted.—A COUNTRY GARDENER.

—— THE FLAX INDUSTRY.—It is said that an effort is being made to revive the Flax industry in the eastern counties, particularly in Lincolnshire. At present the counties in which Flax is chiefly grown are Yorkshire, Essex, Suffolk, and Somerset. More is cultivated in the East and West Ridings of Yorkshire than anywhere else. In Great Britain last year only 1800 acres were under cultivation, but in Ireland the acreage where Flax was grown was 73,301, though that was 25,000 acres less than the previous year.

—— SUTTONS' EPICURE BEAN.—Having grown this excellent climbing Bean for three seasons, I am more than ever impressed with its value on every point. As a cropper it is marvellous, the clusters of light green beans hanging in the greatest profusion. Long after the ordinary French Bean is past its best Epicure is in fine condition, and it is a rarity to find a stringy pod. I should imagine that a variety of Butter Bean has been used as one of the parents, as when cooked they are somewhat of a paler colour. It is of such usefulness at the present time and until frost cuts it down, that I can with confidence recommend all unacquainted with this variety to make a note of it for next season.—R. P. R., *Liverpool.*

—— THE JAPANESE FLORAL CALENDAR.—Details are given of the Japanese floral calendar in the "Far East," and as the Japanese are notoriously fond of flowers, also of Maple leaves, a summary of this may be read with interest. January is represented by the Pine, and on New Year's Day every house is decorated with its branches. Its never-fading colour is considered as the emblem of eternal prosperity and long life. February is associated with Plum blossoms, which stand for virtue and purity. March is sacred to the Peach blossom, to which young girls are likened. April is the month for Cherry blossoms, the most beloved of any flower. May follows with Wistaria, and June with the Iris and Water Lilies. The festival of the Iris is dedicated to the boys, just as the Peach celebration is consecrated to young girls. August and September are identified with flowering species of Hibiscus and Azalea. October is the month of the Chrysanthemum, the Royal Flower of Japan, which figures in the crest of the Imperial family. There is a national festival of Chrysanthemums, which greatly stimulates the loyalty of the nation. November is distinguished by its Maple leaves, while December is associated with Camellias, which blossom out of doors though often covered with snow.

— ERIOBOTRYA JAPONICA.—In favoured localities the Loquat, or Japanese Quince, as this plant is popularly called, makes a handsome evergreen bush or wall plant when grown outside, and with slight protection comes through all but the most severe winters unharmed. It is seldom, however, that flowers are produced outside in England, probably from the wood not being sufficiently ripened, and from the flowering period being very late in the year. When grown under glass, though, flowers and fruit are sometimes produced. In the Winter Garden at Kew a bush 12 feet high is now in flower. The inflorescences number from forty-five to fifty. The flowers are white, three-quarters of an inch or more across, and almond scented. They are produced thickly in panicles from the ends of the branches. The panicles when young are erect and covered with a grey felty pubescence. As they become older and the flowers open the pubescence becomes brown and the panicles slightly pendent. The fruit, when ripe, is somewhat ovate, orange yellow, about the size of a walnut, and edible. It ripens in the early spring. Although much more interesting when in flower or fruit, it is worth growing solely for the sake of its foliage. The leaves are about 10 inches in length by 3½ inches in width, and covered, particularly on the under surface, with a grey felty pubescence. The Kew plant is growing in a well drained bed in fairly heavy loam.—D. K.

—— Sweet Peas.—Can any of the Journal readers give an opinion regarding the Sweet Peas raised by a well-known American firm and sold in sealed packets last spring by British seedsmen? I have had no experience except from the packets of mixed varieties, but have been disappointed with the flowers produced. They are no advance upon Eckford's or Laxton's well proved strains. It may be, however, that the wet season we have had in my district has been more unfavourable to the American varieties than to the others. I should be grateful for the result of the experience of others.—A. Hardiman.

—— Wakefield Paxton Society.—Programme of meetings for the third quarter, session 1897. Meetings are held at eight o'clock prompt. September 25th: From Westgate to Kirkgate, via Chicago, illustrated by lantern slides; Mr. F. H. Wigham. October 2nd: Exhibition of Autumn Leaves and Fruits; essay by Mr. A. E. Benney, Bradford. October 9th: The Apple and Pear; Mr. A. H. Pearson, Chilwell Nurseries. October 16th: The Natural History of a Country Lane, illustrated by lantern slides; Mr. H. Crowther, F.R.M.S., Leeds. October 23rd: The Potato; exhibition of specimens, and discussion. October 30th: The Planting of Fruit Grounds; Mr. H. J. Monson, Yorkshire College. November 6th: Root Crops in the Kitchen Garden; Mr. J. G. Brown. November 13th: The Chrysanthemum Exhibition. November 20th: A Week in Hamburg, illustrated by lantern slides; Mr. H. S. Goodyear. November 27th: Some Useful Wild Plants; Mr. G. Bott.

—— Carnation Disease.—Some investigations by Mr. A. F. Woods of the Division of Vegetable Pathology in the Department of Agriculture, seem to indicate that the so-called "bacteriosis" of Carnations, first described by Dr. Arthur in 1889, is not due to bacteria, but is a direct result of injuries to the plant by thrips or aphides. In a paper read at the recent meeting of the American Association for the Advancement of Science, Mr. Woods brought out the fact that neither fungi nor bacteria are present in the earlier stages of the disease, and that their presence is not constant as the disease advances. A disease with all the characteristics of this bacteriosis, excepting the presence of bacteria, can be produced by aphides, and since the injuries in their earlier stages are not accompanied by bacteria, the aphides cannot be charged with carrying any infectious germ. The Carnation is readily influenced by extraneous conditions, and the reaction to the injuries of aphides and thrips vary largely, and plants carelessly grown suffer more seriously from punctures by the aphis than vigorous plants do. The sum of the matter is, that the greatest care should be used in selecting and propagating stock, in furnishing conditions for vigorous growth, and in keeping down aphides and thrips. It is these insects, and not bacteria, with which the practical grower must contend. Of course, good stock and good conditions of growth can never be neglected, and Mr. Woods' investigations give emphasis to what growers already know—that the disease is often the result of neglect, and that the way to have healthy plants is to give the closest attention to every detail of culture.—("Garden and Forest.")

—— The Fruit and Tomato Crops of Guernsey.—One can now speak with a little more certainty of what our season has been like. I believe the quantity of Tomatoes exported has been very large, but as the area of glass has also much increased since this time last year, there is no proof that the crop has been any better than that of last year—in fact, many establishments report the contrary. The long dull, damp, spell of weather we had from February to the end of May was much against a good "set" of fruit in the early houses, and not a few crops were spoiled by black stripe and other diseases. From some cause or other the later crops, taken generally, are not coming up to expectation. Fine robust plants may be seen without a flower "set" upon them. These are being pulled up in disgust, and the houses filled with Chrysanthemums, of which there are a large quantity being grown, greatly in excess of any previous year. The cultivation of Lilium auratum is also much increasing, so that we are looking forward to a busy autumn and winter, flower export trade being done. Grapes have been of very mixed quality, many Hamburghs in the unheated houses refusing to colour, others shanking badly. But with the little knowledge most of our Guernsey growers possess of growing Grapes on scientific principles, failures are not to be wondered at, and but for a good natured climate they would come off much worse than they do. With regard to outdoor fruit, Apples are a fair crop, but as these are chiefly of the cider kinds scarcely any are exported. Pears are scantily grown, and are a moderate crop this year. Briefly, our own market, through the winter months, is chiefly dependent on supplies of fruit we get from Jersey and our neighbours the French.—X.

—— Gardening Appointments.—Mr. T. H. Davis has been appointed gardener to G. S. Eastcourt, Esq., Eastcourt Park, Tetbury. Mr. W. J. Meer has been appointed gardener to Major C. D. Shenton, Evercreech House, Bath.

—— Lysimachia clethroides.—This Loosestrife is rather an uncommon plant in the herbaceous border, though not very rare. The peculiar manner in which the extreme point of its flower droops while expanding renders it exceedingly interesting. As expansion takes place the flower spike assumes an erect habit. The flower is of the same form as a Clethra, hence its name, and the plant blooms during August. The height altogether is a yard under good cultivation. We have it growing at the back of the rockery, the heavy soil suiting it well. It is of a creeping habit under the surface, where its roots run freely, therefore no trouble to propagate it is experienced; in fact, it is liable to spread a little too rapidly.—E.

—— Shirley Gardeners' Association.—The monthly meeting of the above Society was held at the Parish Rooms, Shirley, Southampton, on Monday, the 20th inst., Mr. B. Ladhams presiding over a good attendance of the members. There was an exhibition of vegetables for prizes in the form of one silver and three bronze medals, presented by Messrs. Toogood & Sons, Southampton, for which there were seven entries. The silver medal and certificate was awarded to G. W. Fleming, Esq., Chilworth Manor (gardener, Mr. W. Mitchell); bronze medal to W. F. G. Spranger, Esq., Springhill, Southampton (gardener, Mr. Harry Curtis); bronze medal C. G. Stuart Menteth, Esq., J.P., Rownham's Mount (gardener, Mr. W. Risbridger). These were for six sorts of vegetables open to all members. There was a useful and interesting discussion on the exhibits.

LOCKE PARK, BARNSLEY.

Able and painstaking are the two adjectives that occur to one's mind as most fitted to apply to the gentleman in charge of this park, after a visit has been paid to it. A huge mound of Ivy first arrests the eye with no relief for at all events the first few minutes, but soon a long vista of horticultural splendour is unveiled, an altogether unsuspected panorama of artistic bedding, relieved and enhanced by the high banks studded with Hedera, Ilex, Retinosporas, Aucubas, and other shrubs. Alternately convex and concave, as it were, like the sides of natural rocks, are the beds arranged, the effect at every few steps being constantly changing. Lobelia pumila magnifica, the golden Calceolarias, white Milkmaid Violas, Dell's Beet, Cineraria maritima, Bijou and Flower of Spring Zonals, Pyrethrum selaginoides, East Lothian Stocks, ever and ever higher, until the most effective background that could be wished is furnished by Helianthus, Nicotiana affinis, and Dahlias in variety, surmounted as aforesaid by the healthy shrubs and ornamental trees in great variety. About 200 yards of this "feast for the horticultural mind," accompanied by the courteous, and, at times, jocular gardener in charge, Mr. Henshall, is at the time most enjoyable, and an experience on which the memory loves to dwell.

Passing cool graceful masses of such Ferns as Lastreas, Aspleniums, Scolopendriums, Athyriums and Blechnums in friendly rivalry, we emerge into a well asphalted walk, that I understand the public of Barnsley has the right of traversing by night and day.

About forty acres comprise this beautiful park, given by two generous donors for the public of Barnsley for ever. A few acres were added not many years ago, the gift of J. T. Wentworth, Esq., of Stainborough Hall, a sight of which I had from the centre of the park—an imposing Norman edifice of considerable historic interest. For a study in landscape work we have only to ascend the Locke Tower that was presented in 1877. The view from the summit is delightful. There may perhaps be fully too many Lombardy Poplars, erect as Sir Oracle. The blending of the trees and shrubs, which for the most part are luxuriant, is admirable. Very noticeable are the fine specimen Hollies, and the judicious planting of the ornamental Prunus, Golden Elder, Acers, and Mountain Ash. True, there are occasional corners in the belts and exposed borders that pourtray the effects of the wind's ravages, but on the whole the wise pruning and annual thinning is carried out carefully and well.

The glass structures must not be omitted. They are conveniently situated near Mr. Henshall's house, and are necessary for the propagation of plants for the beds and borders; but by no means all the glass is devoted to such work. Many plants are grown for the enjoyment of visitors. Noticeable were richly coloured Crotons, Cannas (Madame Crozy and Australie being splendid), Coleus, some fine Dracænas Lindeni, Baptisti, Shepherdi, Youngi, and amabilis; rich Caladiums, Cocos flexuosa and Weddelliana; Aralia Veitchi, Anthurium Scherzerianum, Allamanda Williamsi (well flowered), Nepenthes Mastersiana, with Odontoglossums and Cypripediums in great variety.

In another compartment were to be seen large Fuchsias and Zonal Pelargoniums, profusely flowered Begonias, Heliotropes, Salvias, Ivy-leaved Pelargoniums, and healthy red and white Lapagerias. About 450 plants of Chrysanthemums are well grown, and include the best and most up-to-date varieties. A light repast and inspection of Mr. Henshall's not inconsiderable library concluded a most enjoyable and memorable visit to this beautiful Park.—Albert Upstone.

APPLE TREE TWIG AND BRANCH,

AND SOME THINGS ON THEM.

THE specimens sent some time ago for examination and report, in reply to the query of "F. W. C."—namely, "What is the matter with the enclosed Apple tree twigs and branch?" are so characteristic of the condition to which the British Apple tree may be reduced by the attacks of two of its most inveterate enemies, that portrayal of them cannot be otherwise than useful.

The twig (fig. 42. *A*) had been cut off by a knife at a point where the wood and bark were quite clean and healthy, and consisted of one to four-year-old growth, indicated by the figures 1–4. At the parts *a* mussel scale was securely fixed; at *b* some scale had been removed, imparting a mottled appearance, and the wood there had become more or less swollen, with the bark wrinkled and cracked. The only living buds were those marked *c*, numerous spurs (*d*) having died.

On removing some of the mussel scale (*B*) there fell out fine dust-like particles (*e*), just visible to the unaided eye, some white eggs, and black dross. As there was nothing more discernible on the twig, except a minute pale pink speck in a crack (which will be referred to), I cut off a small slice of bark (*C*), and on examining it with a lens enlarging six diameters, was struck by the small size of the scale; they were not larger than one-third the normal size of those on vigorous Apple trees, which may be due to poverty of food.

Turning over a scale (*D*) some eggs (*f*) fell out. Looking at the upturned scale with a lens magnifying 20 diameters, it appeared as shown at *E*, the lily white eggs (*g*) being very conspicuous. They were noticed to vary greatly in form, therefore I placed three (*F*) on a glass slide, and looked at them through a lens enlarging 150 diameters. Their size was especially noticeable, being at least two-thirds less than normal ones. They appeared white (without light thrown on them by the reflector from below), and had each a bright luminous spot (*h*). Turning on the light the eggs were seen to be opaque (*i*), with a thick outside shell (*j*) and yolk (*k*) inside, the nucleus (*l*) appearing very distinctly and evidently working. That was all there was to be seen as regards the scale at the time, but sufficient for identification, namely:—Mussel Scale. *Mytilapsis pomorum*, Bouché.

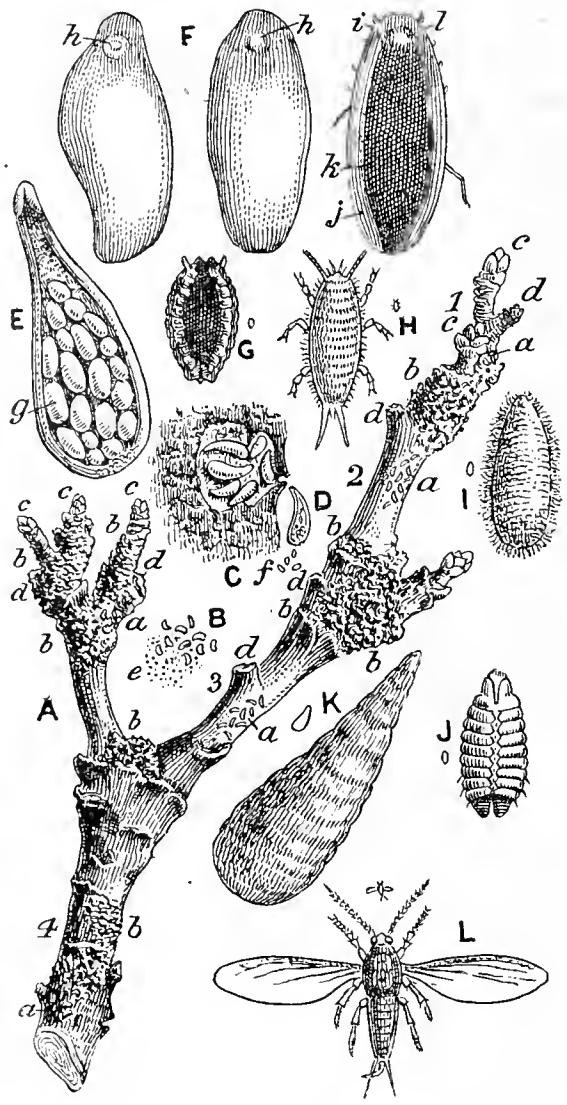

FIG. 42.—APPLE TREE TWIG INFESTED BY MUSSEL SCALE.

Referenees:—*A*, twig, showing: year's growths 1—4; *a*, fixed scale; *b*, place where scale removed; *c*, living buds; *d*, dead spurs. *B*, matured scale; *e*, dust-like contents. *C*, small slice of bark with scale enlarged 4 diameters. *D*, under side of a scale; *f*, eggs (enlarged 4 diameters). *E*, the same magnified 20 times; *g*, eggs. *F*, eggs (enlarged 100 times), showing: *h*, luminous spot; *i*, opaque (as seen illumined)—*j*, outside shell; *k*, yolk; *l*, nucleus = Mytilapsis pomorum in embryo. *G*, form of egg before insect emerges. *H*, larva. *I*, female or scale "fixed." *J*, pupa form of insect. *K*, hard brown shell = scale. *L*, male = Mytilapsis pomorum—female *J*. (*G*—*L* magnified, natural size on side.)

It is hatched from the eggs about the middle of May, sometimes earlier, and at others later, according to season, the egg usually assuming a woodlouse-like form before the larva emerges, as shown at *G*. The larva (*H*) is white at first, becoming yellowish or grey, as also do the eggs before hatching, and it has six legs, jointed antennæ, side bristles, and caudal hairs—an elongated, woodlouse-like creature. The larvæ, which, escaping the attention of carnivorous insects and birds, soon settle down, always on living bark where the sap flows by to buds or fruits, and push their beaks into the tissues of the bark, causing the tree to strive repair the injury done by growth of cellular tissue, and the twig below may become swollen more or less, whilst where the insects are it gets smaller. Sometimes the larvæ fix on the footstalks of the fruit, especially on Pears, and even on the fruit itself, and it means diminution of the supplies of nutriment to the immediate parts and those above, hence resulting in depression.

The creature that fixes itself is the female (*I*), which turns to pupa, and commences to form a scale, fastening it with threads to the bark, with openings between, so that breathing is not interfered with. If we turn up one of such soft scale (*J*) it is seen the insect has dispensed with the legs and other appurtenances, retaining only three pairs of bristles on the hinder part of the body, and has developed an enormous beak (when magnified), just the right length to reach the sap; also note the body is plainly segmented. Still it grows that is the scale, and at last becomes a hard brown shell (*K*), more or less curved and wrinkled across. The female produces ova or eggs, going on until there is not a particle of her body left but the head, then it is all over for that year or cycle, and there is nothing beneath the scale but eggs, a little white cottony matter, and some dirt.

Of course we have not as yet seen a Mytilapsis pomorum, only a bevy of eggs, larvæ, and perfect female. At *L* is the "lord" of the mussel scale family. Like to see one? Then get some strips of bright tin plate, about 3 inches wide and a foot long, paint both sides with a smear formed of sweet oil and resin, melted. putting on with a brush lightly, and it then shines like gold and silver, placing in the forks of the Apple tree, when, or soon after, the females fix themselves. Look carefully with a magnifying glass, and amid the host of captured creatures may be found the exact model of the insect shown at *L*. Perhaps it may be the first time, or probably not for years, for male scale insects are about as difficult to catch as the females are the reverse.

"F. W. C." wishes to know what he can do in his case as preventive and remedial. The case is such a complicated one, as we shall show presently, that it is difficult to confine our remarks to the mussel scale, but as there are instances where there is it without the other things, we may dispose of the scale first, and mention for avoidance the scraping of the bark with any kind of implement, for it is a bad old practice. Nevertheless, some ancient plans are good, one of the best the potash and soda solution of old-fashioned gardeners taken by Britain's sons and daughters to the ends of the earth, and given back to us in stronger and better acting form. I allude to Mr. Leonard Coates' solution of caustic soda and commercial potash, first propounded by him in the *Journal of Horticulture*. The old method was to place wood ashes in a wooden vessel and pour on enough rain water to cover them, allowing to steep two or three days and then strain off the clear liquid—potash lye. Measure the lye, and in another vessel place in as many ounces of washing soda as quarts of liquor measured, and pour on as much boiling water as the measure of potash lye, and when dissolved pour into the vessel containing the last named. While warm apply with a scrubbing brush to all affected parts of the tree, and with a half worn paint-brush to the spurs, applying thoroughly on a fine day while the trees are quite dormant.

Mr. Leonard Coates' solution has the advantage of being stronger, and can be sprayed on, therefore the work is more expeditiously performed. The formula is:—Half a pound each of caustic soda, 98 per cent. purity, and commercial potash—carbonate of potash or pearlash. Dissolve the articles in a small quantity of water separately, add together when dissolved, and dilute with hot water to 5 gallons, applying at a temperature of 130° by means of a spraying apparatus, wetting every part of the tree on a fine day, or when dry and not frozen, the buds being quite dormant. The best time, however, for killing scale is when they are in the larval state, soon after they have hatched, spraying with soluble petroleum or any approved insecticide about the middle of May, and at intervals of ten days to the middle of June. The scale are then as easily killed as aphides; but when they get fixed, resin washes are most effective on soft scale, forming an impervious coating over the insects and smothering them. If nothing be done in summer time, then there is the above-mentioned solution, also the old-fashioned never-failing dressing of boiled linseed oil, applied with a brush as soon as the trees are leafless. I have tried raw petroleum, and not found it clear some badly infested Pear trees on a wall, probably because it did not get under the scale and reach the eggs. It does not smother them like the oil, or dry them up like something caustic.

Now we will return to the living twig, *A* (fig. 42). Remember, it is alive, or scale would not be there, or the wood green, with buds at its extremities. Let there be no mistake about this matter, for it is the crux of the subject, and has reference only to a little pink speck in a crack of the bark; yet a very old acquaintance, and of disastrous consequences to Apple trees and many other species of widely different genera. For clearness, it is shown on a spur (where it occurs), *M* (fig. 43), enlarged four diameters. There are plenty of mussel scale insects (*m*), and these may easily be mistaken as the cause of the swelling (*n*). They certainly have made minute holes in the bark by their beaks, and something else has got through one of such openings, and this was the cause of the spurs dying. This I satisfied myself about by removing a slice of bark, and there, between the bark and wood, was fungal hyphæ.

We come to the crack (*o*), and a pale pink speck in it shown white (*p*). Removing that it appeared the size shown at *N*, and when magnified six diameters as at *O*, while at *P* it is represented twenty times and at *Q* 67 times larger than as seen by the unaided eye. It was noticed as a young fungal plant not fully developed, but sufficiently so for identification, the head having a paler stem spreading upwards into a somewhat globose crown, and when full-blown (*R*, enlarged twenty diameters), covered with a delicate mealy bloom. The body, at its base, penetrates to the inner bark, whence the mycelial threads spread in all directions, confined, however, to the cortical tissues, and not entering the

woody ones beneath. This gives rise to the swelling on the part of the plant—an abnormal growth of cellular and even woody matter, the fungal hyphæ always showing its appreciation by remaining in the inner bark or cambial cells between the bark and wood. Thus it exploits the host. The head of the fungoid body, examined with a lens enlarging 400 diameters, will be found to consist of delicate parallel threads compacted together to form the stem and head, some of which are simple, others branched (*S*), bearing upon them delicate little bodies—conidia (*q*), and is the fungus complete — capable of reproduction or continuation by seed (spores). The conidia are whitish and diaphanous, which on the pale pink stratum have a beautiful luminous appearance, and easily seen with the unaided eye. The whole is the fungus plant named *Tuberculariu expallens*, Fries.

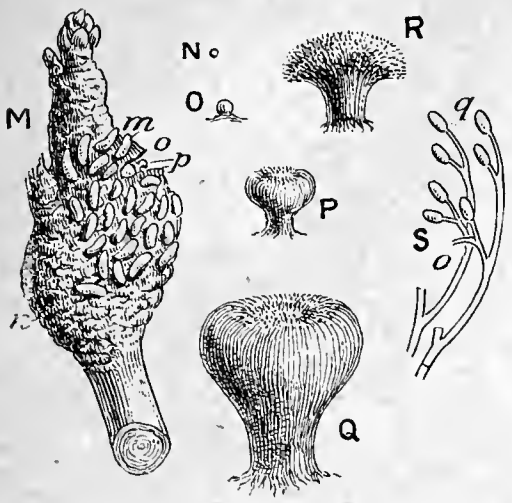

FIG. 43.—EARLY FRUCTIFYING FORM OF CANKER FUNGUS ON APPLE TREE TWIG.

References:—*M*, spur (enlarged 4 diameters); *m*, mussel scale; *n*, swelling (due to fungal hyphæ); *o*, crack in bark; *p*, pale pink speck. *N*, speck (natural size). *O*, the same enlarged 4 diameters. *P*, ditto, 20 times. *Q*, ditto, 67 diameters. *R*, full-blown fungus (enlarged 20 diameters). *S*, portion of fructification (enlarged 267 times); *q*, conidia or spores = Tuberculuria expallans.

When the conidia are dispersed by wind, they, or some of them, may fall on Apple or other trees affording the essential food of the Tuberculuria, and, lodging in a crack or hole made by the beak of a female mussel scale, push a germ-tube into the crevices of the bark, and thus enter by sheer force of growth into the tissues of the inner bark. But frost and many other things may occur to upset fungal schemes, therefore this one has prepared for casualties by providing subglobose bodies springing from a common stroma or stem, and following on after the conidia are shed. These subglobose bodies are perithecia, in which the final or complete stage of the fungus is perfected, so that the seed (spores) produced are practically frost, wet, and drought-proof while they remain in the perithecium, and only when the weather is warm and the air suffused by "a soft glow of moisture" do they come forth, rising and sailing in the air by means provided for that purpose.

Now we come to examining "F. W. C.'s" Apple tree branch (*T*, fig. 44). It had been sawn off at bottom (*r*), and broken off at the top (*s*), and mainly consisted of a scar. The bark was off the lower part (*t*), but on the upper portion (*u*), was not dead, yet dried, evidently wanting sap. The part above the scar must have received nourishment in the last two years through the inner wood, or have lived upon the stored matter above for that period.

The scar represents what had occurred during the previous eight years, six on the wood (1-6), and two on the bark (7 and 8), each representing the advance of something at the expense of the living branch. The something had entered at *v*, and had come out after eight seasons, as indicated by the small circles on the bark—some on the two-year-old (*w*), and others on the, at least, nine years old (*x*), even on the inside edge of a splintered part (*y*), and on the older bark adhering in a patch (*z*) to the scar.

These little bright pink pimples are round, and they break through the bark erumpantly, being clustered together as shown at *U*, enlarged four diameters. They become redder with age—a glowing crimson, each a perithecium (a receptacle formed of one valve). All are alike, but varying considerably in size, and when mature become brown or blackish, somewhat warted or pimpled and hard. They are attached to a common stroma, and the mycelia spreads inwards between the bark and wood, but growth is outwards in this instance, the hyphæ compacted around the pyrithecium to form the shell, granular, and inside that a sort of membrane, but all cells, as also is the internal contents.

A perithecium is shown at *V*, enlarged 67 diameters, with a sort of nipple at the apex (*a*), which becomes more or less depressed, and ultimately serves as the aperture by which the spores escape into the air. If cut through when immature it appears as figured at *W*, externally granular (*b*), and internally filled with a gelatinous nucleus (*c*). Later on the nucleus develops fructification (*X*), cylindrical asci (*d*), each enclosing eight elliptical sporidia (spores) closely packed together, and mixed with slender septate threads, simple or branched, and called paraphyses (*e*), enlarged 134 diameters. Thus the perfect form is ultimately reached, and it is the canker fungus, *Nectria ditissima*.

In the perithecium the plant may rest a considerable time—months, if not years, but the spores are always liberated when the external conditions are favourable for development, and they, or some of them, always manage to find out the varieties of Apples most vulnerable, including some having the richest sap—Ribston Pippin, Cox's Orange Pippin, Golden Pippin, and the Reinettes. What time the spores go forth has not clearly been ascertained, but there comes a right time and proper place for the spore (*Y*, enlarged 334 diameters), on an Apple tree, such as a crack, hole or crevice, and in the one or other it pushes a germ-tube from one or both cells, for it consists of two, and the hypha (*f*) or hyphæ (*g*) find access to the tissues between the bark and wood, there always being a niche around the circumference of a wound.

The tree does its best to cover the wound by which the fungus germ-tube gains entrance into its tissues and makes extraordinary efforts to extrude the intruding organism. The result is that the latter is grown over and gets firmly seated in the soft cellular tissues spreading year by year, until it girdles the branches, and then comes the end. It is a bad case, but there are plenty similar in orchards, yea, and in gardens. The scale has covered the bark more or less with excreta, and on that was the saprophytic fungus called black mould, Fumago vagans, shown at *Z*, enlarged 134 diameters. There was also some lichen and moss. All the overgrowths may be destroyed by the caustic application before mentioned.

As special applications for the canker fungus, after cutting off and burning any twigs or branches wholly or nearly girdled, wash every part with a solution of sulphate of iron, 1 lb. to a gallon of water, applying with a brush; or spray with a solution of sulphate of copper, 1 lb. to 25 gallons of water, using as much quicklime as sulphate of copper, so as to get a protective coating of carbonate without interfering with the immediate action of the sulphate on the fungus. This will certainly destroy the conidial form, and even young perithecia, and, sinking into the cracks, do something to affect the mycelium, besides killing lichenous and mossy growths. These applications must be made whilst the trees are quite dormant, two being best—one as soon as the leaves are all down, and the second just before the buds commence swelling.

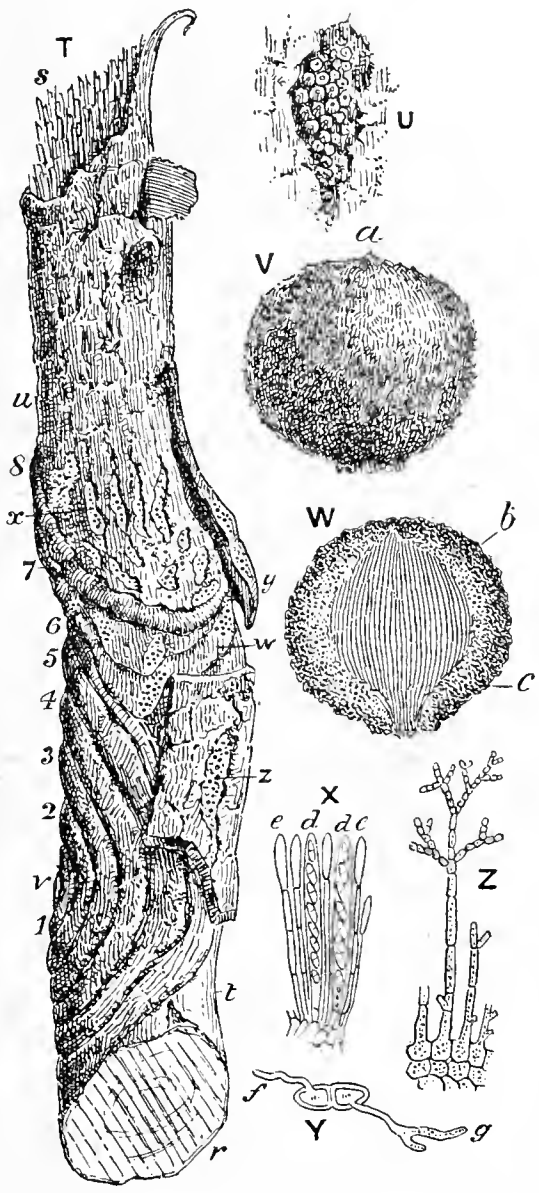

FIG. 44.—CANKER FUNGUS ON APPLE.

References:—*T*, part branch of Apple tree, showing: *r*, sawn off end—sounduess of wood; *s*, broken off end; *t*, bark off; *u*, bark on, living, but dried; 1—6, rings corresponding to advance of fungus hyphæ; 7 and 8, fungus and host in final "struggle for existence;" *v*, point of attack by fungus by germ tube from spore; *w*, outgrowths—pustules of fungus on two-year-old bark; *x*, ditto on nine-year-old bark; *y*, ditto on inner bark of splinter of bark; *z*, patch of perithecia (fruits of fungus) on old bark adhering to scar. *U*, cluster of perithecia (fruits) in crack of bark (enlarged 4 diameters). *V*, perithecium of fungus (magnified 67 times); *a*, nipple, ultimately depressed. *W*, section of perithecium; *b*, external granular coat; *c*, gelatinous nucleus. *X*, fructification of fungus; *d*, cylindrical asci, containing spores; *e*, paraphyses (enlarged 134 diameters) = Nectria ditissima. *Y*, spore (magnified 334 times) = fungus in embryo; *f*, germ-tube or hypha; *g*, hyphæ (branched thread) = mycelial hyphæ. *Z*, black mould growing on excreta of scale (enlarged 134 diameters) = Fumago vagans.

As dressing for the wounds, there is nothing better than a clay plaster, tenacious clay being dried and pounded into powder, then made into a putty with soluble petroleum, easily made by dissolving 1¼ lb. of softsoap by boiling in a gallon of water, and when boiling, but removed from the fire, adding a pint of petroleum, stirring briskly till amalgamated. The wounds may first be brushed out with the soluble petroleum, or preferably sulphate of copper solution, 1 oz. to 1½ gallon of water, and then the composition forced in, having the stopping level with the wound. The petroleum sinks into the wood, gets at the mycelium of the fungus, and kills all it reaches. Mr. Kruse was the first to record the beneficent action of petroleum on canker-fungus in Apple trees, and in the *Journal of Horticulture*, whilst Mr. Allan, Gunton Park, Norwich, recorded the value of the soluble petroleum and clay composition. This encourages the growth of new bark over the wounds by annual rings in the directly opposite way that the fungus takes it off.

Against both scale and fungus spraying at the middle of May, again in ten days, and a third time early in June answers remarkably well with the petroleum emulsion given above, diluting the whole (5 quarts, or thereabouts) to 10 gallons by adding the requisite amount of hot, soft water, and using at a temperature of 90° to 100° when the sun is off the trees. This—1 in 70—petroleum spraying, answers well against all insects unfixed by their beaks in the plant tissues, and

does speedy execution on red spider, also on most epiphytal parasitic fungi, such as mildew, even preventing spores pushing germ-tubes into the tissues of their hosts.—G. ABBEY.

[The publication of this article, which we suspect no other gardener than Mr. Abbey could have written, has been deferred till the time is approaching for the fall of the leaf and the dressing of trees for the subjugation of their enemies.]

CRICKET ST. THOMAS.

LYING somewhat out of the beaten track of horticultural travel, this really very lovely place is about four miles from the small station known as Chard Junction, on the South-Western system, and being on an elevation has commanding views, chiefly of the county of Dorset, in the direction of Weymouth and the sea coast, and has immediately beneath its front the broad and beautiful valley of the Axe, stream or river, which so largely divides Somerset from Dorset. Mr. Crook of Forde Abbey recently drove me over to see this estate, where I found the gardener to be Mr. Lyon, once so well known when at Sundridge Park, Chislehurst, who has since his frequent visits to South Kensington, when both a successful exhibitor and member of the Fruit Committee, become rather greyer, yet seems to be in the full vigour of manhood.

Cricket St. Thomas, though such a singularly beautiful place, for the fine undulations of the park, the noble groups or individual trees, the beautiful as well as luxuriant greenery of the pasture, and the general contour of the place and gardens, with the lovely views beyond, arouse one's enthusiasm—is, all the same, in an unfortunate position. Long the home of the Hood family, the present head of which is the aged Lord Bridport, it is now in the market for private sale, and may shortly pass into the hands of one or other of our rich traders, who are fast becoming the real aristocracy of the kingdom. The old order changeth, is as true of estates as of men, and we see now in every direction the ancestral homes of the landed gentry passing into the hands of the newer rich trader, who, if he will carry into his new sphere liberal ideas, liberal expenditure, a real love for gardening and rural life, and will seek to make the lives of the people about him prosperous and happy, will indeed play a great part in bringing back to these fine old estates much that will be heartily welcomed.

Knowing how largely at Cricket the gardeners' labours had for several years been devoted to the production of fruit and vegetables for market sale, the house having been for a long time unoccupied, I was not prepared to see the pleasure grounds so admirably kept, or the kitchen gardens and houses so capitally utilised. Certainly both gardener and garden merit liberal expenditure, for the best has been done to deserve it.

The house is not a large one, but seems particularly adapted to furnish comfort. The natural prompting is to wish for so fine and so commanding a site a noble mansion. But huge mansions become to so many families great white elephants, in course of time, that it may be well all the same to suppress the desire. The present one is flanked on each side by bold lofty glass corridors, that seem to materially enlarge it, and behind the southern one is a large conservatory. Within the northern corridor I noticed some remarkable plants of the yellow Cassia corymbosa. These were trained to trellises 6 feet wide and 15 feet in height. There were four in number, and they covered the walls between the lofty windows of the room inside. They were planted in stout wood boxes 6 feet long and 2 feet wide, and were literally from top to bottom masses of bloom and foliage. Strong growing scarlet Pelargoniums were carried up and intermixed with the Cassias, and the front of the boxes were faced with a few dwarf ones. These boxes and plants are removed, shortened back, and stood at the back of a lofty Camellia house during the winter. Close by there is the fine climbing Souvenir de la Malmaison Rose previously referred to, and just beyond a grand white Datura suaveolens, forty years old, having a tall huge stem and gigantic head.

On a broad border beneath these yellow Callas are planted out, having been there three years. They had thrown up numerous stout leaf growths, and when in flower present a big bunch of leaves and spathes. On the front broad pilasters supporting the fronts of the corridors are trained various Fuchsias, growths being also carried along the tops of the windows horizontally. They are close trained to the masonry, and were literally masses of bloom. Amongst them were the fine old varieties Marie Cornellissen, Venus de Mediei, Rose of Castile, and others. These presented a very unusual feature in conservatory decoration. Arundo conspicua variegata is very fine and effective for its luxuriant growth here; so, too, in another corridor, is the beautiful Solanum jasminoides. One plant put out at the base of the back wall, others at the upper part, fully 40 feet length, and blooming most profusely. This is indeed a lovely house climber. Camellias are in grand form; so, too, are Roses, as previously mentioned.

A big plant of Climbing Niphetos Rose seems to have been at Cricket before the variety was put into commerce. The old Cloth of Gold, referred to recently, with its marvellous stem, Mr. Lyon mentions, seems to bloom only in the spring; but the flowers are of the most brilliant yellow, quite eclipsing the well-known Marechal Niel. Climbing Devoniensis is also very aged here. In the conservatory the roof is hung with Tacsonia Van Volxemi, blooming in rich profusion. A more beautiful conservatory roof climber than this, and one that gives less trouble to keep clean, does not exist. Apart from their splendid and picturesque situation and surroundings, the pleasure grounds are rich in fine trees, and one, having an historical and somewhat pathetic interest, is a Willow growing beside a spring that bubbles out from the hillside, grown from a cutting taken from the famous Willow beside Napoleon's former tomb at St. Helena.

Though the houses and kitchen gardens have to produce market material, they are well kept and utilised. Grapes, Peaches, Figs, Plums, Tomatoes, Cucumbers, Melons, are all well grown, and so are vegetables. There was a big breadth of the true Ashleaf Kidney, of which some lifted showed a fine sample, and very true to character. This first early Potato is in great favour in the West, where its yellow flesh and nutty flavour is fully recognised. My notes were few, and I write chiefly from memory, but I may hope to see Cricket St. Thomas some day yet under happier auspices, when with a wealthy and liberal owner it may be seen in all that high perfection in gardening the place so richly merits.—A. D.

NOTES FROM IRELAND.

UNTIL recently the general outlook, so far as the staple food products were concerned, was decidedly gloomy, and he would be a bold prophet indeed who would say, even upon the strength of ten days' fine weather generally prevailing over the island, that any great things are promised on the credit side. However, a continuance of the blessing lately vouchsafed was much to be desired, but unfortunately a return has been made to the old order of things, and, judging by meteorological observations from over a wide area, the relapse may prove to be more than a temporary one.

Respecting the harvest our press reports are somewhat conflicting, emanating perhaps from those who are inclined to take extreme views. To say that the harvest, which at least appears to be of fair average in the comparatively early districts of Dublin and its environs, was saved without damage would be saying too much, but undoubtedly a spell of fine weather raised the tone from one of despondency to one of hopefulness, even to that of congratulation, with those who can now say, "All is safely gathered in," irrespective of quality or quantity. That such is not universal is well understood by those who know the wide range of climatic conditions between the eastern and western seaboards, and in the latter, where the whole course of operations is necessarily later, anxiety must not only continue, but increase.

So far as concerns the Potato crop, and that appears to be the chief concern; and one may here remark, what has been more than once remarked by those well versed in Irish political economy, that it is a matter for regret so much dependence is still placed upon it, the prospect is bad. So far, indeed, is the dreaded blight in evidence, that reports from some places show no prospect, total failure being the result of an abnormally early visitation of the foe, which during the whole month of August ravaged some of the more remote localities unchecked. This, of course, means disaster, which so far is localised to certain areas. Never before has the value of spraying been so much in evidence, and possibly the evil will entail some good by attention being forced to the combative process. The remarkable rapidity with which the common foe has marched upon us this year shows the vital necessity of prompt action. Those who are interested in the question might study the value of spraying; might from the present standpoint seriously inquire whether it can honestly claim all the merits that have been showered upon it. If results are satisfactory—convincing, and in my opinion deduced more from observation, I will allow, than from experience, they are, why temporise, one may reasonably ask, with so subtle a foe any longer?

As a cure the virtues of spraying are, I believe, practically nil, but as a preventive so much proof has been adduced of its efficacy that but little doubt need remain upon that point. In this is the whole gist of the question; a question of such importance to the poorer population on this side the Channel, and one, too, which the United Kingdom can neither wisely nor humanely ignore, that one is led to speak strongly upon it, and ask for pity's sake why some urgent measures are not taken to cope with the common enemy. Non-interference in this case appears to be not only a bad policy, but, what is worse, no policy at all. One would scarcely dare venture in these pages to broach even political economy, that is, so far as politics themselves pertain to it, but the matter is one of far too deep concern to allow any little feeling of that kind to preclude it; and sooner or later those who take up the responsibility of the commonwealth will have to face this question, and not only face it, but grapple with it. Much has been done, we admit, to publicly impress the matter; chiefly, if not solely, in the way of good advice. Good advice costs nothing, and such cheap commodities, if appreciated, are seldom availed of.

"Ten shillings and costs" if my dog goes without a muzzle; something else and costs if my baby is not vaccinated; no admittance from an infected port when cholera morbus is on the march; but for Phytophora infestans, which threatens to take a nation in the jaws of famine, which works its ravages unchecked by legislation, and floats in the water-charged atmosphere unrestricted, nothing—nothing; or, at least, that is what the few half-hearted measures practically amount to. I am quite certain these crude expressions on a subject of vital importance, which these brief notes have drifted into, could by a few polished shafts, driven by abler pens, be shattered, but it would be far more to the purpose if the powers that be adopted a decisive policy. Compulsory measures? Even so. "Desperate diseases require desperate remedies," and who shall say that rabies, small-pox, or cholera morbus are more dreaded foes generally than Phytophora infestans is, to Ireland in particular.—K., *Dublin.*

National Chrysanthemum Society.

The General Committee of this Society held a meeting on Monday last at Anderton's Hotel, Fleet Street, Mr. T. W. Sanders occupying the chair. After the usual preliminary business had been disposed of the Secretary read a list of awards of silver-gilt, silver, and bronze medals that were awarded at the recent exhibition at the Royal Aquarium. He then submitted a rough draft financial statement up to date, which was considered satisfactory in every respect. The place and date of the annual dinner were next discussed, and a Sub-Committee, consisting of Messrs. Bevan, Ballantine, and Berridge, was appointed to carry out the details incident thereto.

Some new members were then elected, and the North Canterbury Chrysanthemum Club of New Zealand was admitted in affiliation. Mr. Gordon reported for the benefit of those interested in early flowering varieties that a collection worthy of a visit was at present in flower at the Chiswick Gardens of the R.H.S., and would be worth seeing any time during a fortnight.

In the foreign department Mr. Harman Payne called attention to the forthcoming show and conference at Orleans under the auspices of the French National Society, the executive of which had expressed a wish to see some representatives of the English Society present. Mr. Payne promised to give all further information necessary if it was ultimately arranged for such an interchange of good feeling between the sister societies to take place. A vote of thanks to the Chairman brought the proceedings to a close.

Feeding Chrysanthemums.

Now that the time has arrived for supplying the wants of Chrysanthemums in the shape of manures and other stimulants, I venture to pen a few methods by which the plants may be invigorated. In the first place, no plants should receive artificial or liquid manures until the pots are well filled with roots, as this kind of feeding is not intended to make, nor will it ever succeed in making, rootless plants strong. Feeding such examples mostly has the opposite effect of killing the plants outright. Even when in good health some kinds will not succeed under the periodical use of artificial manures, which can be administered to strong growers without danger when properly applied. The weak rooters may be easily discerned by watching the plants when watering. Many kinds will be still quite moist when the strong feeders are quite ready for water.

Those enthusiasts who pot early in order to get strong plants, thinking of defeating their neighbours (though this early potting is not always the safest), will require to use weak stimulants by the beginning of August. A butt or barrel of some kind should be in readiness. Nothing is better at that time than fresh cow manure and soot. The former should be placed in a wicker hamper with a lid, so that it may be tied down to keep all litter from floating about the receptacle. The soot should be put into a bag and tied loosely; about a peck is sufficient for a paraffin cask full of water, also the same quantity of cow manure, which should be taken out and replaced with fresh every week or so, according to the quantity of water used. The soot will last a fortnight, and will then require to be replaced by a fresh supply. I mention paraffin casks, as these are frequently used for the purpose, after being burned out to cleanse them. Soft water should be used in all cases if procurable. When watering dilute the liquid to the colour of pale brandy, using it twice a week at the commencement. After three weeks the plants will benefit if they are watered alternately with the mixture. I have used horse manure with marked success in the same way, but it is best not to begin with it till September has arrived, not using it more than twice a week. Many of the Incurved kinds thrive immensely when fed judiciously with horse manure, especially the Queens and the Tecks.

When September has arrived feeding in earnest must begin to get the best results. We are now using the drainings of the stables, piggeries, and cowhouses, diluted to the strength mentioned above, or about a 2-gallon watering-can of the liquid to 30 gallons of clear water. We water alternately with this and clear water, giving a change once a week of Clay's or Pearson's chemical manure, using a pint to 30 gallons of water. This change, I should mention, is in the place of clear water, not interfering with the other feeding. Blood is often used, which can be readily obtained in towns or large villages by applying to a butcher. This should be placed in a tub, as before recommended, the soot bag being also added. One pint of this added to 2 gallons of water is sufficient, using it twice a week. I am afraid to recommend this to growers who have their plants close to the dwelling, as the scent from this fertiliser is not all that could be desired. Nevertheless, the finest foliage I have ever seen on the Chrysanthemum was on plants fed with bullock's blood and soot.

Where the cow manure is used throughout the season some other stimulant will be required after the middle of September. We change the diet by giving a dose of guano, one week Clay's, the next a change with Pearson's. Ours is mixed in the water at the same rate as before mentioned. I may here say that Pearson's manure is grand for keeping colour in the foliage, which is essential in all cases.

For small collections grown by amateurs these manures may be applied dry on the surface of the soil; a dessert-spoonful to a 9 or 10-inch pot will be ample. Where large bushes are grown for cutting in large pots they will need more support than a plant that has three or four blooms to open. Much may be done to benefit the plants by top-dressings. These are especially recommended where it may be difficult to obtain the ingredients recommended above. Those who keep a fowl run would find the manure from the roost a good fertiliser. Before being used it should be thoroughly dried, in order that it may be broken into powder, and be thoroughly incorporated with the soil, using about a peck and a half to a moderate sized wheelbarrow load. If this cannot be had, where rabbits are kept in hutches the manure may be saved from them, and it will answer a similar purpose, using the same quantity as of fowl manure. Sheep manure may be also employed in the same form. Clay's fertiliser is also recommendable, using a 6-inch potful to a bushel of soil. The pots should be filled not later than the 1st of September. In all cases a little soot should be used in the mixture—say half a 6-inch potful to a bushel of soil. Watering should be done with a rose for ten days at least after the top-dressing.

We practise this system, using liquids as before stated, but only with plants grown to produce specimen or exhibition blooms. Where large pots are used the plants will not require so much artificial manuring. When potting a knowledge of the kinds is necessary with regard to their constitution, always giving the strongest growers the largest pots, as some kinds will produce as good flowers in an 8-inch pot as others in 10 or 11-inch pots. Feeding should cease when the flowers are half expanded.—An Old Grower.

ROYAL HORTICULTURAL SOCIETY.

DRILL HALL.—September 21st, 1897.

The Hall on Tuesday presented a singularly gay appearance, almost the whole of the tables being quite full; indeed there was packing observed occasionally. The vast majority of the exhibits were for the inspection of the Floral Committee, Dahlias being in very great force. Orchids were not at all numerous, and fruit and vegetables were very little staged. Probably the exhibitors of fruit are reserving themselves for the Crystal Palace next week.

Fruit Committee.—Present: P. Crowley, Esq. (in the chair); with Rev. W. Wilks, and Messrs. G. Bunyard, G. W. Cummins, W. Iggulden, J. Willard, J. H. Veitch, G. Norman, R. Fife, F. Q. Lane, G. T. Miles, G. Reynolds, W. J. Empson, G. Woodward, W. Bates, W. Farr, A. Dean, J. Smith, G. Willard, and J. Wright.

Mr. W. A. Bishop, The Gardens, Westley Hall, sent again some of his seedling Melons—namely Westley Defiance, over-ripe; Dr. Lionel Burrell, soft in the centre, hard at the rind; and Westley Hybrid, not of high quality, and passed.

Peach Late Devonian was sent by Messrs. Veitch & Son, Exeter. This variety was certificated in 1894. The tree is pronounced very hardy and a good bearer; flavour of the fruit is good, and the certificate was confirmed.

Mr. G. Bloxham sent from Brickhill Manor a fine bunch of Bloxham Seedling Grape, cut from a Vine in a pot. It is a greenish white Grape, with rather small roundish berries, having a very tough skin; flesh rather firm, juicy, sweet, with a pleasant flavour. If the berries will keep till March the variety may prove useful.

Mr. G. Woodward sent from Barham Court two dishes of Beurré Mortillet Pear, one from a tree established on Williams' Bon Chrêtien, the other on Doyenné du Comice. The latter were decidedly the larger and better. This is a promising early market Pear, and is said to be better from trees in the open than against walls. A cultural commendation was granted for these fine fruits.

Mr. Empson, gardener to Mrs. Wingfield, arranged quite a trophy of Onions in upwards of a dozen admirably grown varieties, of which Excelsior and Ailsa Craig appeared to be the finest (silver Knightian medal). Mr. W. Kemp, The Gunyah, Barnes, sent a collection of Melons and Cucumbers, and a vote of thanks was accorded.

The Veitchian Fruit Prizes for Flavour.—There was excellent competition with the following results:—*Apples.*—First, Mr. G. Wythes, Syon, with Ribston Pippin. Second, Col. Coleman, Reigate (Mr. King, gardener), with Worcester Pearmain. *Pears.*—First, Mr. C. Herrin, Dropmore, with Souvenir du Congrès. Second, Mr. Wythes, with Autumn Nelis.

Floral Committee.—Present: W. Marshall, Esq., (in the chair); with Messrs. H. B. May, C. T. Druery, R. Dean, J. H. Fitt, G. Stevens, J. F. McLeod, J. Jennings, T. Peed, R. B. Lowe, C. Jeffries, J. D. Pawle, D. B. Crane, E. Beckett, G. Paul, J. W. Barr, and J. Fraser.

A charming display of Roses was made by Messrs. W. Paul & Son, Waltham Cross. The flowers were of very good form, and served as an illustration of the varieties particularly adapted to an autumn display. Especially conspicuous were Queen Mab, Corinna, Camoens, Madame Pierre Cochet, Marie Van Houtte, Enchantress, Mrs. John Laing, and Empress Alexandra of Russia, each of which was shown in considerable quantities. Miscellaneous foliage plants were splendidly staged by Messrs. J. Laing & Sons, Forest Hill. The group comprised Crotons, Palms, and Dracænas, all well grown, and in excellent colour. Messrs. J. Peed & Son, Norwood, had a stand of a very similar nature.

Messrs. J. Veitch & Sons, Ltd., Chelsea, arranged a stand of herbaceous plants, in which large bunches of Michaelmas Daisies were

very noticeable. Amongst them were observed A. candidus, A. novi-belgi Apollo, A. amellus bessarabicus, A. Shorti, and A. acris. Other plants represented were Helianthus rigidus Miss Mellish, Rudbeckia nitida, Helianthus Soleil d'Or, Tritoma hybrida, and Anemone japonica in variety. Messrs. F. Sander & Co., St. Albans, sent handsome pieces of Physalis Franchetti. Several varieties of Chrysanthemums came from Mr. W. J. Godfrey, Exmouth. Lady Esther Smith, Madame Gustave Henry, Barbara Forbes, Miss Emily Silsbury, W. R. Prince, and Milano were the best. Messrs. W. Cutbush & Son, Highgate, showed a few Malmaison Carnations, with handsome fruiting sprays of Phytolacca decandra.

The exhibit of hardy herbaceous and hardy Cyclamens from Messrs. Paul & Son, Old Nurseries, Cheshunt, was a very handsome one. There were Asters ericoides, Clio, acris, bessarabicus, novi-belgi Purity, novæ-angliæ pulchellus, Senecio pulcher, Sanguisorba canadensis, Helianthus rigidus Miss Mellish, Coreopsis lanceolata, Anemone japonica, perennial Phloxes, Gladiolus, Rudbeckias and others. Mr. E. F. Such, Maidenhead, sent a good collection of early flowering Chrysanthemums; while Mr. G. Wythes, gardener to Earl Percy, Syon House, Brentford, arranged a group of splendidly flowered plants of Chrysanthemum Lady Mary Fitzwygram and Lilium Harrisi. Mr. H. B. May, Upper Edmonton, sent fine plants of the brilliant Salvia splendens grandiflora, as did Mr. J. Hudson, gardener to Leopold de Rothschild, Esq., Gunnersbury House, Acton. Mr. J. Witty, Nunhead Cemetery, sent a handsome group of Chrysanthemums interspersed with Ferns. The flowers were of capital quality both in respect of size and colour.

Mr. S. Mortimer, Farnham, Surrey, produced a very bright and attractive exhibit, comprising a good selection of Cactus Pompons, Show and Fancy varieties; Starfish, Harry Stredwick, Gloriosa, Eastern Queen, and J. E. Frewer were most conspicuous in the Cactus section, the Shows and Fancies being exceedingly bright and fresh. Jas. Vick, John Hickling, Majestic, Wm. Powell, Mrs. Saunders, and T. W. Girdlestone were well represented.

From Mr. C. Turner, Slough, came a very pleasing exhibit of Cactus and Pompon Dahlias. The former were effectively exhibited in baskets with their own foliage and Maidenhair Fern. Miss Annie Jones, Starfish, Mrs. W. Noble, Chas. Woodbridge, Iona, Fusilier, and Beatrice were exceptionally well shown. Mr. J. Green, Dereham, had a very good display of his novelties, exhibited on this occasion in a far more pleasing manner than at a former show this season; Norfolk Hero, Green's Gem, Midnight Sun, Mr. Moore, and Crimson King were well shown, all of them being quite distinct and of true Cactus type.

Messrs. J. Cheal & Sons, Crawley, exhibited Cactus, Pompon, and single Dahlias, the whole exhibit forming a very fine display. The Cactus section predominated, and contained some very fine sprays. The most notable were King of Siam, Starfish, Cycle, Harry Stredwick, Chas. Woodbridge, Fusilier, Mrs. John Goddard (a grand novelty), Miss Finch, and Mrs. Wilson Noble. The single section was very fresh, The Bride, Miss Glasscock, Victoria, Amos Perry, and Alba Perfecta being especially deserving of mention. Messrs. Keynes, Williams & Co. had a stand of Cactus varieties. Keynes' White (a variety of true form) was well represented; Cycle, Bridesmaid, Starfish, and Arachne were very attractive.

Messrs. J. Burrell & Co., Cambridge, exhibited Gladioli in their well-known style, staging a very large collection, the whole forming a fine exhibit. Atlas, Rayon d'Or, Formosa, Meyerbeer, Orphée, Baroness Burdett Coutts, Hetty Dean, Matador, and Mikado were most conspicuous. The same firm also exhibited fine stands of Cactus and Pompon Dahlias, the former fully maintaining the standard so well sustained throughout the season. Chas. Woodbridge, Falka, Casilda, H. Stredwick, Fantasy, and Regulus were in grand form. Mr. G. Humphries, Chippenham, also exhibited Dahlias, the Show, Fancy, and Cactus sections being well represented. Mr. J. T. West, Brentwood, staged a large and representative collection of Dahlias. The Cactus section contained some novelties of sterling merit. Island Queen, Oaklands, W. J. Frost, True Friend, and Eileen Palliser were very distinct and conspicuous.

An additional feature to the grand display of Dahlias exhibited on this occasion came from Messrs. Jones & Sons, Shrewsbury, who staged a very attractive exhibit to show how the Cactus section can be employed for decorative purposes. Baskets and bonquets were effectively shown, the colours chosen being those that lend themselves readily to this work. Another bright exhibit of Dahlias were staged by Messrs. H. Cannell and Sons, Swanley, the Cactus section predominating. Mrs. H. Cannell, Mrs. F. Fell, Fantasy, The Czar, Austin Cannell, and Cannell's Gem were amongst the best exhibited. Pompons were very bright and distinct, Pauline, Irene, Captain Boyton, Fabio, and Bacchus being most attractive. A group of Dahlias was staged from Leopold de Rothschild, Esq., Gunnersbury House, Acton (gardener, Mr. Hudson), comprising Cactus, single, and single Cactus varieties, the whole forming a very bright display.

FLORAL COMMITTEE AWARDS.—Silver-gilt Flora medal to Messrs. J. Burrell & Co., for Gladioli. Silver-gilt Banksian medal to Messrs. W. Paul & Son for Roses. Silver Flora medals to Messrs. H. Jones, C. Turner, J. Cheal & Sons, S. Mortimer for Dahlias; Mr. J. H. Witty for Chrysanthemums: J. Veitch & Sons, Ltd., for hardy flowers; J. Hudson for Salvias; and G. Wythes for Chrysanthemums. Silver Banksian medals to Messrs. H. B. May and J. Laing & Sons for plants; J. West for Dahlias, and Paul & Son for hardy flowers. Bronze Banksian medals to Messrs. J. Peed & Son for plants; E. Such for Chrysanthemums, and G. Humphries for Dahlias.

CERTIFICATES AND AWARDS OF MERIT.

Apera arundinacea (J. Veitch & Sons).—A most graceful Grass, which grows about 30 inches high. The inflorescence hangs over in a manner that suggests a fountain (first-class certificate).

Cattleya Hardyana Lowæ (H. Low & Co.).—A lovely variety of Hardyana. The sepals and petals are deep rose, and the velvety lip is very intense crimson (award of merit).

Chrysanthemum Mytchett White (M. Russell).—An excellent early flowering reflexed Japanese variety. The colour is pure white (award of merit).

Crassula Cooperi (Paul & Son).—A capital plant for carpet bedding. The colour of the flower is crimson (award of merit).

Dahlia Falka (J. Burrell & Co.).—A Cactus variety. The flowers are crimson maroon (award of merit).

Dahlia Casilda (J. Burrell & Co.).—A pure lemon yellow Cactus of the very best quality (award of merit).

Dahlia Salmon Queen (J. Burrell & Co.).—A lovely coppery apricot variety of the Cactus type (award of merit).

Dahlia Muriel Hobbs (T. Hobbs).—A handsome yellow coloured Show variety (award of merit).

Dahlia Island Queen (J. T. West).—Rich rosy lavender is the colour of this fine Cactus Dahlia (award of merit).

Dahlia Nelly Broomhead (J. T. West).—A Pompon of good quality. The colour is deep mauve (award of merit).

Dahlia Harbinger (H. P. Harris).—A Show Dahlia of fine form. The colour is mauve (award of merit).

Dahlia Keynes' White (Keynes, Williams & Co.). A white Cactus of excellent form (award of merit).

Dahlia Arachne (Keynes, Williams & Co.).—A bright rose and white striped decorative Cactus Dahlia of merit (award of merit).

Dahlia Laverstock Beauty (Keynes, Williams & Co.). — Very deep salmon is the colour of this Cactus Dahlia (award of merit).

Dahlia Mary Service (Keynes, Williams & Co.).—A peculiarly coloured Cactus. The centre is apricot, and the extremities of the petals lake (award of merit).

Dahlia Maluma (C. Turner).—A yellow Pompon of great beauty (award of merit).

Dahlia Green's Gem (J. Green).—A medium sized terra cotta variety of the Cactus type (award of merit).

Dahlia Miss Finch (J. Cheal & Sons).—A superb variety. The colour is deep crimson maroon (award of merit).

Dahlia Mrs. John Goddard (J. Cheal & Sons). A Cactus of fine type. The colour is rich scarlet crimson (award of merit).

Lælia præstans Gatton Park variety (J. Colman).—A charming variety. The sepals and petals a very delicate mauve, and the extremity of the lip deep mauve (first-class certificate).

Lycaste Denningsiana (F. W. Moore).—The petals and sepals of this Orchid are greenish yellow. The handsome lip is a very deep brick red (award of merit).

Miltonia Peetersiana (H. J. Chapman).—This is said to be a natural hybrid between M. spectabilis Morreliana and M. Regnildi. The colour is a peculiar slatey blue (award of merit).

Oncidium papilio (D. M. Grimsdale).—This Orchid is so well known that any description here would be superfluous (award of merit).

Primula obconica fimbriata (T. Lowton).—As the name implies, this is a fimbriated form of the type (award of merit).

Retinospora obtusa sulphurea (J. Veitch & Sons).—A beautiful variety, of which the leaf tips are of a pale yellow colour. The habit is very good (first-class certificate).

Vanda amœna J. O'Brien (L. Linden).—A most peculiarly coloured Orchid. It may be described as a grey, tinged with blue, and profusely spotted with blue at the base. The lip is blue, with purple speckles (award of merit).

WHO SPLICED THE GRAPES?

READERS of the *Journal of Horticulture* seem divided in opinion on the question of who spliced the Grapes, with intent to defraud at the Crystal Palace Show? The carefully written details of "On-looker," to my mind, savour very much of "the clever young assistant" trying to make two wrongs into one right, if possible. "Exhibitor," who seems to have been on the spot at the time of staging, gravely questions "On-looker's" statements, thereby casting a shadow on the "innocent exhibitor," who, others it seems as well as myself, thought surely would have risen to the occasion, if "innocent," and with any regard for an unsullied name.

After closely examining the interesting exhibit I heard a party of gardeners on the spot asking themselves why a method without a precedent should have been adopted—viz., after removing the slip—first prize—writing "Dis.' on the back of the card instead of *Disqualified* on the face of it? Was it in consideration of the prestige or the name, or the "innocence" of the exhibitor? Or was that "clever young assistant" at work again? If so, "Observer" may well remark, "What will he develop into later on?" My employer asked me if the exhibitor would be allowed to show again at the Agri-Horticultural Association's exhibitions?

Such tricks, unless satisfactorily explained, are not only a disgrace to those resorting to them, but cast a reflection on exhibitors and exhibitions generally.—FAIR PLAY.

PEAR GANSEL'S BERGAMOT.

If "Fruitman" will take the trouble to inquire he will find that many good gardeners entertain the opinion that this is one of the best of Pears. It is unquestionably a variety of great excellence, the fruit being of imposing appearance and splendid quality. Some Pears have become so popular that there is a slight danger of the merits of some good old varieties being overlooked. We would not that this were one of them, for where a good position against a wall can be afforded Gansel's Bergamot will occupy it worthily. The following notes on this Pear by the author of the "Fruit Manual" may be appropriately introduced here :—"The tree is a shy bearer during the first period of its growth, but when it becomes aged it produces more abundantly, though the fruit is of smaller size. To increase its fruitfulness, it has been recommended to impregnate the flowers with the pollen of some other variety, such as the Autumn Bergamot. It is generally believed that this variety was raised from seed of the Autumn Bergamot by Lieut.-General Gansel at his seat, Donneland Park, near Colchester, in 1768, and this rests upon a communication to that effect from Mr. David Jebb of Worcester, nephew of General Gansel, to Mr. Williams of Pitmaston. Mr. Lindley says, 'The Bonne Rouge of the French is evidently of the same sort, and the name must have been given it after its having been received from that country.' I am unwilling that any doubt should arise as to this esteemed favourite being a native fruit; but when I find, by the manuscript catalogue of the Brompton Park Nursery, that both the Bonne Rouge and Brocas Bergamot, which are acknowledged synonyms of Gansel's Bergamot, were cultivated there in 1753, I am inclined to doubt the correctness of the above statement, and as this catalogue is the earliest I have been able to procure of that nursery, it is possible that it was growing there at a much earlier period under both of these names. It is a dessert Pear of the highest merit; ripe during October and November. To have this delicious fruit in perfection it is necessary the tree should be planted against a south-east wall." The engraving (fig. 45) represents a fruit of Gansel's Bergamot.

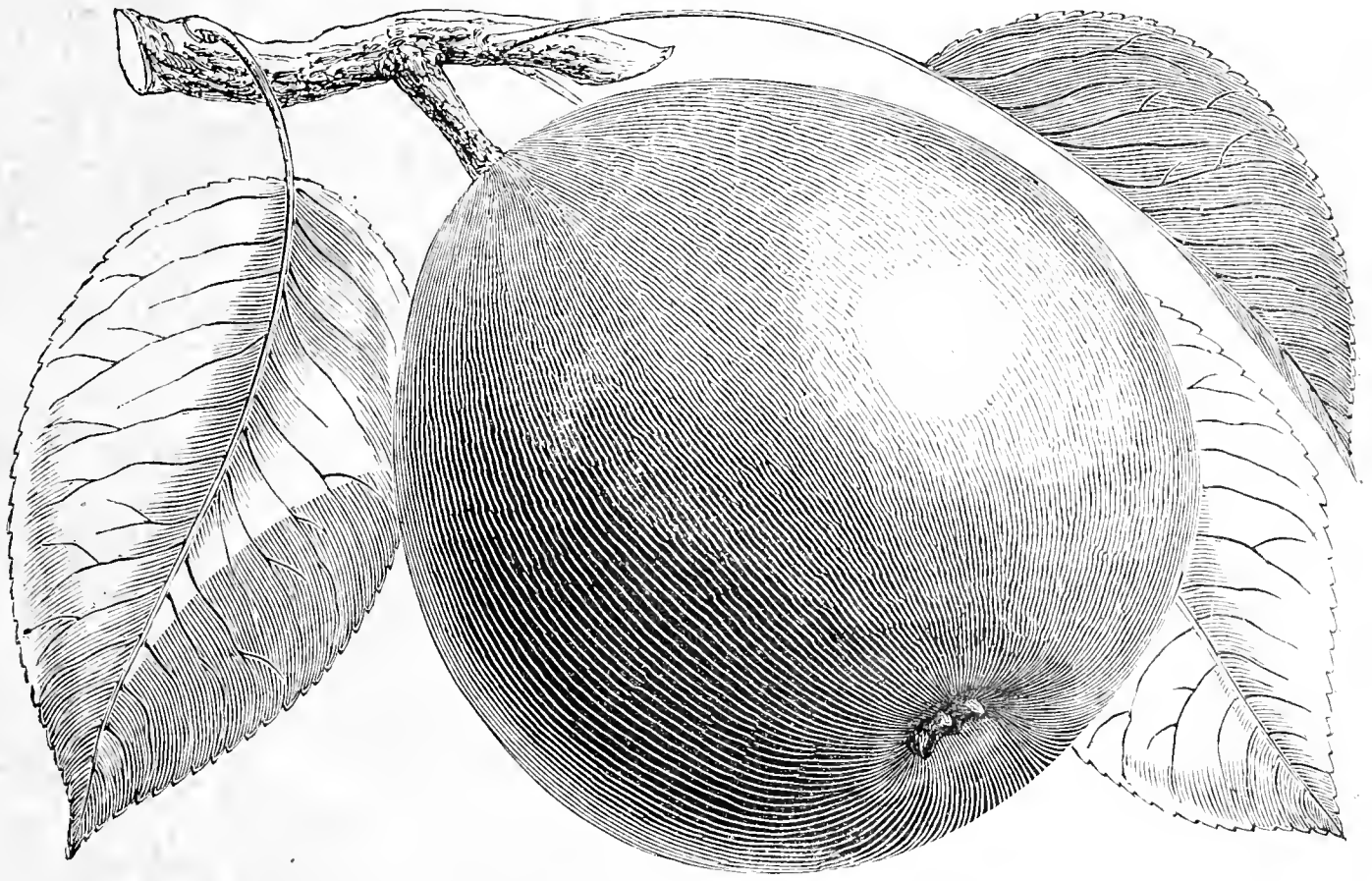

Fig. 45.—Pear Gansel's Bergamot.

NOTES FROM COOMBE WOOD NURSERY.

Calling in here the other day to get a shrub named I was induced to take a walk round, little expecting so late in the season to find anything of special interest. Really there were so many objects of interest that I found it hard to tear myself away. In the lower part of the grounds a pond contains many of Marliac's new and beautiful Nymphæas, with which Mr. Hudson has made us familiar. Around the pond is planted a garden of Bamboos, and there are in it thirty varieties. It will be most interesting in a year or two. Conspicuous, however, are two large plants of the new Pampas Grass, Gynerium Rendatleri, the plumes showing a dense reddish tinge that gives it an attractive appearance.

Hardy Heaths.

These are a remarkable feature, the variety is so great, and so many display such beauty. On the morning of my visit, Erica vulgaris alba had been hard cut to furnish hundreds of sprigs of white Heather for the Drury Lane Theatre management, each first-nighter at the representation of the new play, "White Heather," being with their programmes presented with a sprig. E. vulgaris carnea (pink) and E. v. Alporti (deep red), in full bloom, were also very beautiful. E. polifolia and alba erecta, also atro-purpureum, flowers deep magenta, were blooming profusely. The variety is, however, great, and gives beauty at this season of the year that cannot be over-estimated.

Flowering Shrubs.

A tall, pyramidal plant, having long shoots of pendulous form, laden with small magenta-coloured Pea-like flowers, and forming a very elegant object, was Desmodium pendulifolium. How pretty a shrub was this, thus blooming so profusely, so late in the autumn! Quite an allied shrub was Lespedeza bicolor, also of pendulous habit, having slightly paler flowers. The well-known Rose Acacia, Robinia hispida, though blooming late, was also very gay. It is a beautiful flowering shrub too seldom seen. Perhaps it suffers from the bad name Trec Acacias have with gardeners. What a singularly noble shrub was Clerodendron trichotomum, just then in full bloom! The specimen was about 12 feet in height and 15 feet through at the base. A huge round leafy head covered with small white flowers, and in great abundance, bract-like seed vessels of a reddish colour. Each pod later opens and reveals seeds of a deep purple hue. This is a robust growing shrub, and makes a most attractive object.

But the varieties of Hibiscus, of which there were several, attracted special notice. The three best then blooming profusely were H. albus, flowers quite white and large; Bleu Celeste, flowers of an unusually rich blue for such hardy shrubs, and most floriferous and singularly beautiful; H. single Painted Lady, flowers white, with deep maroon blotches at the base of each petal. It is not possible to conceive of any hardy shrub blooming so abundantly or effectively at this time of the year as this Painted Lady does. It is a shrub for universal planting. We may indeed prize, as we well do, the flowers that bloom in the spring; but shrubs that bloom in the autumn, as these do here mentioned, have a value as objects of beauty that cannot be over-estimated.

Roses in Pots.

These were legion, and stood in the open in large pots, or in smaller ones. Teas especially, in the cool houses; there seemed to be enough to satisfy all the kingdom's requirements. How beautiful in the beds were the many garden Roses, especially the Hybrid Chinas and Cluster Roses. In all directions were the plants carrying beautiful flowers. The young Teas in pots seem now to be in great request for spring planting, in preference to risking them outdoors through the winter, or, if preferable, potted, they bloom profusely under glass for a long season. When, as here, it is seen what Roses have developed into, ample evidence is furnished of the great need there is in horticulture for specialists, for it seems impossible for any one person to have a complete knowledge of everything.

Foliage Shrubs.

A very effective shrub was Cornus brachypoda variegata. This had very striking silvery leafage. The Golden Catalpa gave rich leafage and colouration from cut-back stocks, as, indeed, that is the way in gardens to bring out the great beauty of many foliage shrubs. Cornus atropurpureus treated in this way is very effective; so, too, is the Golden Elder. The purple Cornus edged with the golden dwarf Cornus Spathei makes a very effective mass. The Golden Hop tree, Ptelia trifoliata aurea, is very effective. Singularly pretty, as furnishing long shoots clothed with leaves of cream flushed red, was Acer palmatum tricolor. Such shoots would be invaluable for vase decoration. A most attractive Elder, Sambucus plumosus serratifolia aurea, had very large, handsome serrated leafage of a rich colour. Alnus imperialis, giving beautiful cut leafage, and Acer colchicum nigrum very attractive effects when shoots are cut back in the spring. However, there are many shrubs that thus treated prove exceedingly effective.

Foliage Vines.

Of these several attracted attention, but the most striking were two plants of Japanese varieties, Vitis Coignettiæ, having large roundish leaves, and V. flexuosa, having Mulberry-like foliage. These had made strong growths, reaching 18 feet in height, and later, when the foliage assumes a blood red hue, will be most brilliant objects. As these Vines had been planted about two years their capacity to furnish cover for walls or decaying trees was evidenced. Clematis odorata, sweet scented, flowers dark blue, having prominent centres of white anthers, was exceedingly pretty when in full bloom. Such a nursery as that of Coombe Wood, with all its wealth of new and rare trees and shrubs, presents to gardeners so much that is novel that a visit becomes almost entrancing.—A. Kingston.

THE POTATO CROP.

I hear many accounts of the Potato crop this season, more especially from the farmers, who say that the crop is not more than half the weight of last year, and already disease is beginning to make rapid inroads into some varieties. Speaking to one who grows some hundreds of tons to sell in the Liverpool markets, I was informed that coloured Potatoes by no means find a ready sale, and that he had almost ceased to grow them, the prejudice being that they were all considered of a washy nature. Asking how the round varieties went, I was also told that these were not nearly so much in demand, those preferable being the long kidney shape, as Maincrop and Magnum Bonum. This leads me on to give you a short note of Potatoes in our garden.

The early varieties were not an abundant crop, owing to the cutting winds and keen frosts in May, but the best certainly was Harbinger, one of the finest early rounds ready at the same time as the early kidneys. It is short in the top, a fine cropper, and boils like flour. Early Puritan was good in every respect. Her Majesty and Ne Plus Ultra, tried for the first time, are good. They were not in the best position, consequently I had not an opportunity of fully testing them, but their cooking qualities are all right, and they are free from disease. Up to Date is more after the style of Paterson's Victoria, a grand crop of clean tubers, and fully meriting the name given.

The finest of all in the garden has been the splendid new one named Reliance. If one must judge by the extra good results we have had from it we may expect it to be a beat on the good old Magnum, for a heavier crop I never saw. It possesses a sound constitution, is one of the best shaped kidneys for exhibition, having scarcely any eye, no trace of disease, and for table A1. No praise can over-estimate its good qualities. There seems to be a great deterioration in the useful Maincrop, the crop being poor on every hand, farm and garden alike, as far as I can learn, but I do not know if this is so in all parts of the country. Reading Russet and Flourball are two of the best coloured rounds that we have, the latter being a splendid keeper and a capital table variety.—R. P. R., *Liverpool.*

HINTS ON POTTING.

Of all the numerous operations which come within the range of the gardener's art, that of potting and shifting tender plants from one pot to another must be regarded as one of the most important. A volume could be written on it without exhausting its details or exaggerating its importance in its relation to the numerous varieties of plants and fruits now cultivated in pots. If in anything in gardening "practice combined with intelligence" be not necessary, certainly it is not in potting. By potting I do not merely mean the mechanical operation of surrounding the roots of a plant in a pot with soil. A mere machine might possibly be invented to do that.

Not only does every family and genus of plants need different treatment in this respect, but each species and variety requires to be studied, and the potting adjusted to its peculiarities of constitution and growth. The intelligent observation and sound reasoning of the cultivator must be carefully exercised in the performance of this important operation, or high cultivation need not be looked for as a rule. And very much as has the progress of horticulture depended on the observation or notice-taking of practical men, I question if from any other source improved practice in cultivation has resulted so much as it has from the observations and deductions of practitioners at the potting-bench. However the fact can be accounted for, it has come within my knowledge that men who could discourse eloquently on the science of horticulture, and profess to teach the sound principles of all its branches, make a most complete bungle of potting or shifting a plant, and succeed chiefly in violating every principle on which the health of their subjects depends. In very many instances the practitioner has had to navigate his way to success with next to no extraneous aid, and this forcibly applies to the potting of plants.

In most instances pots are a necessary evil. This being the case, it is of paramount importance to mitigate the evil as much as possible. By way of throwing out a few hints calculated to be useful to beginners at the potting-bench—among whom I would include our scientific friends who may try their amateur hands at this operation, by way of relaxation perhaps—I would remark that the first thing to be considered in potting a plant to be placed in a glass house is that in nearly every respect it is being placed under circumstances that are thoroughly artificial. The space for its roots is unnaturally restricted, and contains, comparatively speaking, but a few handfuls of soil, which, along with the roots, is exposed to the drying influence of air, not only on the surface, but at the bottom and sides of the ball as well. This exposes the plant to be constantly and rapidly robbed of the moisture necessary to its existence, and much of the food supplied to it within the compass of its pot. This unnatural loss has as constantly to be made good by large supplies of water artificially supplied to soil in the very artificial position of being in a pot. This state of things has a constant tendency to call into play a host of other evils which have to be carefully obviated in the choice of materials for, and in the operation of, potting. It being necessary to administer copious supplies of water almost daily, and sometimes oftener than once a day, the two most prominent and destructive conditions incident to such a necessity are those of stagnant water and the rapid decomposition of the organic substances in the potting material. To some extent these evils are dependent on each other, and are nearly always in existence at the same time.

Perhaps the draining or crocking of pots may at this era of horticulture be considered too common or too trifling a subject to dilate on with profit to readers. Good cultivators do not regard any point as trifling, and I am content to submit my verdict to the most successful growers when I say that the draining lies at the foundation of successful pot-plant culture, and that it is one which, if not properly performed and adjusted to the nature of individual plants, will thwart the most careful and correct attention to all the other points of culture. Not only so, but I am convinced that the carelessness and unbusinesslike way in which it is performed in many instances warrants that its importance should be made very prominent; and in a long and extensive practice I am now more convinced than ever that more ill-health and disease and death are caused by inefficient drainage of pots than by any other cause, or perhaps all causes put together.

It is not only not so much on the quantity of crocks put into a pot, as on their proper adjustment, that success in carrying off all superfluous water from the soil in a pot depends. A pot half full of crocks may not be so well drained as another may be with only an inch. In all well-ordered gardens where pot plants are grown there should be three or four different sizes of crocks, sizes that may be termed for ordinary purposes, inch, half inch, and quarter-inch crocks, which, in breaking up a mass of crocks, can be easily assorted by using sieves of different sizes. These must be as clean as the pots themselves, and all dust should be separated from them. Speaking generally the largest of them should form three-fourths of the drainage of large pots, and the other fourth, consisting of the second size, should be blended with the smaller, and over all a little dry moss, or a portion of the most fibry of the soil, should be placed. In a moist stove where plants have to be heavily syringed, or in the case of delicate hardwooded plants, a 14 or 16-inch pot should never have less than 3 or 4 inches of drainage thus arranged; while in the case of special and shallow-rooting plants it should be double this amount, or even more, just as the tendency of the plant is found to be surface-rooting. An 11-inch or an 8-inch pot will be sufficiently drained with a lesser depth of crocks in proportion to its size; 2 inches and 1½ being generally sufficient, but always arranged with the same scrupulous care. This rule applies with augmented force to all plants that are plunged, such as Pines, and to plants of delicate constitution, whether they be soft or hardwooded. The concave side of the crock or piece of broken pot should be placed undermost in placing it over the holes in the bottom of the pots, for, if placed the other way, it often fits too closely to the pots to admit of the ready passage of the superfluous water. Thus arranged, the soil used in potting does not get down amongst the crocks and prevent their serving their intended end.

If anyone wants to prove—who has not done so already—that this is a trifling part of plant culture, let him take two Heaths, Azaleas, Camellias, or even a Pine plant, or a Pelargonium, and drain the pot for one of them as above described, and the pot for its fellow by carelessly—a by no means uncommon practice—putting into the bottom of the pot a few large and ungainly pieces of dirty pot or brick, and subject the plants to the same treatment otherwise, and they will be witness to results so diverse that the matter will soon come to be regarded as of paramount importance, and they will not consider that I have insisted on the strict observance of a trifling point of culture. I might almost say that what the foundation is to the structure, the proper draining is to the successful growth of plants in pots.

Only the other day I was engaged in shifting some Azaleas which had their pots properly drained two years since, and on turning them out of their pots the crocks fell from the bottom of their balls as clean as the day they were put in. The roots of these plants were in the most perfect health, ready for increased feeding ground. In the case of others, which had a few large pieces of crocks pitched carelessly into their pots, the passage for water was next to entirely filled up by the soil working down among the crocks to the bottom of the pots. The consequence was that half the ball stuck in the pot, and it was a soured mass of peat, in which the roots had perished, if ever they had entered it at all. Such crocking in conjunction with old unwashed pots is in time certain death to plants, if the evil is not put right.—T. D.

GARDENERS' CHARITABLE AND PROVIDENT INSTITUTIONS.

The Gardeners' Royal Benevolent Institution.—*Secretary*, Mr. G. J. Ingram, 50, Parliament Street, London, W.C.

United Horticultural Benefit and Provident Society.—*Secretary*, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

Royal Gardeners' Orphan Fund.—*Secretary*, Mr. A. F. Barron, The Royal Gardeners' Orphan Fund, Chiswick, W.

THE YOUNG GARDENERS' DOMAIN.

Apple Cellini.

In a year like the present one, when Apples, generally speaking, are no more than half a crop, it is well to notice those varieties that are constant croppers, of which the above is certainly one of the best I know. It is a conical shaped fruit, of very handsome appearance, and from medium to large in size, coming into use in September and keeping till the end of November. It cooks well, and is sometimes used for dessert, but it is rather acid, and there are generally plenty of good dessert Apples at that time. Cellini appears to do equally well as bush or pyramid. The tree is a small grower, consequently it does not require much room; planting distance would be about 12 feet. Although many varieties in the same gardens have scarcely any fruit on them this season, the one in question requires support, owing to the weight of its crop.—J. L. G.

Spring Bedding.

When the summer plants and autumn rubbish are cleared off a layer of well decayed manure about 2 inches thick is applied to the beds and dug in rather deeply. Treading is then given and the beds smoothed over with a rake. If the grass be wet when planting commences a few pieces of sackcloth or anything available laid down prevents it being made unsightly. For spring bedding we use Wallflowers, Violas, double Daisies, Myosotis, and various kinds of bulbs.

Wallflowers are topped when 5 or 6 inches high to make them dwarf and bushy; they then stand the winter better than tall, lanky plants. If there is any bracken or long straw available a little placed between and around them protects them from the cold cutting winds which often do much injury in winter; also a slight sprinkling on the Hyacinths and Tulips is well worth the trouble involved. Hyacinths are planted about 6 inches apart and 3 inches below the surface, with a little sand around them. The same applies to Tulips. For a succession of bloom of the last named, alternate planting of single and double varieties is advisable. The beauty of the beds is enhanced by planting tender growths of Myosotis, Silene, or a carpeting of Anemone apennina. A bed planted with Scilla sibirica, with an edging of white Daisies, has a charming effect.—Improver.

[Our correspondent may, perhaps, like to know there is room for him to improve in three directions:—1, In composition and writing; 2, in leaving twice the space between the lines of his MS.; and 3, in sending his letters to the address given at the head of the leading article and of the correspondents' column each week.]

Culture of the Grape Vine.

(*Continued from page* 252.)

Compost.—No hard and fast rule can well be laid down for this. On reference being made to any standard work on fruit culture we can obtain guidance, but we cannot take all from a book; our brains and powers of observation must be used to the fullest. Local composition of the soil has much to do with the construction of Vine borders. In some places grand Grapes can be produced from almost the natural soil, which seems to contain the ingredients that are necessary for the sustenance of the Vine. Happy is the gardener in this case.

Take another example. The soil may be bad, almost unfit for Vine culture, yet the owner of the land and vinery will not go to the expense of procuring any other. What troubles and anxieties the gardener has to contend with then. Do as he will, his Grapes are barely presentable. Every detail in the cultivation of the Vine may be carried out to the letter, and yet there is always something lacking. In this case Vine culture is one continual source of worry to the gardener.

I have seen fine Grapes produced from good calcareous (containing lime) turfy loam, the top 4 or 5 inches of an old pasture, the loam being roughly broken up, and old mortar rubble, wood ashes, and soot well mixed with it, according to the discretion of the cultivator, no strict proportions being adhered to. The compost was prepared some time before being required for use, and protected from the action of the weather.

Making Vine Borders.—It is generally advised to let the inside border fill with roots before making the one outside, openings in the wall of the house being bricked up for the time being. Opinions differ on the subject, but I am an advocate for, say, 1½ yard of border for the first year inside, and the same outside the house, adding 1½ yard each succeeding year until the whole space is filled. By this means the Vines are kept in a healthy condition, as the roots are ever ready to take freely to the new compost.

In making the border, cover the drainage with reversed turves; these will keep it clear for a long time. Place the compost on the turves, making it firm as the work proceeds. Let the outside edges slope somewhat, in order that, when a fresh amount of compost is required, the edges can be lightly pricked up with a small fork, the added compost binding more freely by this means.

Planting.—Some gardeners advise planting the young Vines when in a growing state, these being taken into the house a few days in advance to inure them to the temperature. Other Grape growers allow the Vines to complete their growth for the season, and rest in the pots before planting. It is with the former method I intend dealing. Excavations should be made of ample depth and width for the reception of the balls of soil turned out of the pots, and the roots ought to be carefully disentangled in order that they may take freely to the compost in which they are placed. In planting it is well to lay out as many as possible in layers, with soil between them, taking care not to break any of the roots. The soil must be finely broken up and worked amongst them with the fingers. Plant firmly, and not too deeply, and settle the soil about the roots by affording a good watering.

Keep the Vine straight by means of a stick fastened to the wires, the cane being tied to it. A straight stem will then be produced, which looks better than a crooked one. Allow a sufficient distance in planting, so that when the stem is developed it will not come in contact with the hot-water pipes. It will be found necessary to resort to the syringe and shading for some short time after planting the Vines, to prevent flagging. As regards distance, for permanent Vines, from 4 to 5 feet asunder is advisable.—Semper.

Anthuriums.

This large genus of stove and greenhouse plants is remarkable for the peculiar inflorescence and often noble leaves. Fibry peat, loam, sphagnum, broken crocks, or charcoal, and silver sand, form the most suitable compost.

In preparing the peat, it should be broken up into small lumps, and then have most of the earthy matter knocked out of it by giving it a few raps with a stick, or by shaking it about in a sieve. To this, after so treated, add about one-fourth its bulk of sphagnum and about half its bulk of fibrous loam, and just a sprinkling of fresh broken crocks, or small pieces of charcoal and sharp silver sand. In placing them in the pots, which must be well drained, carefully spread out the roots and work the mixture among them, keeping the plants well up, so that when finished they stand clear above the rim of the pot at least 2 inches or 3 inches, and form a kind of mound or hillock. They must then be kept freely syringed or watered, and placed in a moist atmosphere, where they can enjoy a temperature ranging between 60° and 70°, or a few degrees lower for the less tender species.

Raising plants from seed requires patience. About a year elapses from the time the flowers are fertilised, which should be done artificially before the seed ripens, and often another to get up plants. Sow as soon as ripe in shallow, well-drained pans or pots, filled with the potting mixture, and cover slightly, in a close, moist, propagating case, where a temperature of from 75° to 85° is maintained, or they may be covered with bell-glasses. The principal thing is to keep the air about them constantly humid, and the material in which they are sown in a uniformly moist condition; if this is done, the young seedlings will make their appearance in due course. When these are of sufficient size to handle, they should be pricked off in the same sort of compost, and be kept close and moist till they get a start, after which, gradually inure them to more air. January is the best month of the year wherein to propagate these plants by division. This is done by carefully turning them out of their pots and shaking out what soil they have amongst their roots, which must be tenderly dealt with, so as not to bruise or injure them. This done, they may then be pulled apart, and must have a copious supply of water at all times, although, of course, much less during the winter than spring and summer months. There is no season of the year when they can be handled for any purpose with less risk or check than January. A moderate moist stove heat is advisable for them generally.—W. M., *Wexham Park.*

HARDY FRUIT GARDEN.

Wall Trees.—*Shortening Secondary Shoots.*—Apples, Pears, and Plums trained on walls, and which had their foreright growths shortened earlier than others, will most probably have formed fresh young shoots from the upper buds of the restricted growths. These ought, therefore, to be pruned back to the first leaf, when that has attained a fair size.

Finally Stopping Growths.—New extension wood or shoots produced after this period are of little practical use, and when such growths indicate a decided tendency to continue growth, especially Peaches, Nectarines, and Apricots, the shoots may be stopped by cutting off the points. The effect of this will be to assist the ripening process of the current year's shoots, and cause the sap to concentrate itself in the buds of the lower and more mature portion of such growths, gradually forming them into fruit buds, interspersed with wood buds.

Removing Superfluous Shoots.—When the fruit has been gathered, Peach, Nectarine, and Apricot trees should receive careful examination, so as to dispense with all shoots that have borne fruit. Cut them out close to the origin of reserved shoots destined for the future bearing. This treatment relieves the trees considerably, and directs the energy towards the young wood. An additional benefit derived, which is of importance, is the more thorough exposure of shoots to light and air, insuring a well-ripened condition.

Securing Growths.—In preference to allowing shoots to lay about in various directions, temporarily lay them in towards the wall or trellis in the direction intended for final training. They will thus receive the advantages of warmth of wall.

Cleansing.—During the time the leaves remain green, assimilation of food from the roots, and that taken in from the air, goes on. This, of course, is beneficial; but if red spider infest the trees, the work the leaves perform is obstructed. Hence it is desirable to give the trees a dressing of insecticide immediately the fruit has been gathered, and occasionally syringe the foliage afterwards, until the leaves change colour,

Gathering Fruit.—Carefully continue the gathering of Apples and Pears, also Plums and late Peaches.

Apples.—All the earliest varieties of Apples ought now to be off the trees. Varieties which may now be gathered include Lord Suffield, Cellini, Domino, Potts' Seedling, Jolly Beggar, Cherry Apple or Siberian Crab, Yellow Ingestrie, Worcester Pearmain, and Wellington.

Pears.—Of Pears, gather Williams' Bon Chrêtien, which is rather late this season, and the crop poor; Madame Treyve, Brockworth Park, Hessle, Autumn Nelis, Flemish Beauty, Fertility, Autumn Bergamot, and Crassane.

Plums.—The following varieties are now ripe or approaching maturity—Jefferson, Pond's Seedling, Washington, Autumn Compôte, Coe's Golden Drop. Gather the choicest fruits by the stalk. Ripe or ripening fruits left on the trees should be well protected.

Applying Liquid Manure to Fruit Trees.—The autumn months are very suitable for rendering assistance to fruit trees which require additional nourishment at the roots. Such applications will largely benefit weakly trees. They will also improve the soil where a succession of crops has impoverished it.

State of the Soil.—Liquid manure can in numerous instances be applied freely at this season, inasmuch as the soil in open quarters has become suitably moist from frequent rains. In all positions, however, this may not be the case. Wall trees are frequently an exception. The soil near walls may have become so dry from long-continued drought and the extra demands of trees that much rain is necessary to moisten it.

Moist Soil Essential.—The soil must be made comparatively moist before stimulating and sustaining liquid manure can be applied with benefit. Therefore, when the soil is very dry, give copious soakings of clear water prior to the manure.

Suitable Liquid.—The drainings from farmyard manure are the most generally useful, for they contain most, if not all, the essential constituents of plant food. Household slops diluted with soapsuds may be employed. The contents of cesspools are most valuable for fruit trees when diluted down to a safe strength with clear water. Stable or cowshed drainings, either alone or in mixture, form useful nourishment, none of which ought ever to be wasted where well established or old fruit trees exist. The soluble ingredients of the latter will then be better retained by the soil and readily available for absorption by the roots.

Method of Application.—As the roots of trees extend as far as the branches, any applications intended to reach the root must cover the area of ground to that distance. Where roots are not very near the surface loosen the soil with a fork, so that the water or liquid manure may be more readily admitted. A few deep holes made with a crowbar is an excellent way of quickly moistening the lower strata. This is not a plan to be generally recommended for trees having the bulk of their roots near the surface, such as Apples on Paradise, and Pears on Quince stocks. Apples on Crab stocks and Pears on Pear stocks have roots which penetrate deeper in the soil, and there would be less danger of damaging the fibres.

FRUIT FORCING.

Melons.—*In Houses.*—As the days are shortening, the nights being relatively cold, even white frost occurring in the morning, and the moisture increases, it is necessary to exercise care and judgment in watering, never doing it unnecessarily; but the latest plants with the fruit swelling must not be allowed to become so dry at the roots as to prejudice the foliage. Maintain moderate moisture by damping the floors, walls, and sides of the bed every morning and at closing time, earthing-up the roots as required; but late plants require less soil to grow in than the mid-season plants. Remove all superfluous growths as they appear, and maintain a temperature of 65° to 70° at night, 5° less on cold nights, 70° to 75° by day, up to 85° or 90° with sun. Keep the bottom heat at about 80°. Fruit ripening will be better for a little extra fire heat and a circulation of air constantly. A dry condition at the roots, but not so as to cause the foliage to flag, accelerates the ripening process and enhances the quality of the fruit.

In Pits and Frames.—In those heated solely by fermenting materials no water will be required after this time unless the soil is dry and the foliage becomes limp, which it must not be allowed to do. Any water supplied should be so as not to wet the foliage or even the surface of the bed more than can be helped. Keep the frames well lined, admitting a little air constantly, which, with the fruit raised well above the surface of the bed, will do much to accelerate the ripening, prevent decay, and impart flavour. Any fruit it is wished to keep for a time should be cut when changing with a good portion of stem, and be kept in a dry, airy room; or if wanted ripe at once it may be placed in a warm, airy house on a shelf in the full sun. Melons ripen better there than in frames or pits devoid of fire heat.

Peaches and Nectarines.—*Early Forced Trees.*—We would again urge the necessity of attention to these trees as soon as the leaves are all down, following the instructions given on September 9th (page 252), as the procedure strikes at the root of pests passing over from year to year, especially red spider and scale, and gives the trees the advantage of thorough rest, with opportunity of pushing fresh roots, thus being well prepared for a start when the proper time arrives.

Early Forced Trees in Pots.—Where new trees have to be bought, the earliest placed orders generally secure the best trees, and they can have their requirements attended to in respect of top-dressing without delay. This is very important, as those disturbed late at the roots do not carry the buds well, nor is the start and setting of the fruit nearly so satisfactory as when this has been anticipated by timely attention to secure it in the late summer.

Second Early Forced Trees.—These, often the first in many places, they being started at the new year, will have shed their leaves, or be in that condition shortly, and should be attended to in pruning, cleansing the house, dressing the trees, and top-dressing the border according to instructions already referred to, as this gives them better advantages than putting off everything until the last moment, when neither house nor trees can be properly cleansed, and much after trouble in respect of pests is the consequence.

Trees Ripening the Fruit in July.—The trees will now be approaching the resting period, and the foliage becoming sere. Supply them with water so as to keep the soil moistened through to the drainage, but if the roof-lights have been removed, the trees being in a condition to allow of its being done in August or early in this month, they can remain off until the time of starting arrives, and the soil will get well moistened by the autumnal rains, and frost and snow have an invigorating effect on the trees, as well as having a good result on the enemies that beset them. If the wood is not ripe it is not wise to expose the trees to heavy rains and snow.

Assuming the wood is firm and the buds plumped, it is advisable to remove the roof-lights, with a view to insure complete rest and the thorough moistening of the border. When the trees are very strong it is not desirable to withdraw the top-lights, and if the growth is complete (barring a few sappy laterals) and the wood not ripening kindly, form a trench about one-third the height of the trees from the stem, and detach all roots down to the drainage, leaving the trench open for ten days to a fortnight, when it may be filled firmly. Young trees only require this, but older trees that have the wood very strong may be root-pruned, and the roots wholly or partially lifted before the leaves have fallen. This requires to be done carefully, as very vigorous trees have roots corresponding to the branches—long, strong, and few; hence a severe check must follow severe root-pruning, and the after-growth be more or less prejudiced, if, indeed, the trees are not seriously imperilled in life and limb. Judgment in such cases must be exercised, it being good policy to cut only a few strong roots in one year, and then follow on with the others another, so that, having got the roots comparatively near the stem and plenty of fibres, complete lifting can be carried out without any danger, but much benefit as regards health and cropping. Some trees have straight down roots, which must be got at and severed before there can be any improvement in the trees' growth and bearing.

In the case of weakly trees remove the old soil from over and amongst the roots, supplying fresh strong loam, with an addition of calcareous matter where the loam is not of that nature, making it firm, and following with a good soaking, the drainage being good, of liquid manure, afterwards top-dressing with some approved fertiliser. The manurial matter will get more or less diffused through the surface soil during the winter, and possibly adventitious roots be pushed into it before starting, as we have sometimes noticed, and certainly when the trees move. Cut out weak wood and branches.

Trees Ripening the Fruit in August and Early September.—The wood that has borne fruit and not required for extension must be cut out, leaving no more than can be freely exposed to light and air. Cleanse the foliage of dust and red spider by water directed with force from a syringe or garden engine, and repeat occasionally. If there is scale syringe with water at a temperature of 140° to 160°, and for red spider and brown aphis, the latter of which sometimes attacks the younger parts of the wood in autumn, promptly apply an insecticide, the aphis being best destroyed with diluted tobacco juice. There must not be any lack of moisture at the roots, therefore apply water to the inside border as necessary, to prevent their becoming too dry. Afford abundant ventilation, and if the wood is not ripening well keep the house rather warm by day and throw the ventilators open at night; but a warm, close, moist atmosphere must be avoided, as that would be more injurious than otherwise. In other respects the house cannot be too freely ventilated.

Late Trees.—When the fruit from the earlier ripening varieties has been gathered the trees will need to have the shoots thinned where too crowded, and those which have borne fruit and not required for extension can be cut out to a successional shoot at the base. This, with free ventilation and gentle fire heat in dull weather in cold localities, and the wood strong, will assist in ripening the growth, which is of primary importance as regards next year's crop. It is also important to keep them free from insects, hence syringing forcibly, or using an insecticide after the fruit has been cleared off individual trees, must be attended to, always without wetting trees with fruit ripening. Avoid a too dry condition of the border, and expose the fruit of very late varieties to the sun and light as much as possible. The trees must not lack moisture, and yet a rather drier condition at the roots is advisable whilst the fruit is ripening. Mealiness often arises from insufficient supplies of water during the swelling period rather than from dryness during the ripening process, but at no time is dryness to the extent of affecting the foliage desirable. Some soft netting will be useful to save any fallen fruits, but it must be looped up in small pockets to prevent the fruit bruising each other. With an examination of the fruit every morning by an experienced person, the ripe fruit being removed, there is little occasion for the netting, especially with the very late varieties. The fruit is better gathered before it is dead ripe, and kept in a light airy fruit room until thoroughly matured.

The late Peaches are very noble in appearance, and of excellent quality when well done. Prince of Wales, very little seen, is a magnificent fruit when grown under glass and in warm soils, but it is not satisfactory against walls and in heavy soils. Gladstone, a similar fruit, does splendidly in a late house, it being very large and of first rate quality when well fed during growth. For looks Princess of Wales is, perhaps, the grandest of all late summer Peaches, attaining a large size and assuming fine colour under favouring circumstances, and Late Admirable also, has both size and quality to recommend it, also

Walburton Admirable. Sea Eagle sometimes colours grandly, and even when pale has a very pleasing appearance, its size and good qualities rendering it very desirable. Golden Eagle has both size, golden colour, and good quality to recommend it, while Comet proves very acceptable early in October.

PLANT HOUSES.

Allamandas.—The growth of plants that have been used in the conservatory has nearly ceased. If these are removed at once where the night temperature ranges to 60° they will soon start into growth again, and continue to yield flowers until Christmas. Fully expose them to the sun, and supply stimulants liberally if the pots are full of roots. Plants that flowered early may be induced to rest by placing them in a temperature of 55°, where water can be gradually withheld. Do not ripen them prematurely, or the wood will eventually shrivel instead of remaining firm and plump. Two months' rest is ample for these plants, and if rested now they may be pruned and started again early in December.

Clerodendron fallax.—Select two or three of the earliest plants and allow them to flower where the atmosphere is moderately dry and a circulation of air can be provided daily, seed will then be produced freely. When well grown this Clerodendron is very ornamental in the stove or intermediate structures during the next two months. Insert plenty of cuttings of C. fragrans, they will be useful for flowering in small pots early in the year. The cuttings should be inserted singly in thumb pots, and when well rooted place them into 3-inch pots. They flower freely when confined at their roots. If given liberal root room they grow too luxuriantly and fail to flower satisfactorily.

Ixoras.—Select a number of growing shoots that are moderately soft, and insert them in sandy soil in 2-inch pots. These will be useful for decorative purposes in spring, and carry one fine truss each. Young plants that are well rooted and growing freely may be placed into 4-inch pots. Press the soil firmly, and grow the plants on a shelf close to the glass in a warm moist atmosphere. They will make greater progress if gentle bottom heat can be provided for a time. Fully expose them to the sun. Large plants that have become woody through being confined at their roots are flowering freely the second time, and others will not be long before they yield a supply of trusses for cutting. Young plants growing into specimens should have the points of any shoots removed that are taking the lead. Keep the plants free from mealy bug by examining them frequently, and syringe at once with a solution of tobacco water, or fumigate the plants with tobacco smoke if thrips become established upon them.

Aralias.—Plants of A. Veitchi, A. Veitchi gracillima, A. leptophylla, and others that are large enough for table decoration may be placed in a temperature of 50° to 55°. They will remain in good condition, and growth will be very slow. In brisk heat they run up quickly, and soon become useless. Plants that have been raised from portions of stem and are growing freely may be placed into 4-inch pots, and grown in brisk heat. These do well in loam, sand, and one-seventh of manure. Where there is a plentiful supply of fine peat a little may be mixed with the loam.

Crotons.—Plants that are highly coloured and large enough for table and other forms of decoration should be prevented making further growth. Fully expose them to the sun, and place them where the night temperature can be kept at 55°. Admit air daily, and gradually increase it. This prepares the plants for room decoration better than when removed from a warm moist atmosphere. Plants that are fully exposed to the sun, highly coloured, and their pots full of roots, are liable to be attacked by red spider. Be careful the soil does not become dry at the roots of the plants, and syringe them liberally. The plants are greatly benefited by being syringed once or twice weekly with soot water perfectly clear. Assist plants in a backward condition by keeping the house warm and close, closing the ventilators early, so as to run up the temperature considerably in the afternoon. Insert in small pots all highly coloured side shoots that have been produced by plants from which the tops were removed some time ago.

Pancratiums.—The earliest of these are growing freely, and as they cease flowering must be kept close, moist, and shaded from the sun, with abundance of water and occasional stimulants. Any plants that need larger pots may be attended to at once in a compost of loam, sand, and one-seventh of decayed manure, a little charcoal may be added. It is not advisable to break up the plants in their present stage of growth. The check would be too serious, and prevent the plants making good growth afterwards. Plants that need division should be left as they are until February, or just preceding growth.

Vincas.—Pinch the shoots of plants in 5-inch pots for the last time; they will be useful in the stove during the dreary months of winter. The shoots are also useful for cutting; in warm rooms they will continue to develop their flowers for a long time after they have been severed from the plant. Cuttings may be inserted in small pots for early spring flowering. Large plants that have ceased flowering may be placed in a moderately dry atmosphere where the temperature ranges about 55°, and gradually withhold water.

Dracæna gracilis.—This is probably the most useful of all Dracænas for room decoration. It will stand in almost any position for a long time. Large plants may be removed to the greenhouse. In this position avoid cold draughts striking upon the plants. Those that have grown too large may have their heads removed and rooted in 4-inch pots. Those raised from heads are very useful for single vases, while those from the stem are the most serviceable for table decoration. They are lighter through the foliage being only about half the width of those that have grown strongly.

THE BEE-KEEPER.

Utilisation of Spare Bees.

In apiaries where straw skeps largely predominate I fear it is still the fashion (for one cannot call it by any other name) to destroy the bees when taking the honey in the autumn. Why this should be the case it is difficult to say, as in most districts there are always bee-keepers who are ready to lend a helping hand to their less fortunate brethren in the craft. Still the fact must be recognised that the sulphur pit is not a thing of the past, but that many stocks of bees are annually destroyed throughout the country, which if their lives had been spared by taking a little trouble in the simple process of driving, they would have been of great assistance in strengthening weak colonies of bees in the same apiary.

The above remarks have been called forth after visiting an apiary which six weeks ago consisted of twenty-three stocks, all with the exception of one being in straw skeps. All that remained at the time of my visit were ten skeps and one frame hive; a dozen stocks had been suffocated; the dead bees still remained in heaps where they had been shaken from the hives. On my remonstrating with the bee-keeper on the cruelty and the loss he had sustained by destroying the bees, he remarked, "But of what use were the bees to me? As I have now as many stocks as I require, and I do not want more bees, I thought the easiest way to get rid of them so as to obtain the honey was to place them over the sulphur pit."

On inquiry I found he had been much troubled with swarms, and it was chiefly the first swarms that had been taken. He allowed me to examine several of his old stocks, which, owing to the swarming mania, were short of bees and also of stores. Had the bees been driven, and added to the colonies that were kept for stock, they would have strengthened them very considerably. I showed him how this could be done, and have no doubt in the future the lives of the condemned bees will be saved.

Uniting Driven Bees to Straw Skeps.

As there are doubtless many bee-keepers throughout the country situated similar to the above, a few words on this subject may be of benefit to them. It is useless attempting to unite driven bees with those already existing in straw skeps by simply shaking them into the hive and sprinkling them with flour or thin syrup; it would mean instant death; but by making both colonies of bees homeless for the time being they will unite without the loss of a single bee. First drive the bees from the condemned stock into an empty skep. If the queen is aged catch her as she runs up, and destroy her. If the operator is not an adept at finding the queen it does not matter, as the bees will soon settle the dispute between themselves. As soon as the majority of the bees have run up into the empty skep remove it, and repeat the same operation with the stock hive intended to be kept.

When a large proportion of them have joined the other driven bees remove the skep, and shake the bees well up together, at the same time sprinkling them with flour from a dredger; also sprinkle any bees that remain on the combs of the hive intended to be kept. Place the latter on its original stand, prop up the entrance 2 or 3 inches, so that the bees may have ready access, shake the two stocks of driven bees down in front of the hive, a puff or two of smoke will cause them to hasten into the hive, and in a few minutes the bees will have clustered between the combs a united and happy family. No fighting will take place, and if properly carried out the lives of all the bees will be saved. Proceed with the others on the same line, and the bee-keeper will have the consolation of knowing he has saved the lives of his bees.

In practice it takes up much less time than many imagine. If by chance the hive to which it is intended to introduce the driven bees is somewhat crowded, it will be advisable to place an eke under it for a few weeks, as the bees will soon cluster in a smaller compass as the weather becomes cooler. An eke may be made by cutting off 3 or 4 inches from the bottom of an old skep, or something similar.

Feeding Driven Bees in Skeps.

It will be apparent to all that it is useless preserving the lives of the bees unless an extra supply of food is provided for them. In straw skeps it is not so readily done as in frame hives, as has been shown in previous notes. When a rapid feeder is used a strong colony may be supplied with 28 lbs. of thick syrup in forty-eight hours or less. If a straw skep is flat-topped, in which form they should always be made, it is much easier to feed them from the top than when they are made otherwise, and is safer than to feed from the bottom, as the latter encourages robbing, which it is advisable to avoid as much as possible.

It is necessary to avoid an escape of heat from the hive, and for this reason, if no other, a bottle feeder answers the purpose admirably.

Obtain a large-mouthed bottle, holding about a quart of syrup, over the mouth tie a piece of muslin, or something of open texture, fasten it tightly round the neck with a piece of string. The hole at the top of the skep must first be covered with a piece of perforated zinc, on the top of which the inverted bottle must be placed, and the whole covered up warm. It is an advantage if the syrup is given warm at this season. Refill the feeder as often as is necessary, and the chances are that stocks of bees treated in the above manner will come out strong and healthy, and will throw off early swarms the following spring.—An English Bee-keeper.

TO CORRESPONDENTS

*** All correspondence relating to editorial matters should, until further notice, be directed to "The Editor," **8, Rose Hill Road, Wandsworth, London, S.W.**, and **NOT** to Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Carnations Diseased (*C. A.*).—The "grass' is infested by a mild form of rust fungus (Uromyces caryophillinus). The parasite readily yields to dilute Bordeaux mixture, mentioned in reply to "R. S.," or dusting with the advertised fungicides in powder, such as anti-blight, fostite, and other similar preparations; but some growers prefer permanganate of potash, 1 oz. to a gallon of water, spraying on the foliage lightly, just coating them with a thin film of the solution. If those preventives had been applied much sooner, the plants would not be in the condition they are now.

Removing "Yew" Tree (*J. W., York*).—If the spray sent was from the tree it is an Elm, the Winged or Wahoo (Ulmus alata), a very desirable North American species. By cutting off the head at 1½ yard from the ground, you will to some extent check the growth of the roots, and prevent the further lifting of the asphalte pavement, but it will not kill them, and though not such a keen suckering species as the English Elm, it would probably throw up suckers, also push growths from the part of bole left. We should clear the tree away bodily as soon as the leaves have fallen, say in November, and then bore holes with an augur in the direction of each root of the tree from the cut-off part, filling each with a saturated solution of saltpetre, or fill with the article and pour in sufficient water to cover the nitre, then plug the hole tightly with a wood plug, and you may not be troubled with suckers, at least we found the plan answer almost as well as arsenic, this being a very dangerous substance to use and the other quite safe.

Diseased Chrysanthemum Leaves (*C. S.*).—The magnificent, large, thick, leathery, deep green leaves (barring brown spots) are seriously infested by the rust fungus (Trichobasis Artimisæ), the pustules being much larger than commonly found on Chrysanthemums. This shows the fungus not to attack the plants because unhealthy and poverty stricken, for the leaves afford evidence of high-class culture. Quite a cloud of dust fell on the microscopic slide, thousands of spores on the square inch of surface. Every one will grow if it has a chance in presence of such abundance of food as your plants afford. The point is to prevent the spores germinating. This ought to have been done at least a month ago by dusting the plants on the under side of the leaves with a 10 per cent. sulphate of copper preparation in powder, such as anti-blight or fostite, using a bellows apparatus, and blowing upwards. Now lay the plants on their sides, and spray or syringe with a solution of sulphide of potassium, 1 oz. to 3 gallons of water, doing it outside, as the sulphide smells nastily and discolours paint. Do it well; let the leaves get nearly dry, then syringe with clear water if you like, but that is not necessary for anything but appearance. There are numbers of pustules not broken through the epidermis; these will not be killed by the sulphide solution, therefore repeat in the course of a few days. If more readily obtainable use permanganate of potassium, 1 oz. to a gallon of water, spraying on the under side of the leaves. This sinks into the pustules. It is only necessary to coat the under side of the leaves with the finest possible film. Do something, and at once, for never was seen a finer harvest of spores, and that means a corresponding broad-casting of seed for another crop.

Burning Sulphur in Vinery (*Waltham*).—We do not burn sulphur in houses of any kind devoted to the cultivation of useful plants. After pruning the Vines and removing the rough bark, we wash the rods carefully with a brush, using a solution of sulphate of iron, 1 lb. to 1½ gallon of water. It acts against both fungi and insects, especially mites (red spider); or 4 ozs. caustic soda (97 per cent.), and 4 ozs. commercial potash (pearlash), dissolved in 3 gallons of water, applying when the Vines are dormant. This will kill the very fine-coloured hybernating mites, commonly called "eggs" of red spider, and these got rid of there will be none to continue the breeding the following year, unless, of course, they come from elsewhere.

Young Vines Killed by Eelworm (*Cross*).—The four young Vines, at least the one you have sent us, have been attacked by eelworm, as you suspected, hence asked, "Would eelworm enter the Vine roots?" The answer is No; the species only attacks the plants on the root stems just above the roots, thus making sure of a plentiful supply of nourishment for itself and offspring. It is the root-stem eelworm (Tylenchus obtusus), and the most prevalent form attacking Cucumbers in this country. In answer to your other question, "Is there any disease in stem or roots?" The stem has its bark entirely destroyed all round just within the soil. The roots are perfectly healthy, a mass of fibres, such as any grower would be pleased to see, and the cane itself stout, short jointed, hard in wood, and small in pith. The eelworm was probably introduced in the "rank" top 6 inches of old Cucumber soil. We should give at once a dressing of best chalk lime, freshly burned, 1¼ cwt. per rod, slaking with the smallest amount of water necessary to cause the lumps to fall to a fine, apparently dry, powder, spreading evenly, and pointing in the soil as far as can be done without injury to the roots, and not deeper than 6 inches, taking small spits so as to incorporate well. Watering the Vines with soluble phenyle, 1 part in 96 parts of water, will do no harm, and may do good, using it on the affected stems. If you like to earth up the other three so-called "dead" Vines you will get roots from above the girdled parts, and also test the potency of the preparation mentioned for killing eelworm. We may, perhaps, give an illustration of the case.

Diseased Pears (*R. S.*).—The Pears are attacked by brown rot fungus (Monilia fructigena), now in the mycelial hyphæ stage, which you may easily see on cutting a fruit in halves. The brown irregular marking corresponds to the cells or parts destroyed by the parasite, and the fungal threads are readily distinguished by a lens enlarging 250 diameters, as pushing their way in the intercellular spaces of the living cells of the fruit. Later on the fruit ordinarily becomes covered with a white mould in beautiful rings. This is the conidial condition or Monilia fructigena form; but the affected fruit sometimes only remains brown, even drying and shrivelling, yet small black bodies form in the fruit, and these carry the disease over from year to year. The common form of continuance is, however, by perennial mycelia in the wood of the tree affected, commonly referred to as "canker" on young shoots. We mention this, for if there are any such on your tree they must be cut out to sound wood, dressing the cuts with gas tar, but not allowing this on the young wood. Then root-prune the tree as soon as the leaves commence falling, operating carefully, so as not to cause a very severe check, on one side of the tree if roots are strong this autumn, following with the other side the next. This, and supplying fresh compost, with the burning of affected fruits, we have found effectual from a cultural point of view, supplemented by spraying with a dilute Bordeaux mixture, 1 lb. of copper sulphate and 1 lb. of lime to 12½ gallons of water (1) just before the blossoms open; (2) as soon as the fruit is well formed; (3) a fortnight afterwards; (4) again in another fortnight. This prevents the fungus spores taking possession, and thus, paradoxically speaking, goes to the root of the evil at the top of the tree.

Fruit Trees for Walls (*W. B.*).—*Apricots:* Frogmore Early (small), Alberge de Montgamet (small, chiefly used for preserving), New Large Early (large), Hemskerk (large), Kaisha (medium), Peach, Moorpark, St. Ambroise, Powell's Late (the last four large and excellent). *Cherries:* Early Rivers, Belle d'Orleans, Governor Wood, Bigarreau de Schreken, Downton, Black Tartarian, May Duke, Black Eagle, Werder's Early Black Bigarreau, Elton, Bigarreau Napoleon, Reine Hortense, Florence, and Tradescant's Heart. *Figs:* St. John's, Telfer, Brunswick, Brown Turkey, and White Marseilles. *Nectarines:* Early Rivers, Lord Napier, Darwin, Stanwick Elruge, Violet Hâtive, Hardwick's Seedling, Humboldt, Dryden, Pineapple, and Victoria. *Peaches:* Alexander, Early Louise, Hales' Early, Dr. Hogg, Grosse Mignonne, Dymond, Royal George, Bellegarde, Noblesse, Violet Hâtive, Barrington, Princess of Wales, and Walburton Admirable. *Pears:* Doyenné d'Eté, Jargonelle, Williams' Bon Chrêtien, Beurré d'Amanlis, Souvenir du Congrès, Triomphe de Vienne, Beurré Superfin, Louise Bonne of Jersey, Marie Louise, Emile d'Heyst, Doyenné du Comice, Thompson's, Glou Morceau, Passe Colmar, Josephine de Malines, Beurré d'Anjou, Marie Benoist, Winter Nelis, Passe Crassane, Beurré Rance, Doyenné d'Alencon, Bergamotte d'Esperen, and Easter Beurré, with Uvedale's St. Germain for stewing. *Plums:* Dessert—July Green Gage, De Montfort, Denniston's Superb, Jefferson, Purple Gage, Green Gage, Transparent Gage, Rivers' Golden Gage, Coe's Golden Drop, Reine Claude de Bavay, Bryanston Green Gage, and Ickworth Imperatrice. Kitchen—Early Prolific, Czar, Belgian Purple, Large Black Imperial, Prince Engelbert, Victoria, White Magnum Bonum, Diamond, Pond's Seedling, Monarch, Autumn Compôte, and Archduke. A south aspect suits all the fruits, but the most suitable are Apricots, Figs, Nectarines, and Peaches; an east aspect answers for Cherries and Plums, and a west for Pears. Only Morello Cherry does well on a north aspect; but kitchen Plums, especially Victoria, bear fairly, and some Pears; also the May Duke of all Cherries.

Small Bunch of Grapes (*W. B.*).—"What is the matter with the small bunch of Grapes sent, also the remedy, and the name of them?" The answer is, as regards the "matter," (1) badness of colour, (2) imperfect finish, (3) resultant shrivelling, and (4) mould. The berries are very small, streaked, and altogether indifferent. There is no disease to account for the decay of the berries. The remedy can only be found in more liberal treatment in the way of nourishment. You give no particulars about the age of the Vine, nor of the soil and position in which it is established.

Chrysanthemum Leaves Yellow (*Perplexed*).—The shoots and leaves are a beautiful yellow or golden colour, quite as effective for contrast as many plants grown solely for that purpose. There is nothing whatever the matter with their tissues, except the colouring pigment or chlorophyll granules are xanthophyll, but why so we cannot tell; and what is of more consequence we fear the colour is so decisive that the change again to green will be very difficult, especially as the plants have been watered with weak soot water twice a week. This, as you know, gives a dark green colour to plants. We had a similar experience with some plants that were watered with soot from chimneys where wood had been largely burned. We then supplying nitrate of soda instead, a quarter oz. to a gallon of water to begin with, increasing to double strength by degrees; the colour improved, and where begun early enough entirely changed to deep green. This you may try, with an occasional addition of half the amount of sulphate of iron, Sometimes we have found an alternation with sulphate of ammonia assist wonderfully, not using it stronger to begin with than nitrate of soda, supplying about twice a week, always with a watering of clear water between. We do not think the watering has anything to do with the chlorosis or yellowing; it is a matter of nutrition or constituent elements of the soil, or those supplied. The plant is Polygonum sachaliense.

Destructive Grubs in Garden (*Anxious*).—The grubs are the larvæ or caterpillars of the Turnip or Dart moth (Agrotis segetum), commonly called "surface" caterpillars, as they live and feed near the surface of the ground. They do an enormous amount of damage, but variable in infestation. The caterpillars will eat almost anything in the vegetable way, feeding on Cabbage, Carrots, Beet, Leeks, Onions, Lettuce, Turnips, and Spinach. The egg is laid from June to late summer, according as the moths emerge from pupæ, and the caterpillars hatch in about a fortnight, and feed chiefly on parts of plants above ground. As they get older they hide by day and feed at night, in bad weather feeding wholly under ground, and this they carry on during the winter when hatched late. The early ones form cells in the ground and turn to pupæ in the spring, coming out as moths in June onwards. The "grubs" are difficult to get at, but after all hand-picking is the best remedy. A dressing of salt (10 cwt. per acre, 7 lbs. per rod) acts better than anything we have tried, scattering it evenly; but it tells somewhat on the plants, therefore must be kept out of the hearts. For similar reason kainit cannot well be used, otherwise 5 cwt. per acre, 3½ lbs. per rod, clears them off, and you can apply it when the crops are cleared; then it will get at them, and leave potash in the land for future crops. On foul land gas lime (5 tons per acre, 70 lbs. per rod) may be used in autumn, and left on a month or six weeks before digging in. That will clear the soil of the pests.

Names of Fruits.—*Notice.*—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. *In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing.* The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. *They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state.* (*G. O.*).—1, Golden Noble; 2, King of the Pippins; 3, Emperor Alexander; 4, an inferior variety, not worthy of a name; 5, Potts' Seedling; 6, Blenheim Pippin. (*Fruit Foreman*).—1, Kerry Pippin; 2, Reinette de Canada; 3, Lord Suffield; 4, Ribston Pippin. (*B. T. E.*).—1, Beurré d'Aremberg; 2, Beurré Superfin; 3, Williams' Bon Chrêtien. (*P. S. M.*)—1, Alfriston; 2, Maltster; 3, Lewis' Incomparable; 4, Bergamotte Esperen; 5, Beurré Hardy; 6, perfectly hard. (*J. B.*).—1, Worcester Pearmain; 2, Lord Suffield; 3, Lord Grosvenor; 4, Winter Greening; 5, Ribston Pippin; 6, Mère de Ménage. (*W. B.*).—1, Cellini; 2, Cox's Orange Pippin; 3, Hollandury; 4, Borsdörfer; 5, Nonesuch.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*W. J. G.*).—1, Vitis humulifolia; 2, Ulmus campestris var. latifolia. It is a variety of Elm frequently seen in a variegated form, but frequently runs out of colour. (*W. Jinks*).—Asclepias currasavica. (*F. H.*)—1, Aurya latifolia varicgata; 2, Cassia corymbosa; 3, Veronica longifolia subsessilis. (*P. I. J.*).—1, Pyrus sorbus; 2, Cotoncaster frigidus; 3 and 4, withered beyond identification; 5, Pyrus aria. (*Inquirer*).—1, Linaria alpiua; 2, Sedum reflexum; 3, Lysimachia nummularia; 4, Monarda didyma; 5, Galega officinalis; 6, Sedum ibericum. (*A. M. M.*).—Schomburghia Lyonsi.

COVENT GARDEN MARKET.—Sept. 22nd.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	1 0	to 3 0	Grapes, lb....	0 8	to 2 0
Cobs	22 6	25 0	Lemons. case	11 0	14 0
Filberts, 100 lbs.	25 0	0 0	St. Michael's Pines, each	3 0	8 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, ½ sieve	0 0	0 0	Onions, bushel	3 6	4 0
Beet, Red, doz	1 0	0 0	Parsley, doz. bnchs	2 0	3 0
Carrots, bunch	0 3	0 4	Parsnips, doz	1 0	0 0
Cauliflowers, doz.	2 0	3 0	Potatoes, cwt.	2 0	4 0
Celery, bundle	1 0	0 0	Salsafy, bundle	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Seakale, basket...	1 6	1 9
Cucumbers...	0 4	0 8	Scorzonera, bundle	1 6	0 0
Endive, doz.	1 3	1 6	Shallots, lb.	0 3	0 4
Herbs, bunch	0 3	0 0	Spinach, pad	0 0	0 0
Leeks, bunch	0 2	0 0	Sprouts, ½ sieve	1 6	1 9
Lettuce, doz.	1 3	0 0	Tomatoes, lb.	0 4	0 0
Mushrooms, lb.	0 6	0 8	Turnips, bunch	0 3	0 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var. doz. ...	6 0	to 36 0	Ficus elastica, each	1 0	to 7 0
Aspidistra, doz....	18 0	36 0	Foliage plants, var., each	1 0	5 0
Aspidistra, specimen ...	5 0	10 6	Fuchsias, doz.	3 0	5 0
Chrysanthemums, per doz.	4 0	9 0	Heliotropes, per doz. ...	3 0	5 0
,, ,, single plants	1 6	2 0	Lilium Harrisi, doz.... ...	12 0	18 0
Coleus, doz.	2 6	4 0	Lycopodiums, doz.	3 0	4 0
Dracæna, var., doz.	12 0	30 0	Marguerite Daisy, doz. ...	4 0	9 0
Dracæna, viridis, doz. ...	9 0	18 0	Mignonette, doz.	4 0	6 0
Euonymus, var., dozen ...	6 0	18 0	Myrtles, doz.	6 0	9 0
Evergreens, var., doz. ...	4 0	18 0	Palms, in var., each... ...	1 0	15 0
Ferns, var., doz.	4 0	18 0	,, specimens	21 0	63 0
Ferns, small, 100	4 0	6 0	Pelargoniums, Scarlet, doz.	2 0	4 0

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms ...	2 0	to 4 0	Lily of the Valley, 12 sprays	1 0	to 2 0
Asparagus Fern, bunch ...	1 0	2 6	Marguerites, 12 bnchs. ...	2 0	3 0
Asters, bunch	0 2	0 6	Maidenhair Fern, doz. bnchs.	4 0	8 0
Bouvardias, bunch	0 4	0 6	Mignonette, doz. bnchs. ...	2 0	4 0
Carnations, 12 blooms ...	1 0	3 0	Orchids, var. doz. blooms.	1 6	12 0
,, doz. bnchs. ...	3 0	6 0	Pelargoniums, 12 bnchs....	4 0	6 0
Chrysanthemums, 12 bnchs.	4 0	6 0	Pyrethrum, doz. bnchs	1 6	4 0
,, ,, 12 blooms	0 6	2 6	Roses (indoor), doz.... ...	0 6	1 0
Cornflower, doz. bnchs. ...	1 0	2 0	,, Tea, white, doz. ...	1 0	2 0
Dahlias, doz. bnchs.... ...	2 6	6 0	,, Yellow, doz. (Niels)	1 6	4 0
Eucharis, doz.	2 0	3 0	,, Red, doz. blooms ...	0 9	1 0
Gardenias, doz.	2 0	4 0	,, Safrano English) doz.	1 0	2 0
Geranium, scarlet, doz. bnchs.	3 0	4 0	,, Pink, doz....	1 0	2 6
Gladioli, doz. bnchs. ...	4 0	8 0	,, outdoor, doz. bnchs.	3 0	6 0
Lilium lancifolium, bnch.	1 6	2 0	Smilax, bunch	1 6	2 6
Lilium lancifolium, short, per 12 blooms	1 0	1 6	Sunflowers (various)... ...	2 0	4 0
Lilium longiflorum, 12 blooms	3 0	4 0	Tuberoses, 12 blooms ...	0 3	0 4
			Violets, doz. bnchs.... ...	1 6	2 0

GOOD NEWS AT LAST.

After years of falling markets we may be excused if we greet any little return of better prices with great acclamation. The difference a few shillings per quarter in the grain crop just turns the scale one way or the other. A rise of a few shillings makes the crop a profitable one; the fall spells disaster in big type.

During these years of depression much stress has been laid on the necessity for feeding more stock instead of cultivating cereals; but some of these wise advisers have not fully considered the question of food for this extra stock. They say in a lordly manner, Lay down more land to permanent pasture, forgetting, or not knowing, that land best calculated for corn growing is not always suitable for grass

or varieties of Clover. They forget also (and this is a sad indiscretion on their part) that they are advising men who are in many cases in money difficulties, or who find the money market decidedly tight. Laying down land to grass means a large present expenditure in suitable seeds; it also means a long waiting time, till those seeds of grass have attained a proper growth—*i.e.*, a growth which will allow of them being mown or grazed without permanent injury. Now, during those years of waiting the rent still goes on, and that rent has to be supplied from some other source, and is often very difficult to find. We do not have land at prairie value here, or, at least, we have not met with it in our parts.

There is not a shadow of doubt but that our good sound English-grown Wheat is more nutritious as an article of diet than the dry white grain we import from foreign parts, and when English Wheat and English flour can be once more grown at a profit to the farmer a good supply will be found somewhere.

Of course, we know that with our best endeavours we cannot produce enough for our teeming population, yet a little encouragement in the matter of price has a wonderfully stimulating effect on the producer. We have seen the introduction of many fine varieties of seed Wheat, bold in berry, upstanding, and of very great fertility, and we have little doubt that our great raisers are yet prepared to do more for us in this line. Beside, too, every year opens up new vistas of promise in the way of tillage. Science comes to our aid, and teaches us how to grow five ears of corn where only four were found before.

Now, at the conclusion of this harvest of 1897, we view the situation with much satisfaction. "Punch" was the first in the field to touch on passing events, actually devotes a large cartoon to agriculture, representing Ceres with an overflowing basket and beaming at the prospect of better prices. May the prices last! Surely the townsfolk who have had cheap bread so long at our expense will not grudge us this little gleam of sunshine in our cloudy sky.

This year we find from statistics just published that the area under Wheat for the United Kingdom has increased by 200,000 acres. This is something substantial, and we are glad to record that the yield is a very fair one. Of course, as there are spots in the sun, there are places where from some cause or other the yield is disappointing, but these places are in the minority. Then, again, too, in the South and East the crops were got in very good condition. Wheat, too, in the North has not suffered so much as might have been expected from the broken weather. It was all so dry to begin with that it took much rain to make any impression whatever. Barley has been the greatest sufferer; bad weather affects the colour, and makes the maltster look shy. Curiously enough, from Wiltshire come accounts of badly damaged Barley, while from Scotland we hear that the greater part of the Wheat was safely housed before the weather broke. This fact rather makes us wonder when the Wiltshire Barley was sown. We have urged and advocated all our lives the necessity of early sowing for Barley, and as the years roll by we see no reason to alter our opinion; on the contrary, as long as we have a breath left we shall still preach the old doctrine.

Last year (1896) the kingdom grew 1,734,118 acres of Wheat; this year the total is 1,938,183 acres, being a little short of the acreage of 1894, but 484,168 acres more than two years ago. This year, too, we stand alone as a nation in having an increased area and good yields, beating especially every continental nation.

It is rather difficult to come to a correct conclusion as to yield, but we think we shall be about the mark when we give 29 bushels per acre as the average.* We think we are not too sanguine, but of course we are open to correction on this point. Last year the estimate was as follows:—

Acres, 1896.	Bushels per acre.
1,731,976	33·63
Acres, 1897.	**Bushels per acre.**
1,938,183	29

* Since writing the above we have seen several well-known agriculturists of Nottinghamshire and Yorkshire, and they are most emphatic in their assertion that the Wheat yield will be found not to exceed 24 bushels per acre. We hope they may be wrong, but they are men on whose judgment we can rely.

Now, then, for the prices for the last few years.

September 1st to August 31st.	Per quarter 480 lbs. s.	d.
1892–3	26	10
1893–4	25	5
1894–5	21	3
1895–6	24	11
1896–7	28	5

This year, since June, there has been a steady rise from 27s. per quarter to 33s. 7d.; indeed, we have seen new White at 38s. 6d. and Red at 36s. Some old White, too, met a market at 41s. Of course, this was a specially good sample. There generally is a rise of price early in harvest before the threshing machine has got fairly to work; but now, although much Wheat has been put on the market, there is still a tendency in prices to harden.

Oats, too, are worth more money, and those people who have good samples of Barley are sure to meet a good trade. There is a feeling, too, abroad that the Potato crop may be more remunerative than of late. That the crop is small there is no doubt, and small crops mean enhanced prices. So far, we must depend upon ourselves in a great measure for the production of this tuber. Germany does send us some occasionally. Let us hope that this year they need all they have grown for home consumption. We do not wish to deprive our Teutonic friends of a single ton.

WORK ON THE HOME FARM.

A beautiful week has rejoiced the hearts of belated harvesters; full advantage has been taken of it, and in most districts the grain is safely under cover. There has been little absolute waste, but much damage to Barley samples, which will be reduced in value if not in bulk.

Fallows are now working well, and we have seen many fields full of little heaps ready for firing. Burning twitch and stubble is supposed to be very wasteful, but by burning we do not lose the potash, and with nitrogen at the present price, we hardly think that rotted twitch is worth the labour of twice carting; at any rate burning is the most expeditious plan, and time is of great value in making the best of fine weather at this season.

Old seeds are ploughing well, and Wheat must go into a capital seed bed. The ploughing must be done at once, so as to get settled and firm before the corn is drilled. Winter Tares should be sown as soon as possible. The land ought to be fairly clean, and well dressed with good decayed manure. This should be well buried with the plough and the seed drilled at once. Thin plants of Clover may be renovated with suitable mixtures, but this should be done without delay. We think there is nothing better than Dwarf Italian Rye Grass for this purpose, at the rate of 3 pecks per acre.

Unless it be for semi-permanent seeds, it is hardly worth while sowing Clovers so late; the risk of non-germination or destruction by severe frost militating much against a profitable result. Second early Potatoes are being rapidly cleared off, and when we hear of 3 acres of good land producing but 5 tons for market, it will be seen that they do not take much moving. Everywhere we hear of crops being but half of what they were last year, 5 tons per acre being quite the top limit. Late kinds are growing again luxuriantly, and will not be ready yet; we hope when they are, hands will be more plentiful than they were last year.

The Irishmen who are not now needed for the corn harvest are sadly missed in the Potato field later on, and a good man would earn quite as much picking Potatoes as he could at forking grain crops.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

DATE. 1897. September.	9 A.M. Barometer at 32°, and Sea Level.	Hygrometer. Dry.	Hygrometer. Wet.	Direction of Wind.	Temp. of soil at 1 foot.	IN THE DAY. Shade Temperature. Max.	Shade Temperature. Min.	Radiation Temperature. In Sun.	Radiation Temperature. On Grass.	Rain.
	Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Inchs.
Sunday .. 12	30·472	55·4	54·0	N.	55·0	65·7	43·0	107·1	37·4	—
Monday 13	30·502	53·3	53·1	N.	54·8	69·1	42·8	107·7	38·2	—
Tuesday 14	30·508	57·2	53·0	N E.	56·3	66·5	54·2	114·3	53·2	—
Wednesday 15	30·350	56·6	54·2	N.	56·6	67·0	48·2	109·8	42·1	—
Thursday .. 16	30·119	60·1	55·9	N.W.	57·0	64·8	53·3	100·8	49·1	—
Friday 17	29·775	55·9	51·9	W.	56·3	61·4	46·2	113·6	40·7	0·280
Saturday .. 18	29·594	49·0	46·8	N.	56·0	56·7	46·8	99·7	47·1	0·021
	30·189	55·6	52·7		56·0	64·9	47·8	107·6	44·0	0·301

12th.—Bright throughout.
13th.—Mist early, bright and sunny morning, fair afternoon, dull and overcast evening.
14th.—Overcast early, sunny from 10.45 A.M. to 3 P.M., cloudy after.
15th.—Overcast early, sun at 10.25 A.M., and alternate sun and cloud all morning, dull and dark 0·50 P.M. and rest of day,
16th.—Bright and sunny early, generally dull rest of day, but a gleam of sun at 2.45 P.M., dull night
17th.—Generally dull and cloudy with some sun, spots of rain in afternoon, and heavy rain at night.
18th.—Overcast most of the day, dull evening.

A finer and warmer week, temperature near the average, barometer above it.—G. J. SYMONS.

Journal of Horticulture.

THURSDAY, SEPTEMBER 30, 1897.

THE JOURNAL OF HORTICULTURE *can be obtained from the Office*, 171, *Fleet St., London, post free for a Quarter*, 3/9. **Editorial communications must be addressed to 8, Rose Hill Rd., Wandsworth, S.W.**

THE PLEASURES OF FRUIT GROWING.

IN these days of high pressure, keen competition, and profit seeking, there is a danger that the simple pleasures of gardening, apart from the pecuniary aspect, may be to some extent obscured or forgotten. As a recreation, and a means of relieving the mental strain endured by the busy professional man, gardening offers in many directions what few other occupations can yield—namely, healthful exercise, leading to enjoyable results. I am writing as one who has made his calling the study and pleasure of a life, and who has also seen somewhat of other countries than his own, and the conviction has long been formed that there is scarcely another occupation which affords those who engage in it, either for a living or as a recreation, so much real pleasure as gardening. This is equally true if it is taken as a whole, or when a department only is made a special hobby and study. The amateur who has his costly and superb collection of Orchids does not derive more satisfaction from the inspection of his valuable treasures than is enjoyed by the town mechanic with his Auriculas or his Ferns, and the parson's pride in his Roses is equalled by that of many a cottager with his prize vegetables or window plants. Hardy plants, too, have their devotees, and who can gauge the pleasure such flowers have afforded to thousands?

Still there is a department of horticulture to which perhaps fewer amateurs have applied themselves as a hobby, and this is hardy fruit culture. Generally the one absorbing idea when fruit culture is talked about is the pecuniary aspect, but why this should be so exclusively the rule it is difficult to determine. Perhaps with regard to Orchids the prospect of profit is taken into account somewhat, but it is a question that is rarely entertained in regard to any other horticultural hobby to the same extent. There are exceptions, it is true, and it is rather remarkable that in some instances where the commencement of fruit culture as an amusement for leisure hours was entirely free from any serious thoughts of profit, the results have proved even more remunerative than those whose plantations have been started on a presumably commercial basis.

Two notable examples of what amateurs can accomplish in hardy fruit culture, and how much entertainment they can secure from effects that may ultimately prove very profitable, recently came under my notice, and a few descriptive notes may not be devoid of interest to some Journal readers. The first visit was paid to a plantation at Harpenden formed by Spencer Pickering, Esq., F.R.S., a gentleman of considerable eminence in the world of science. In the course of his chemical investigation he met with an accident which for some time endangered his sight, and outdoor exercise became indispensable as a means of restoring his health. Some experience at Rothamsted and familiarity with the great work performed by Sir John Lawes and Sir Henry Gilbert led Mr. Pickering to take an interest in experimental work amongst plants, and the perusal of horticultural literature concentrated his attention upon hardy fruit culture. Attached to Mr. Pickering's residence is an old orchard which has permitted him to indulge his taste to the full in experiments connected with what may be termed tree-surgery, for many of these presented an array of cankered stems and branches that would have been rather appalling if profitable fruit crops had been the only object in view. In some cases the diseased wood has been cut away until only a narrow channel is left for the conveyance of the sap, the wounds have been dressed with tar, hollow places have been filled with cement, and it is astonishing, in many instances, to see the vigorous efforts being made by the trees to heal their wounds by the formation of new tissue.

In some extreme cases the trees have had their larger limbs removed, or they have been beheaded and grafted with strong scions, the majority of which are making vigorous growth, and bid fair to rejuvenate the veterans which have been subjected to many years of bad treatment or neglect. That every one of these experiments is a subject of special interest to the operator can be readily imagined; but they possess an interest beyond that, for they show that there are times when the knife must be freely and boldly used to effect the desired purpose. They also show what vigour there may be left in old trees if they are subjected to the right treatment.

Experiments on old trees were not enough, however, to satisfy Mr. Pickering, and about four years ago he commenced a plantation of young trees away from the old orchard, and this is already giving satisfactory results. The soil is heavy, containing a quantity of stones, but it was thoroughly and deeply worked before laying it out for planting, and a liberal dressing of London stable manure was dug in. About an acre was enclosed by a wooden fence on two sides and an open iron fence on the others. In this space nearly 1000 Apples, Pears, Plums, Damsons, and Cherries were planted together, with 2000 Currants and Gooseberries. The general scheme of the plantation is to have standard Plums as the basis, with dwarf Pears and Apples between them, the intermediate spaces being again utilised for the Currants and Gooseberries, some trained trees occupying a portion of the ground. Taking the trees generally, satisfactory progress has been made, and even in a season of scarcity, like the present, it is gratifying to see vigorous young trees of Cox's Orange, Potts' Seedling, and other useful varieties laden with fine clean fruits. Some of the Pears are similarly well grown and well cropped, conclusive evidence being afforded by all the trees that both soil and treatment have been right.

The Plums are, however, a rather deplorable instance of how even good treatment may fail in producing the desired effect. A mysterious disease has attacked them, and it appears probable that a large percentage of deaths will ere long have to be recorded. This is the more regrettable since the trees started well and have developed good heads, and had, moreover, reached an age when profitable crops might have been expected. The bark seems to die in patches or strips, the altered appearance being plainly evident in most cases; the injury extends both upwards and downwards, affecting the wood as well, until when the circuit of the stem is completed with dead bark and cambium, the fate of the tree is determined. So long as a longitudinal strip of living bark and tissue remains the tree struggles for life, and by careful excision it is possible that some may recover, but in the majority of instances it is hopeless, the leaves lose colour and droop, and the fruit becomes prematurely ripened.

It has been found that a fungoid growth is present in the bark, but whether this is a cause or a result of the disease has not been determined. Frost injury has been assigned as a probable predisposing cause, and some weight is attached to this, but the matter is still under investigation, and no doubt the results will be ultimately brought before the public. Fruit growers have abundance of evils to contend with in the shape of insect pests, but if developed trees that have reached bearing size are liable to be lost in this mysterious manner, for which there is no apparent remedy, the difficulties and prospects of loss will be increased tenfold. This certainly cannot be counted as one of the pleasures of fruit growing, unless the evil can be overcome, when perhaps the satisfaction will in some measure compensate for the loss.

Apart from this disaster there can be no question that the owner of this plantation has derived a considerable degree of pleasure from it in planting, tending, and watching the progress of the trees, far in excess of the expense; yet there has been an appreciable return in fruit crops during the past two years, sufficient to pay a fair interest on the capital expended, and there is every prospect of this return being materially increased, notwithstanding the loss of the Plums.—OBSERVER.

(To be continued.)

NATURAL VERSUS ARTIFICIAL FERTILISERS.

(*Continued from page* 258.)

IN considering the claims of natural manure or organic matter, as essential in successful cultivation of the soil, possibly some readers, learned or semi-learned in the science of manuring, may dissent from some of my conclusions. They may say that "artificial manures effect wonderful results," and ask us, in proof, to look at the produce at exhibitions. Admitted. In the vegetable market nothing can rival the home-grown article, but have artificials alone produced it? Never. "We have grand Grapes." Yes; but look at the Vine borders of loam, the top inch or two of the richest accumulation of organic matter, bones and what not. For what does this organic matter count? Do "artificials" alone grow good Grapes for years without any manure? Look at the fact, turn it over, make sure what there is due to the "natural" and what to the artificial ingredients. This is being done by experiment on collegiate lands and experimental grounds. Even the Rothamsted experiments, conducted on an unparalleled basis, have not set agriculture on its legs. But the scientific and practical investigators and experimenters ever point to the intrinsic value of organic matter.

Grind rock into various degrees of fineness, and in this soil operate with natural and chemical manures separately on growing plants. What is the difference? The natural products contain some available and a certain amount of unavailable plant food, but they also yield acids in decay acting on inorganic material, or the rock, to go along with the nitrogenic matter into the plant in the soil waters. The purely chemical preparations, fit for plant food, do nothing of the sort. Plants fed by them, as in water culture, must have supplies more or less constantly, and are only of use for the time, and as such unreliable or dependent upon something else for the measure of utility. The world is now so replete with organic remains that few soils do not contain at least some to render "artificials," even wholly chemical, useful, but organic matter we *must* have, and experience teaches that it is best supplied in decayed natural or farmyard manure.

Thus far we get at nothing but the necessity of a judicious blending of organic with inorganic substances in "artificial" fertilisers. In some their use does not extend beyond bones, in others fish meal; and in not a few rape meal or native guano. Analysis shows the value of, say, bone ash superphosphate, and nitrate of potash; bone superphosphate, nitrate of soda and muriate of potash; mineral superphosphate (high grade), sulphate of ammonia, and double sulphate of potash and magnesia. In comparison with these fertilisers, analysis of native guano, for instance, is nowhere. That is the chemical test. What is the practical? Ascertain by experiment on a Vine border. Put on so many shillingsworth of native guano, which by chemical test is worth next to nothing, and the same number of shillingsworth of

high-class fertiliser, which by chemical test is good as gold, and note the result—not for one, but several years. The chemically worthless article turns out in practice the most valuable, both as regards weight of crop and the colour and quality of the produce.

Then night soil, according to analysis, is about the poorest manurial substance known. In practice, there is not a better manure for growing Grapes, Onions, and Rhubarb. It is slow, but its effects appear in the green colouring matter of leaves, and the purple, black, and golden amber of fruit. It is good for everything to which it is applied, if given time to show itself in the produce. It must be tempered in some way and reduced, just as blood is made into a dry powder alike for portability and application.

For poverty of analysis stable and farmyard manures come very low; indeed, according to the chemists' standard, there is very little worth having in either. Farmers, unfortunately, let the stamina run off in ditches, and not many gardeners find enough liquid in the tanks to meet their requirements. There is nothing like good "muck." It improves the staple of soils as well as restores what has been taken off in crops—a combination of advantages not possessed by chemically prepared manures. For grass land nothing comes near farmyard manure in value, whether as regards hay, milk, butter, beef, or mutton, and as regards "roots" all the mixtures put on by hand cannot approach it for usefulness. In the garden I have never seen too much of it in the properly decayed form except on Vine borders, where it could not be said to be used, but abused, when not associated with a due apportionment of inorganic matter.

The time is at hand when land will be cleared of crops, and the best time to use stable or farmyard manure is then. All ought to be prepared so that it can be readily spread and turned under. It will not waste in the land or even on it. The rains of winter wash nothing away but the worthless stuff, for the soil has a vice-like grasp on ammonia—holds it until the microbes wake up in the spring, and then the roots of plants reach out their hair-like tongues and sip in the energising diluted essences. Potash in like manner does not run away, it stops along with the ammonia, ready for use in the quickening of vegetation by the sun. Magnesia also remains, as does the phosphoric acid, for the soil lays hold of them and keeps them till wanted by plants, be these weeds or useful crops. The earth, cultivated, is a store-house of good things for plants, only put them in more or less raw and let Nature and "brains" do the rest.

But it may be said the action of old-fashioned manure is slow. When spring comes the ammonia has to be made into nitrite and nitrate. The old gardeners knew that time was required for its action on the soil, and not only knew, but acted, for abroad over the land went the soot, held back during the winter, or out came the Peruvian guano in the spring and quickly moved the crops, outdistancing slugs, and when the flush of these spring dressings were over the microbes kept up the running of nitrogen in the plants. The old gardeners knew of the value of such practice, and in some instances they were amongst the first to lay hold of the valuable scientific facts which chemists brought to public notice; but those gardeners never, and do not even now, let go the sheet anchor, for they still cling to the time-honoured manure heap, the loam of the pasture, and the leaf mould of the woods.

Thus the horticultural ship rides safely because the anchorage is sound, and observant scientists, having been taught by successful workers, now advise the use of fertilisers in the autumn—a practice they once disavowed. Bone manure, even superphosphate (not mineral), with potassic manures (not in nitrate form), are advised to be used in the autumn or very early spring. This is the practical and right way. The old gardeners led the way in using liquid manure in winter (the value of the applications being first made known through these columns) instead of letting it run to waste, and growers of produce for market lose nothing they can obtain in the shape of manure at any time and from any source. Scarcely any material comes amiss, for put on something they must and will, but always with judgment, well knowing the difference between the food that has to be made ready in the soil before it can be appropriated by plants, and that which is quickly available. From such practice and investments they obtain profit, or they would not, and could not, be pursued generation after generation.

Finally, the artificial manure manufacturer, who possesses both practical and scientific knowledge, does the mixing in far different form than formerly. The "flash in the pan" custom has given way to a rational blending of organic with inorganic materials, a quickly acting, and at the same time steadily supporting dietary being provided. Artificial manures have helped wonderfully in horticulture, simply because they have been used as supplementary to sound staple in soils, the judicious use of other substances affording humus and high-class cultural practice. Many, if not most, successful vendors of special manures are, or have been, cultivators themselves—old gardeners or farmers, or both, who have proved the value of their preparations, kept in touch with their customers' requirements, and also abreast of the times in which they live.—G. ABBEY.

DECORATIVE WORK.

(*Continued from page* 263.)

WHERE a gardener fails to some extent to do justice in the decoration of a large hall or other public building, or a ballroom, any of which under the varying circumstances of life he may be called upon to perform, may be rather from a want of daring than from a paucity of ideas, or even a deficiency of material at hand. One whom I knew who was called upon somewhat suddenly to execute the decorations for a hunt ball to be held in the most country of country towns, sought some advice upon the matter from a friend whose experience of this work was more extensive. Together they discussed the matter upon the scene of the intended festivities, which was a large bare building, offering a fair field for adornment. Good advice was given, and various suggestions made, which were in a way of great service, but in a way only, as our decorator was expected to give a maximum of display at a minimum of expense. He was, in fact, told that with his staff and such material as the shrubberies afforded in the way of evergreens, ample means were at hand, hence flags or other purchased or hired material was out of the question, and flags, his adviser had insisted upon as a necessity. However, our gardening head devised and carried out what merited and obtained unqualified praise.

Flags were a *sine qua non*, so home-made ones filled the breach. Laths, some 6 feet long, surmounted with zinc cut into the form of lanceheads and painted with gold paint, answered that part of the purpose admirably, whilst some yards of red, green, and yellow art muslin a yard wide (of the cheapest quality), and in self colours, composed the flag portion; about 3 yards of the muslin being tacked on to each lath and made to hang in graceful folds by being caught up with a tack at the bottom. A bold trophy of these flags was arranged fan fashion on the end wall of the building, small trophies being disposed between the windows on either side above a dado which is worthy of description. This consisted of 2-inch mesh wire netting 3 feet high run along the wall on either side, into which was closely interlaced sprays of common Laurel, a screen of the same height being stretched across the front of an improvised orchestra which was dressed with small sprays of Portugal Laurel, into which, at intervals, the initial letter of the Hunt Club was boldly interwoven with twigs of variegated Box, sufficiently distinct in its colour to stand out clear on the groundwork. Some well-made wreaths outlined the windows and entwined the gas-brackets, whilst roughly made latticework upon which evergreens were secured completed the furnishing of the end wall, where the trophy of flags was the central feature. The whole arrangement of this hunt ball decoration, simple as it was, afforded the maximum of effect at a minimum of expense, whilst the labour, principally consisting of inserting the Laurel cuttings, was rapidly accomplished by the nimble hands of a few lads directed by the older "Head."

In a roomy hall of this kind a central gas pendant or chandelier offers temptations as a holding from which wreaths may be festooned to the side or end walls. With some little discretion respecting the weight put upon this structure an excellent effect may, under some conditions, be gained; but in one case under notice the strain imposed brought a gas leak, and that confusion at the last moment. On bare walls where windows do not intervene to break the line, or to form a continuous line above them, the employment of a substantial wreath caught up at regular intervals to the wall-plate from which the roof springs will generally exhibit good taste. This wreath hanging in graceful festoons is more decided in character if a substantial rosette made of bright pink tissue paper is fastened on to the wreath at those points whence it depends. Good decorators generally do not favour the use of paper presentments of flowers, or indeed the introduction of coloured paper, wrinkled or crinkled, in any phase of decoration; but it is, in this or similar cases, quite admissible, for distance lends enchantment to the view, and that view is by artificial light. Freshness, brightness, and novelty are the desiderata not difficult to obtain during the duller periods of the year.

Now and again similar work is required during the summer months when the bulk of our evergreens, in the soft and tender growing stage, are totally unfitted for the purpose, yet have I seen them thus used without any discrimination as to their lasting properties. At a military ball contributions in the form of some waggonloads of this unsuitable material were sent in two days prior to the event, and one could only regard the use of it as a waste of labour, even worse, for it is futile to expect any satisfaction from foliage flagging as soon as cut; nor is it easy to find substitutes. However, much can be done in other directions. Trailing Ivy from the woods, growing under trees in preference to that growing upon them, if procurable in quantity, and tied in bundles with the ends placed in water until absolutely required, is very helpful in the way of greenery. In using, five or six long sprays tied together in a handful of damp moss can be fastened at discretion to long narrow laths for wall drapery, or to a mantleboard for ornamentation of a fireplace. Upon these particular occasions heavy effects are neither necessary nor desirable, and the fresh green

of Ferns in pots with plenty of moss, some bright flowering plants, and a few stately Palms may be all-sufficient for the purpose. In most cases of this kind the decorator will, probably, have to work with a restricted hand so far as any obstruction of the floor space is concerned.

The decoration of a private mansion for a social function offers great opportunities for the gardener to display good taste and artistic ability, and when called on to execute it he should, with this power in his hands, think himself happy if, in rising to the occasion, he is able to express his ideas. With examples furnished by our eminent tradesmen, who as decorators carry out to order those magnificent schemes, exalted into a fine art, and exhausted in a wealth of choice flowers and foliage, we have naught to do, although it is good for gardeners, if opportunity occurs, to criticise all details, to note the strong points, and weak ones if there are any to be found. With what a gardener may be called upon to do, with what he has to do it with, and how it may be done, is our immediate concern. By taking as an example the successful treatment of the festive decoration of a mansion, we may next study the question from the hall door, where it commences, to the reception rooms and the staircase, where the principal features and the greatest possibilities occur. It may be here remarked that the expert decorator is always anxious to avoid working upon stereotyped lines, and although always ready to notice any particularly good or striking effects, they are more of service to him as suggestions than as models to be closely copied.—DECORA.

(To be continued.)

IS GARDENING DECAYING?

SOME EXCUSES AND A MORAL.

THE gardening fraternity of the present day flinches from the challenge which I threw down a few weeks ago. Silent are the men who are heard at the shows loudly glorifying their productions, silent are they whose voices and pens are most frequently at work in mutual laudation. Not a word has been said in disproof of the indictment which I levelled at the present aspect of horticulture, and the charges I made stand firm on the rock bed of unassailed accuracy.

What a picture it is! For years past I have been watching the development of gardening into a vast mutual admiration association, in which, instead of labouring to raise their standard of knowledge, the members extol their own and their neighbours' commonplaces, for all the world as though they were better, rather than worse, than those of past years. Yet when someone comes forward who has lived long enough to perceive the fallacy of it all, and has the temerity to speak what he thinks, these pusillanimous heroes lurk in the rear, unable to say a word of exculpation or justification.

The fact of the matter is that a nice warm, comfortable camp had been formed, a place where the members of the mutual admiration association fancied themselves snug and secure. Into this camp a shell suddenly dropped, scattering the talkers and writers in all directions. Such, I suppose, was their confusion and discomfiture, that they were unable to gather their forces for one poor little volley; and so I return to the charge again, prepared to maintain my position, and, indeed, only too anxious to drag from their obscurity the champions—if there are any—of the new order of things.

In what has transpired as a result of my article, nothing but what is corroborative has appeared. Is not this significant? An apologetic tone has been in most cases assumed, but the broad result is an admission of the truth of my contentions. Let me now glance at some of these apologies. One writer, beginning with a compliment to my literary abilities which I neither deserve nor covet, passes on to refer among other things to the increase of decorative work as a reason for the decay of sound general practice. Of all the excuses which could be brought forward, this is surely one of the lamest. Was there, then, no decorative work done in the old days—work that would vie with the vaunted efforts of the present time? Why I, whom this correspondent insidiously attempts to disarm with laboured compliments, have probably spent more time than he has in some of the most delicate and at the same time extensive "furnishing" ever carried out in this country. In truth, such trivial excuses as excess of indoor work are futile.

It would be amusing, if it were not melancholy, to perceive the attempts that are being made all along the line to raise side issues. I have, I see, set a few of the professors by the ears with regard to the question of wall fruit. Here, again, no endeavour is made to repel my arguments, but a cloud of dust is blown up, as if that would help us to see daylight. If my position were seriously assailed, which it is not, I should have abundant comfort in the fact that as the clever men who are at issue with each other are using up all the dainty epithets they can find I should certainly be spared. I do not doubt that they are "stupid," I am not going to question the fact that they are talking "nonsense;" I only want to make it clear that that is not my style of argument, but theirs.

But what, after all, does all this talk about the decadence of wall fruit amount to? Let us have done with the mutual admiration association, and face the facts. It is admitted that there is great deterioration, although no one appears to have had the courage to state the case in plain words, and the question I want to ask is this, If a gardener had an important department under his charge, which he perfectly understood the demands of, would he not find some means of giving it at least as much attention as was necessary to keep it in a tolerably satisfactory condition? Would he let his Chrysanthemums, for example, destroy his fruit? Assuredly not. It is because our gardeners are getting into the way of thinking that half a training is as good as a whole one—that as soon as they have completed their first year in the bothy they are qualified to take a head place—that things are drifting as they are. Why disguise the fact? Why not face it like men?

There is much in the statement that Chrysanthemums have a good deal to do with the decay of all round gardening; but it is not because the plants simply take up a great deal of time, it is because a race of men is springing up who know very little about anything else but these overrated plants. The thing is as plain as the day. Ladies pay a considerable amount of attention to Chrysanthemums for a week or two in the autumn, and consequently a collection is grown much too large for the place. This thing is bound to be attended by a reaction. Masters are beginning to find out that it is not worth while to spend large sums just for the privilege of hob-nobbing with a handful of squabbling specialists at an autumn show. The Chrysanthemum is already on the decline, and when the time comes, as come it will, for the word to be passed round among the gentry that the costly Chrysanthemum "collection" is to be reduced, woe to the man who has for so long existed under the notion that his knowledge of the culture of one plant will enable him to pass muster as a good gardener. A Nemesis is pursuing him, and the signs of its approach are already apparent.

I am not sorry in one sense that this point of the Chrysanthemum has cropped up in the discussion which followed my first letter. Traverse, if you will, the length and breadth of the country, as I do, and you will find, as I have found, that the egotism which prevails amongst our modern gardeners only assumes its worst phases when a Chrysanthemum circle is formed. I have attended many Chrysanthemum shows, and listened to many Chrysanthemum papers, and the conclusion I have come to is this—that the impression is common that the universe was designed specially for Chrysanthemum growers, and will revolve round them until the end of time.—TRAVELLER.

[Our trenchant "Traveller," who has suddenly appeared to sparkle like a new star over a degenerate world, does not say anything about Shrewsbury. We would now suggest his attending the November show of the National Chrysanthemum Society—if he can find room. We let the "squabbling specialists" stand as the greatest novelty of the season up to date.]

ARE ROMAN HYACINTHS POISONOUS?

ONE is inclined to answer this question in the affirmative, judging by the intense irritation set up by handling the bulbs. This effect is, however, not common to all, as some people can handle the bulbs with impunity; and it is, I believe, not at all certain whether the annoyance experienced by some is due to a poisonous principle in the cuticle of the bulb, or to some kind of abrasion consequent upon the presence in the skin of the bulb of myriads of minute needle-like crystals of calcium oxalate (raphides).

These acicular crystals are common to all Hyacinths, but I have never known any bad results from handling the ordinary Hyacinths, so that evidently there is some peculiarity of the Roman Hyacinth that needs further explanation, especially so as it is merely a variety of the common garden form (Hyacinthus orientalis). The crystals appear to be as plentiful in one variety of the Hyacinth as the other, so that so far as quantities of these little raphides go I do not think there is anything to choose between the two.

Anyone in possession of a microscope can with ease examine these crystals, with an inch or a quarter-inch objective. The preparation is very simple. Tear off a shred of the cuticle and soak it for a few hours in methylated spirit, then clean it by soaking it again for a short time in clove oil, when it can be mounted in Canada balsam. Some faint idea of the myriads of crystals can then be formed by comparing the size of the shred of skin examined with the numbers of raphides on the field of the glass. The form of the crystals can be better seen by using the polariscope.

Your correspondent "J. C." asks for a remedy or a preventive. The latter is very easy—wear when handling the bulbs a pair of old kid gloves. It is better even to run the risk of being thought "a kid-gloved gardener" than to suffer the irritation.—JOHN W. ODELL, *Stanmore*.

ORCHIDS

Saccolabium bellinum.

S. BELLINUM (fig. 46) is small compared with most other Saccolabiums, though of similar habit, the leaves being arranged in a two-ranked manner, and the flowers are very distinct in form. Their chief peculiarity is in the lip, which at the base is expanded in a strange cup-like manner; the apex is flattened and, extending at right angles with the cup, resembles a platform upon which bees or other insects may alight. The surface of this platform is covered with short white filaments, which impart a strange appearance to it when closely examined. In colour the flower is not very remarkable, though there are some curious contrasts. The sepals and petals are yellow, or with a greenish tinge, on which are scattered several circular dark red spots; the base of the lip is white with crimson dots, and the centre yellow with purple dots. The spikes are small, bearing from three to four flowers each, and though unpretentious in general appearance it will become a favourite with lovers of many interesting diminutive species of Orchids.

Cool Orchids.

There is no section of the Orchid family more interesting and beautiful than the numerous species and varieties inhabiting the higher mountainous parts of the tropics, and therefore thriving under cultivation with very little artificial heat. In the family of Odontoglossums there are many chaste and lovely forms that can hardly be equalled, and certainly not excelled, by any requiring great heat. The graceful spikes of some in the cool section of Oncidium are unsurpassed in lightness and elegance, while in bright and glowing tints the cool house is exceptionally rich.

Disa grandiflora, Epidendrum vitellinum, Sophronitis grandiflora, Ada aurantiaca, and all the showy Peruvian and New Grenadan Masdevallias. These form a rich array of colour, and every one may be grown in a house kept just comfortably warm in winter, and in summer as cool and moist as heavy shading and abundance of air and moisture can make it. Lycaste Skinneri, in its many beautiful forms, is a host in itself, while quaint and structurally interesting plants are found in plenty among the Restrepias, Pleurothallises, and the tiny growing kinds included in Oncidiums and Masdevallias.

Each of these classes of Orchid flowers finds its own section of admirers, and for those desiring a representative collection it is fortunate that they may, as far as atmospheric conditions are concerned, be somewhat collectively treated. All of them abhor a dry, parched, or draughty atmosphere; what they like is the air about them from May to September kept saturated with moisture, a more or less dense shade, and frequent supplies of water to the roots. The quantity required varies, of course, with the different kinds, and their seasons of rest and growth have to be carefully noted and followed as far as possible.

To take two well-known kinds as a contrast, I may mention Oncidium macranthum and O. concolor. No one acquainted with the habit of these two species would think of potting them similarly. The pretty little self-coloured kind would not need anything like so large a pot or so rough a compost as its stronger-growing and vigorous-rooted compeer. Then the O. Marshallianum and nearly allied kinds come almost intermediate between these types. They cannot take hold of a large body of rough compost like the strong-rooted macranthum, on the one hand, but on the other the rhizomes are more given to extension than those of the tufted growers like O. concolor. This sorting of the different kinds and allowing each its proper stamp of receptacle and quantity of compost, has an important bearing on the well-being of the plants.

Masdevallias, as a genus, do not like a large body of material about the roots; they must have enough to keep them moist all the year round, and room for the little twining roots to get a hold, but anything beyond this is superfluous, not to say harmful. Quite a different stamp of root is that produced by Disas. These like more room, and a very rough material, that air can enter and leave freely, and which also takes up plenty of moisture, and does not part with it too readily. Lycastes do not produce large roots, but they are very persistent, and will push through a quantity and quality of compost that would kill many of the more sensitive kinds.

Then, again, as to the time of repotting; this varies almost as much as the other points referred to. Many of the Odontoglossums do not produce a root until the growths are quite half formed; then as the plant requires more nourishment to swell up the pseudo-bulbs, these are emitted to forage for it. To anticipate this flush of young roots, which occurs more or less with every Orchid, and to repot just in time for them to have the advantage of the new material, is sound practice, and bound to be productive of good results.

It will be noticed that with the plants referred to the roots usually appear in autumn, and the present is therefore a good time for a look round the majority of dwarf-growing cool house kinds. The peat and moss used for them should be of the best quality obtainable, all sand and earth being removed from the former, and any foreign substance, such as grass and small sticks, picked out carefully from the latter. The mode of potting is not exactly the same with all species, but cleanliness of material and pot, good drainage, and a neat tidy finish are points always needing attention.

The summer treatment of the cool house, as mentioned above, consists in keeping it as cool and airy as possible, without causing a dry or draughty atmosphere. The inside of this structure in the hottest weather should always feel agreeably cooler than the external air, or something is wrong. This is a far better test than running to the thermometer, and keeping this at just some stated figure. The winter treatment must be to carefully regulate the temperature according to outside climatic conditions, to have the glass as clean as possible by frequent mopping down outside and sponging inside, and to keep the heads of all the plants as near the glass as possible. I hope to refer to some of the principal cool house kinds in greater detail shortly.—H. R. R.

FIG. 46.—SACCOLABIUM BELLINUM.

TRAINING FRUIT TREES.

I HOPE many of your correspondents will follow the suggestion of "H. D." (page 260), and let us have this matter thoroughly ventilated, not only with regard to the present deplorable condition of so many trees, but also to see if we cannot do something to improve this important brauch of gardening. I do not record my vote with your correspondents who attribute the decadence of fruit management to increased floral and plant decorations, as the men to whom this work is entrusted seldom have anything to do with outside work, any more than the labourers are called upon to take an active part in the growing of plants under glass. I make bold to say that men, and not means, have more to answer for in the matter of failures in fruit growing than have plant and floral decorations.

In reference to the commercial picture drawn by "An Old Provincial," I take it as a matter of regret that there are not more noblemen and others who prefer to get as much out of the land as possible in preference to letting it go practically out of cultivation. Why a nobleman should make any secret of starting an emporium I cannot see. I look upon him as a public benefactor, for he not only benefits himself, but the consumer and the labourer. What is more fitting than that

landowners with capital should put it into their own land? Deep and thorough cultivation is a good investment, from which themselves and others derive benefit.

We hear of enormous sums of money going from this country for produce, some of which at least can be produced equally well at home, and those who try to encourage home industries are worthy of the gratitude of all classes. Gardens, I take it, are to a large extent luxuries, and if an owner finds it necessary to reduce the expense of his garden, before dismissing the men, would try selling at least the surplus produce, his garden would still give him satisfaction and the labourer not be deprived of his employment. This selling business opens up such possibilities that I have wandered somewhat from the subject; but now for a practical suggestion.

Let Peach trees be pruned directly the fruit is gathered. Cut out all weak and unhealthy wood. Make no mistake on this point. Cut to wood that is able to mature a crop. We should have finer fruit and heavier crops if half the wood that is generally left in trees for bearing was removed at the right time. Apricots, Plums, and Pears should have the spurs well shortened back, old and unhealthy spurs cut out, and strong young wood laid in where there is room for it. This work ought to be done before the leaves fall.

I now pass to the roots, and here I think lies the cause of many failures. It is no use expecting profitable crops of fruit if the roots are deep in subsoil. They must be under control and where they can have nourishment. Those who have still model trees of our forefathers would do well to try lifting. Take one side of the tree; throw out a trench 3 feet deep, and work all the soil from about the roots, and prune damaged ends. If the soil at the bottom is very bad it can be wheeled to the refuse heap; it will be useful to bank up the fire. Return the best soil, mixing charred refuse and mortar rubbish with it, making the whole firm. Lay the roots near the surface and mulch; this with another mulching in May, a good wash once or twice with a good engine during the growing season, and a watering any time of the year that men can be spared, will improve the quality and quantity of our wall fruits.

Most gardeners are short-handed, I know, but do we not sometimes give too much time to the November Queen? Does it not take a long time to pull out those stiff and damaged petals, and to place those small stakes to prevent the "Mums" breaking their necks? How would it be to say to some in this department, "That will do, get on, I want you outside for a change?" Those who have real interest in gardening would welcome the change. Then, with spade and fork, and an example from their chief, a great deal would be done to check the decadence of fruit culture.

In summer pruning, do not let a man start nailing unless you are satisfied that he will not tie in ten shoots where one only is required.

One more reference to decorations. What is more appreciated than good fruit? It is as much admired as any floral display, and takes as prominent a place on the table as any decorations.—S. B. O.

What is the Jumble System?

I HAVE just fitted a new pen to my holder to compliment "Melton" upon the improved style of his latest contribution, "Training Fruit Trees." What a beautiful picture is presented to our mind's eye by the affectionate terms in which he writes of "E. D. S." He seems so grateful to him for coming to the rescue, that one is almost tempted to think the latter is a second edition of the former. I fully agree with both as to the necessity of training the shoots of fruit trees thinly. Keep them thinly disposed, is a maxim I have always preached, practised, and intend to continue.

It is bad form I know to quote too freely from an opponent's writings, but convenient to do so occasionally. Note this from the pen of "Melton." "I have not seen a man yet who has been able to train and attend to three or four branches, and to complete the work, in the same time as he would finish one." Well, let me add, that depends upon their length; if the three or four were very short, and the one very long, the feat might be easily accomplished. It is not the mere nailing up of the branches that takes the time in training trees, but the perpetual pulling, twisting, and straining necessary to get them perfectly straight. In order to do this extra nails and shreds are often required, yet the less used the better for the health of the trees. Let us take, for example, two Peach trees of equal size; all good growers would leave the shoots from 6 to 9 inches apart, according to the size of the wood. Now let us suppose that two gardeners, equally expert at their own particular style of training, begin to nail the trees at the same time, the object of each being to dispose the bearing wood as evenly as possible over the surface of the wall; but one must train every branch perfectly straight, "in the style of the old masters," while the other does not mind a few bends, slight curves in a shoot, so long as the general outline of each is fairly correct. Which of the two would finish their tree first? Is there a single reader of "our Journal" bold enough to say the disciple of the "old maters" would? If there is, I should like to nail a tree against time with him.

While taking a pleasant walk in connection with my daily work I recently saw a fisherman skimming the surface water of a lovely river. I watched, and found that he "skimmed" for a purpose, that he was throwing a bait. After a while I heard a splash, the line run out, and soon the beaming fisherman landed a monster pike. I went a little farther. Another follower of "Walton" sat upon the river bank; beside him were two rods and lines with well-baited hooks attached. "Much sport to-day, my friend?" I inquired, as usual. "Only them two little 'uns, after two hours' fishing," was the reply. This man fished deep in the waters, and got little for his pains, while the "skimmer of the surface" obtained a fine reward.

"Melton" has tried to show how many and far reaching are the causes which have led to a change, if not decadence, in the training of wall trees, yet he has practically arrived at the same conclusion as I—who according to the sage from the hunting centre—have been "merely skimming the surface." The gist of his argument as well as mine on this point is, that the change has been brought about by the pressure of work in other directions, though the pressure may be felt in different ways in each particular place. Still we have much to be thankful for. Fruit is grown as well—nay, better than ever it was—how then can the "glory of our garden walls be departed?"

Yes, I am thankful to know that at least one old gardener is induced to think that I know just enough to be able to train a tree properly, notwithstanding my preference for fine fruit instead of straight barren branches. If I have not planted and trained the same set of trees for a period of twenty years, I have done the work from start to finish, until the trees have covered their allotted space. I have also done something which I consider far more creditable - viz., taken charge of old trees which have not borne a crop for years, and brought them into a fruitful condition, by cutting out some of the old branches, and training in the—to some—horrible side shoots. The many years I had charge of the trees which caught the eye and took the fancy of the "guiding spirit" were quite numerous enough to spoil them, and if I did not train them from their infancy I did train many others in the same garden, which to-day stand as monuments to the soundness of their early training.

Now let us note the eleventh paragraph on page 283. "Melton" is a little too previous in assuming he has placed me on the "horns of a dilemma." The trees I wrote of as having caught the eye of the "guiding spirit" were Morello Cherries, and every gardener knows that they produce wood so freely over the entire surface of the tree, that no matter whether they are trained well, badly, or not trained at all, they will bear good crops if the cultivator will thin the shoots a little. All trees, however well managed and trained, are liable to lose some of their branches; then, as I have pointed out before, a gardener has to choose between long inside branches or having blank spaces on his walls, as the rightly placed shoot is not often obtained. "The best trained and managed trees and Vines remain productive the longest, do they?" Who has not heard of the Penrhyn Vines with their "faggots of wood?" and who, I ask, does not covet the grand Grapes they produce?

Yes, I have seen cordon Pears roped with fruit, and I have seen a good many others which have not for years borne a good crop, though in each case they were under the management of good fruit growers. If I had unfruitful ones of this description to deal with I would lift and replant them, and if that failed train-in the much-despised side branches. A few days ago I accepted a long-standing invitation to visit the noted and extensive garden of an earl. The genial gardener is one who has made a name in the horticultural world, and intends to maintain his reputation as a fruit grower. Of course, I noted carefully the condition of the fruit trees, especially as the chief had a sound training in tree manipulation in the best Scottish gardens. He prides himself on well trained trees, as long as they are fruitful; but he has seen the advantage of breaking away from the old mathematical style. Here is a case to the point: One high wall was planted with Pears considerably more than twenty years ago—the training adopted was the horizontal style. All went well till the trees had no room for extension, then they gradually decreased in fruitfulness. The next move was to remove every alternate branch and train-in side shoots at regular intervals. The result of this departure was so satisfactory that others have since been treated in the same way.

Many other similar instances may be met with in various parts of the country; in fact, whether "Melton" knows it or not, gardeners as a body will never again keep closely to the mathematical style of training adopted by their forefathers. The system has been tried in the balance and found wanting, and since the generation or two ago, when changes in this direction were beginning to be made, good crops of fine fruit have gradually become more plentiful, but the full advantage of this change in training will be seen in the years to come. I wonder what "A Traveller" and "Invicta" are doing? Have they employed "Melton" to extricate them from an untenable position?—H. D.

THE ONION CROP.

THIS will, in the majority of instances, have been stored by this time, and judging from my own experience, and from that of others in the neighbourhood, the yield has been a thoroughly satisfactory one. The bulbs, though not exceptionally large, are clean, firm, and well ripened. A few weeks ago, when wet weather prevailed, many cultivators were sorely puzzled about what to do with their Onions, as experience had taught them that if wet weather continue for a long period, many of the bulbs will split and begin to grow again at a time when they should be ripening and becoming firm, conditions absolutely necessary for good keeping. Just in the nick of time, however, the weather changed, and instead of sunless days we were blessed with bright drying ones.

Fortunately I took the first opportunity of having our crop pulled up, and the bulbs turned with their roots facing the sun. With a little further attention in the way of turning the bulbs occasionally, thanks to the settled weather, the ripening process was soon completed, and the "Onion loft" is now groaning with the weight of a bountiful crop. At one time I took a great pride in growing a few rows of large specimens, simply for the sake of having the satisfaction of pointing to a few great ones, but I found they were not appreciated in the kitchen. A large supply is wanted, but the cry is always for small Onions, which are as useful for flavouring and making up into a variety of dainty dishes. This year I therefore left about half the crop unthinned, so there is no lack of "picklers," and others of still smaller size to suit the wants of the most fastidious chef.

In these times of depression in agriculture, and to some extent in market gardening, many might do worse than seriously turn their attention to the culture of Onions on a large scale, especially to the production of "picklers." A wonderful yield could be obtained from a single acre with little outlay in cultural operations. A medium or rather light soil would answer the purpose well. There is plenty of such land to be had cheaply enough. For many crops it would require to be heavily manured; for this one a heavy dressing of soot would suffice, as a rather poor soil is a great aid to the production of small firm bulbs. Deep digging should be practised, however, to enable the young plants to withstand drought. Land cleared of late Broccoli would answer admirably, as the seed need not be sown till the first week in May; the Onion crop could then be cleared soon enough to plant Cabbage in September. This would introduce a crop rotation to keep the land constantly going, and in great contrast to much of it at the present day.

I have tried the plan of sowing the seed broadcast, but do not like it on account of the difficulty of keeping down weeds. If it is sown in drills 8 inches apart, there is plenty of room for the development of both tops and bulbs, as well as for hoeing between the rows. Some will perhaps think Onions grown in the way indicated a risky undertaking, owing to the serious consequence a bad attack of maggot might have. This season we have certainly been very free from it, and under no circumstances do I think it would seriously injure the crops if the plentiful use of soot is persistently indulged in. This, as I have previously stated, should be freely worked into the land before sowing takes place. As soon as the seedlings are clearly visible, another dressing ought to be given in showery weather, to be followed by others till the dangerous stage is passed.

I have never known this plan fail, though I have seen it tried in many districts where maggots were causing disaster around, and I have heard some maintain that soot is not effectual with them; but I think, in such instances, it is generally a case of "letting the horse out of the stable before the door is locked." With a population increasing by leaps and bounds, it behoves Britishers to look to the requirements of the future, instead of calculating only upon the present demand, and those who are fortunate enough to see the farthest are likely to reap the greatest reward.—KITCHEN GARDENER.

EXCELLENCE IN PEAR CULTURE.

THE success of Mr. Kean (F. Williams, Esq.'s, intelligent gardener at Watchbury, Barford) in the Pear classes at the Birmingham Chrysanthemum Show last year caused me to make a mental note to endeavour to see his fruit on the trees another season. Having received a hearty invitation to do so, I thought I might venture to take the trip on that labour-saving wonder, the modern "bike." I felt it was a rather risky undertaking for one so old and grey as "H. D.," but then I remembered that the roads were good, and so screwed up my courage to make a bold venture on a very substantial "Safety," fitted with a powerful brake. I reached the pretty village of Barford after the expenditure of perhaps a good deal of unnecessary force. I am not sure that the pace was great, or that I steered a very straight course, still I got there, and found my friend, Mr. R. Jones, ready to bear me company in search of productive trees and gigantic Pears.

Under the guidance of Mr. Kean we soon found plenty of both, and in a short time I was thoroughly convinced that I might go a long way before meeting with an equally good collection of really fruitful Pear trees, in which good culture and well selected varieties show clearly what grand Pears can be grown in the heart of England. In a large garden the high brick walls were entirely covered with Pear trees, and I do not remember seeing a single blank space.

Around the sides of the walks pyramids are planted at good distances apart. One vigorous pyramid was carrying a very heavy crop of that fine stewing Pear Bellissime d'Hiver, a crop which, if judged by its market value, must be an extremely remunerative one. Léon Le Clerc de Laval, on the wall, also had a heavy crop. Catillac, though rather a thin crop, was represented by fruits of great size. General Todleben was also conspicuous by reason of the size of the long fruits—large enough, in all conscience, to serve as a feast for a giant. Beurré Bachelier, Beurré Clairgeau, Gansel's Bergamot, Durondeau, Glou Morçeau, Thompson's, Passe Colmar, were in good condition, the fruits being clean, and the crops varying from fair to heavy.

Upon specimens of Souvenir du Congrès and Pitmaston Duchess the highest praise must, however, be bestowed. These were grand in every way, the size being wonderful, and the absence of speck or blemish particularly noticeable. Mr. Kean has good reason to be proud of his fruit as well as the fine condition of the trees.

Now for a word about the training. It is done well, but not quite in the style of the old masters, for wherever a vacant space occurs a shoot is trained in to fill it. If a well placed one can be had so much the better, if not, the nearest one is selected, without waiting for it to appear in the precise place in which a Meltonian must have it.—H. D.

COTONEASTERS.

LIKE many other ornamental fruiting shrubs, the Cotoneasters are now at their best, and it may not be out of place to draw attention to a few of the most noteworthy for general garden work. Roughly speaking, they may be divided into two groups—"evergreen" and "deciduous." The former we will deal with first.

Among tall-growing ones we find C. buxifolia, C. Simonsi, and C. rotundifolia, all good growing and free-fruiting species. C. buxifolia, as the name implies, has foliage resembling, to a certain degree, that of the common Box. The leaves are about the same size as those of the Box—olive green above, whitish (from the presence of a quantity of silky hairs) underneath. The fruits are bright red, and produced one or two together from short secondary branches or spurs on the old wood. It is a dense grower, and if allowed perfect freedom will in a few years make a perfect thicket. It is a native of the temperate Himalayas.

In habit, C. rotundifolia resembles the preceding to a great extent; the leaves, however, are rounder and slightly larger. The fruit is very similar to that of the former. C. Simonsi is one of the most common species, and well known in most gardens. It is of more upright habit, and is not so dense as the two before mentioned. Like them, though, it is a Himalayan plant. The fruit is orange and red, and produced in abundance.

Of dwarf growing evergreen species we have C. thymifolia, C. horizontalis, C. microphylla, and C. microphylla gracilis among the most distinct and useful. All are from the temperate Himalayas. C. microphylla is often seen trained to walls or growing on rockeries. It adapts itself well to this kind of treatment, for, when planted in good ground, it grows quickly and soon covers a good sized space. Grown either way, the small, pretty foliage and red fruit make a very pleasing sight during autumn and winter. C. thymifolia does not appear to fruit so freely as some of the others, but it is worth growing for its usefulness as an evergreen. Its small Thyme-like leaves are very distinct, and the plant makes a good one for rockery or border.

C. horizontalis appears to be a connecting link between the evergreen and deciduous, for although the leaves fall before the new ones appear they are usually retained until early spring. It is one of the prettiest of the dwarf section, whether in or out of fruit. The leaves are about a quarter of an inch across, deep green and glossy; before falling they usually turn to a pretty orange red. The bright red fruit is produced erect on the branches, and peeping out from among the bright green foliage looks charming. It is seldom seen more than 1 to 1½ foot in height, but branches and widens quickly. It is a very suitable plant for covering a bank or growing on rockwork.

Of the deciduous species the following may be taken as the best—C. frigida, C. vulgaris, C. laxiflora, C. pannosa, C. bacillaris, and C. bacillaris floribunda. Taken from a fruiting point of view only, the Himalayan C. frigida is by far the most beautiful that has been mentioned. It makes a large spreading bush 10 or 12 feet or more in height, and produces with great freedom large drooping heads of scarlet fruit. C. vulgaris, or as it is now called C. integerrima, is the only one found in the British Isles, being occasionally met with in the neighbourhood of Llandudno. The fruit of this is black. C. bacillaris is a tall, coarse growing Himalayan plant. It is well adapted for growing in plantations where it can have plenty of room. It fruits freely, the fruit being dark purple, almost black. C. bacillaris floribunda is an improvement on the type. It is not so coarse growing, produces more fruit, and shows it off to better advantage. C. laxiflora and C. pannosa are grown more for the sake of their flowers than fruit. Both have a light and graceful habit, and produce their white star-shaped flowers in great profusion. The home of the former is Siberia, and of the latter Yunnan.

Given a light, sandy loam and sunny position, a selection of the best of these shrubs will be found to be a useful and interesting acquisition to any garden.—KEWITE.

Notes & Gleanings

EDITORIAL NOTICE.—It is particularly desired that all communications, parcels, catalogues, and newspapers intended for the EDITOR, be sent direct to 8, ROSE HILL ROAD, WANDSWORTH, S.W.

—— WEATHER IN LONDON.—Comparatively little rain has fallen during the past week in the Metropolis. On Saturday night there were a few local showers, but Sunday was fine throughout the day, as was Monday. On Tuesday there was a steady rain for about a couple of hours in the morning. but the rest of the day was dry, though dull, a slight mist coming up towards night. At the time of going to press on Wednesday it was fine.

—— THE WILL OF THE LATE MR. CHAS. SHARPE.—By his will of the 4th April, 1895, with a codicil of the 4th February, 1897, Mr. Charles Sharpe, of The Pines, Sleaford, J.P., and of Charles Sharpe and Co. (Ltd.), seed growers, who died on the 8th March last, aged fifty-seven years, leaving personal estate valued at £73,664 4s. 11d., appointed as executors his wife, Mrs. Elizabeth Sharpe, and his son-in-law Augustus Leverton Jessopp, of Leasingham. He desired, but without imposing any obligation on the trustees, that his Heckington property should remain, as he had applied it, for the purpose of allotments and small holdings.

—— A BUSH WISTARIA.—One of the oddest things I saw when visiting Bicton Gardens recently was a bush Wistaria. The growth in its early and ductile days had been wound round and round a stout stake or other support, until now the stem resembles the coils of a serpent, as sometimes presented in pictures or in statuary. The coils were quite close together, and showed how facile for such forms of training the growths of the Wistaria are. The head is a dense mass of spurs, being every year hard pruned or cut back, and in its season it is also a mass of bloom. It is strange that this beautiful flowering plant has not been more largely grown in this way, for it is easily kept compact, and as it spurs so freely soon makes a massive head, which in due season blooms profusely.—D.

—— THE FRUIT FLAVOUR PRIZES.—"A Country Gardener" informs me that in relation to these prizes no less than sixteen!!! exhibitors competed during six months last year. Really, I must say, as was once said of the five Barley loaves and two small fishes, "But what are they amongst so many?" I apologise for being wrong with reference to Kerry Pippin, but "A Country Gardener" admits that it had not previously to the meeting on October 17th received an award. That was just what I meant to convey. Last year Ribston Pippin came out badly. This season it has already taken first place with very handsome and finely flavoured fruits from Syon House. I hope to see other good standard varieties coming to the front later on.—D.

—— KALES AT CHISWICK.—In a few weeks the Fruit Committee will, I learn, have to examine a large collection of Kales, now growing in the R.H.S.'s Gardens at Chiswick, and growing, too, very luxuriantly. It will constitute a very interesting meeting, because apparently every known, and perhaps unknown, variety of Kale seems to be found in the collection. The trial should have exceeding interest for Scotsmen, as the northern men are credited with a high appreciation for Kale, although they usually spell it Kail. An odd feature is seen in the exceeding luxuriance in growth of the many, and of almost extermination of the few. Those are of the deliciously tender (when cooked) Breda section; they have been almost eaten up to extinction by some interesting but destructive fungus, yet have left the broad-leaved thousand-headed forms unharmed. No doubt there has been from time to time a good deal of intercrossing of Kales, Cabbages, and Savoys, hence the odd forms found in the collection. If the Committee had samples cooked to taste their duty would be indeed an onerous one; but, probably, whilst testing boiled Potatoes, will leave the Kales severely alone. These, it is of traditional averrance, are never fit to eat until well baptised with sharp white frost. In any case we do know for certain that they never eat so tender or so sweet as when partaken of during severe weather. Kales or their wonderful variety, apart from all other members of the Brassica family, serve to show the variations of which B. oleracea is capable. When, however, every other variety of every other section is added, then indeed is the product almost marvellous.—A.

—— SWEET PEAS.—The correspondent who asks for a report of these may like to know that we have found Eckford's by far the best. The only American one that is superior is that named "Blanche Burpee."—F. W. B.

—— UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—The annual dinner of the above Institution will be held at the Holborn Restaurant, on Tuesday, October 12th, at 6 for 6.30 P.M. Mr. H. B. May will preside at this, the eleventh meeting, and it is to be hoped the gathering will be a great success. Tickets may be obtained from Mr. W. Collins, 9, Martindale Road, Balham, S.W.

—— LASIANDRA MACRANTHUM.—Perhaps better known under its old name of Pleroma macranthum, this is a welcome addition to the few greenhouse plants in bloom at this season. The flowers, which are of a beautiful deep violet-purple colour, are freely produced at the ends of the shoots in branchlets, and although the flowers only last about twenty-four hours, new ones open every day, and the flowering season continues through several weeks. From cuttings inserted in April we have now nice bushy plants in 6-inch pots, but to grow this plant most successfully, says a writer in an American contemporary, it requires to be kept two or three years and trained on a wall or tied to some wires on the side of a cool house. With a fair amount of root space under such conditions it blooms for a long time and commands attention from all who see it. Lasiandras are of the easiest possible cultivation. They are not seen in many places, probably owing to the short-lived nature of their flowers and the fact that they have no value for cutting.

—— WHO SPLICED THE GRAPES AT THE CRYSTAL PALACE?—I had not the least intention to take part in the controversy that has arisen over this very unpleasant matter, until invited by the exhibitor in question to kindly look into his garden and see what Grapes he had, and how far it could have been needed on his part to attempt to patch bunches with intent to deceive. I saw these, and many bunches had been cut in the interval—plenty of fine bunches that needed no packing, and I thought, with all due deference to some of his critics, afforded ample evidence that no effort on his part to deceive was required. At the time the bunches were boarded ready for showing, the exhibitor himself was engaged in preparing the dessert in the house for a dinner party, and his foreman was at Shrewsbury. Therefore he had to trust to one of his young men, with the help of a labourer, the duty of preparing the Grapes, and it seems in so doing shoulders were broken off through improper handling, and being afraid of a severe reprimand, the shoulders were surreptitiously tied on, then boxed, ere the exhibitor was at liberty. Next morning, having over sixty entries to stage, the fruit was left to the foreman, who had during the night got back from Shrewsbury, naturally very tired, and who knowing nothing saw nothing, and the exhibitor was himself absolutely ignorant of anything wrong until his attention was drawn to the matter on the second day. The assistant did not realise the harm he was doing, because if he had at once told of the disaster, other bunches could have been cut to replace the damaged ones.—A. D.

—— DEATH OF MR. HENRY READER WILLIAMS, J.P.—It is with much regret that we have to record the death of the above named gentleman, which occurred at his residence, The Priory, Hornsey, on Monday morning last. The deceased gentleman was the head of the great firm of wine merchants, Messrs. H. R. Williams & Co. of Lime Street, City. He was a most benevolent man, and for many years closely associated with the late Lord Shaftesbury in works of temperance and charity. Mr. Williams made the chief object of his lifetime the furthering of the work of the King Edward Ragged School, and has been instrumental in supporting, clothing, and educating hundreds of homeless and destitute children, who were trained to occupy useful positions in life. He was the first Chairman of the Hornsey School Board, and was for many years Chairman of the Local Board. In commemoration of his work on the School Board two scholarships available for Hornsey children were founded, and when he resigned the Chairmanship of the Local Board a handsome clock tower was erected by the inhabitants of Hornsey in the Broadway, Crouch End, as a testimony to his public work. Mr. Williams was twice Master of the Worshipful Company of Fruiterers, and in 1889 offered a prize of 25 guineas, to which his friend, the late Dr. Hogg, added a gold medal, for the best essay on "Profitable Fruit-growing for Cottagers and Others with Small Holdings." A copy of this work was graciously accepted by Her Majesty, with a present of fruit from the memorable Guildhall Show in 1890, of which Mr. Williams was an active supporter. He was esteemed by all who knew him, and his death will be widely and deeply mourned. The deceased gentleman was seventy-five years of age.

—— TROPÆOLUM SPECIOSUM.—Your correspondent's note on the above, in last week's Journal, reminds me of a beautiful sight I saw in the flower gardens at Chillingham Castle in the month of August. Two Yew hedges, running parallel with the whole length of the garden, were a perfect mass of scarlet. A few plants had found their way, by accident or otherwise, to the roots of the hedges, and Mr. Henderson last year increased these, and covered the whole length, with the above beautiful result. The fine old wall bounding the garden on the western side had also some masses on wire supports of the same beautiful climber, which, viewed from the terraces above, have a fine effect.—T. H. BOLTON.

—— DAVALLIA FIJIENSIS.—A few weeks ago, on a Saturday afternoon, whilst working in a fernery of which I have the charge, I had occasion to get up to a large hanging basket, containing a plant of Davallia fijiensis, which at this time of the year is usually thickly covered with a yellowish-looking powder. I was perspiring rather freely at the time, and happened quite unsuspectingly to brush my face with the large overhanging fronds; in a few seconds my face was smarting so acutely that for quite an hour I could scarcely open my eyes, after which the pain went gradually. A few days later in my hurry I unthinkingly did the same thing again, with similar results, which quite convinced me as to the peculiar nature of the plant under notice. Since that time, when watering or working in the vicinity of the Davallia, I always keep my face at a distance from the fronds. As I was unaware beforehand that the Davallias had any poisonous properties, I was totally unprepared for the disagreeable surprise I received. I should like to know if any of the Journal readers have had a similar experience to the above. —JOURNEYMAN.

—— SUGAR FROM POTATOES.—Even as Beet sugar has to a great extent replaced Cane sugar and turned the industry upside down in the process, so, it appears, may Potato sugar eclipse Beet sugar and again upset the trade. A Dutch correspondent states in the "Westminster Gazette" that Dr. H. C Prinzen Geerlings, Director of the Proof-station in Kagok-tegal (Java), formerly of the University of Amsterdam, and many years assistant in the chemical laboratory of that University, has discovered a simple method of converting the starch of Potatoes into sugar. He has sent in a sealed envelope, as is customary, the description of his method to the French Académie des Sciences; this to secure the priority of his invention, as his discovery is not yet quite at the stage for being made public. Dr. Prinzen Geerlings has so much official business upon his hands that some months may elapse before he can prepare the discovery for publication. Starch-producing plants are much less liable to climatic influences than sugar-producing vegetables, and with regard to the sugar industry, the only question is to find the means for converting on a big scale, and at small cost, so that the method may take the place of the manufacture of sugar from Cane or Beet. If this can be done there is one of the biggest economical revolutions in sight.

—— THE ROSE OF JERICHO.—The plant commonly known as the Rose of Jericho is Anastatica hierochuntica, *L.*, and that it has borne that name for centuries is proved by the fact that it is figured and described as such by nearly all the early herbalists. Lonitzer (Lonicera), the first edition of whose "Kreuterbuch" appeared in the middle of the sixteenth century, writes of it as a well known foreign herb. bearing the names Rosen von Hiericho, Rosa Hierichuntis, Rosa S. Mariæ, and Rosa Hierosolimitana. Several other sixteenth century authors write more fully on it. But it is now claimed that Asteriscus pygmæus, *Coss. et Dur.* (Compositæ), is the true Rose of Jericho. The Abbé Michon, who accompanied De Saulcy on his travels in the East, describes ("Voyage Religieux en Orient," vol. ii., page 383) a plant under the name of Saulcya Hierochuntica, which he regarded as the true Rose of Jericho of the pilgrims of the Middle Ages, because it is introduced into the arms of several French noble families. Boissier ("Flora Orientalis," iii., page 179) identified Saulcya with Asteriscus, and cites Michon's opinion as to its being the true Rose of Jericho. Here the matter rested apparently until 1882, when Dr. P. Ascherson brought the subject before the Botanischen Vereins der Provinz Brandenburg ("Verhandlungen," xxiii., page 44). More recently (1886) Dr. G. Schweinfurth has written on "La Vraie Rose de Jericho" ("Bull. de l'Inst. Egypt.," 2me séries, n. 6, pages 92–96), where, according to Just ("Bot. Jahresber.," 1886, 2, page 196), he recognises Asteriscus pygmæus as the plant. This covers a wider geographical area than the Anastatica, ranging from Algeria to Baluchistan, and it is very abundant in the neighbourhood of Jericho. In Asteriscus it is the involucral leaves especially that are hygroscopic, being closely incurved over the fruit in a dry state, and quickly opening out to an almost horizontal position under the influence of moisture.—("Kew Bulletin.")

—— THE DEVON AND EXETER GARDENERS' ASSOCIATION.—The autumn programme of this Society, which holds its meetings in the Council Chamber of the Guildhall, Exeter, on Wednesdays at eight o'clock prompt, is as follows:—October 13th, Mr. J. Mayne, Bicton, "The Qualifications and Duties of a Gardener." October 27th, Mr. R. Hodder, Ponsonby, Torquay, "How a Knowledge of Botany is a Help to Gardening." November 10th, Mr. T. H. Slade, Poltimore Park, "Pruning and the General Management of Fruit Trees." November 24th, Mr. W. Andrews, Elmfield, Exeter, "Herbs: Their Cultivation and their Uses." December 8th, Mr. G. Camp, Culver Gardens, Exeter, "Winter-flowering and Foliage Begonias." December 22nd, Papers by the juniors.

—— DAMSONS.- I paid 4d. per lb. for these fruits in one of our Kingston shops recently, apparently Farleigh Prolific. That is a price to make one's mouth to water, and how much growers would like to get one-half. As good Damsons range to about 60 lbs. per bushel, the price is 20s. for the latter quantity. It would be interesting to learn what Damsons are just now really fetching in the market, but certainly a long way below 20s. The disproportion between growers' wholesale and consumers' retail prices is out of all reason. No wonder we have what are termed gluts in some seasons, as it is impossible for the grower to get to the million the full benefit of his abundant crops. Our method of trading is so complicated that not one only, but half a dozen persons, must have their profits out of an article.—A. D.

—— FUCHSIAS AT EGHAM.—Several weeks since there was a complimentary note made in the *Journal of Horticulture* in reference to the remarkable display of Fuchsias and other plants which Mr. H. Paice, C.C., the well-known corn merchant, makes in his roadside garden in Egham. I passed that garden but a few days since, and was surprised to see how wonderfully the Fuchsias were still blooming. The arch of these plants leading from gate to door of house, a most unusual feature everywhere else, but seen here every summer, was a veritable bower of drooping flowers. The tall standards, that are some 6 to 8 feet in height, were blooming profusely still, so also were dwarfer ones, and also were standard Heliotropes. Some tall bushes of Calceolaria amplexicaulis, so very showy and effective grown on in this way from year to year, were blooming finely. Mr. Paice has indeed a remarkable front garden, and it is a distinct attraction to this ancient Surrey town.—WANDERER.

—— CAMPHOR CULTURE.—An account of the range, cultivation, uses, and products of the Camphor tree (Cinnamomum camphora) is given in a circular (No. 12) just distributed by the U.S. Department of Agriculture (Division of Botany). Notwithstanding the comparatively narrow limits of its natural environment, the Camphor tree grows well in cultivation under widely different conditions. It has become abundantly naturalised in Madagascar. It flourishes at Buenos Ayres. It thrives in Egypt, in the Canary Islands, in South-Eastern France, and in the San Joaquin Valley in California, where the summers are hot and dry. Large trees, at least 200 years old, are growing in the temple courts at Tokyo, where they are subject to a winter of seventy to eighty nights of frost, with an occasional minimum temperature as low as 12° to 16° Fahr. The conditions for really successful cultivation appear to be a minimum winter temperature not below 20° Fahr., 50 inches or more of rain during the warm growing season, and an abundance of plant food, rich in nitrogen. In the native forests in Formosa, Fukien, and Japan camphor is distilled almost exclusively from the wood of the trunks, roots, and larger branches. The work is performed by hand labour, and the methods employed seem rather crude. The Camphor trees are felled, and the trunk, larger limbs, and sometimes the roots, are cut into chips, which are placed in a wooden tub about 40 inches high and 20 inches in diameter at the base, tapering towards the top like an old-fashioned churn. The tub has a tight-fitting cover, which may be removed to put in the chips. A Bamboo tube extends from near the top of the tub into the condenser. This consists of two wooden tubs of different sizes, the larger one right side up, kept about two-thirds full of water from a continuous stream, which runs out of a hole in one side. The smaller one is inverted, with its edges below the water, forming an air-tight chamber. This air chamber is kept cool by the water falling on the top and running down over the sides. The upper part of the air chamber is sometimes filled with clean Rice straw, on which the camphor crystallises, while the oil drips down and collects on the surface of the water. In some cases the camphor and oil are allowed to collect together on the surface of the water, and are afterwards separated by filtration through Rice straw or by pressure. About twelve hours are required for distilling a tubful by this method. Then the chips are removed and dried for use in the furnace, and a new charge is put in. At the same time the camphor and oil are removed from the condenser. By this method 20 to 40 lbs. of chips are required for 1 lb. of crude camphor.—("Nature.")

THE MOSS ROSE.

How strangely Moss Roses have gone out of fashion. One meets them occasionally in cottage gardens, and in grander Rose gardens looking rather ashamed, poked into some corner probably, which the Upper Ten despise; but it is very rare to see a bed of them. And yet how distinct they are; how striking in foliage, especially the Crested Moss; above all, how fragrant! Here we have the true Provence odour. Now that garden Roses are shown, there is just a chance of their being recognised; there would be a far greater if the N.R.S. Committee would but decree a prize for them. I count fourteen varieties in the last Cheshunt catalogue. Surely that would enable a good box of "six distinct!"

It is one of our oldest Roses. Rivers tells us, in his excellent account of early Roses, that the Old Double Moss came here from Holland in 1596. He considers it "an accidental sport, or seminal variety, of the common Provence Rose"—the good old Cabbage, the Rosa centifolia. An interesting notice, in a recent number of "our Journal," gives its mythical origin, telling this in the pleasing form of an Eastern legend.

This has also been rehearsed in verses, the author of which I have never been able to discover; they are lines, I have always thought, of a high degree of merit.

The Angel of the Flowers one day
Beneath a Rose bush sleeping lay—
That Spirit to whom charge is giveu
To bathe young buds in dews from heaven.

Awaking from his light repose,
The Angel whispered to the Rose:
"Thou loveliest object of my care,
Still fairest found where all are fair,
In the sweet sleep thou'st given me
Ask what thou wilt—'tis granted thee!"

Then said the Rose, with deeper glow,
"On me another grace bestow!"
The Angel paused, in silent thought;
"What grace is there this flower has not?"

'Twas but a moment: o'er the Rose
A veil of moss the Angel throws.
Thus robed in Nature's simplest weed,
Can there a flower that Rose exceed?

—A. C.

GARDEN ROSES.

IN addition to the selection of garden Roses which was given on page 272, the following must be given. These, with those previously noted, may be taken as amongst the very best, though some have possibly been omitted whose beauty justifies their having a place.

HOMER.—A charming variety, which is blush, edged with deep rose. It is suitable for a low wall.

L'IDEAL.—Everyone knows the yellow and metallic red, shaded, streaked, and tinted golden yellow flowers of this exceedingly pretty and distinct variety.

MADAME PLANTIER.—Pure white, and flowering freely in clusters. This is very useful.

WILLIAM ALLEN RICHARDSON.—This is now too well known to require further description. It is undoubtedly one of the best of garden Roses for bushes, hedges, walls, or trellises. The deep orange yellow petals make a charming display.

MADAME CARNOT.—A charming seedling from the above. The colour is golden yellow, deeper in the centre, with a coppery edge.

ALLISTER STELLA GRAY.—Producing flowers in clusters like a Noisette, this is a favourite with many. It is somewhat similar to W. A. Richardson, but smaller, and quite distinct. It is a strong grower, and a desirable acquisition for pillars, or wherever a climbing Rose is wanted.

CARMINE PILLAR.—A new single flowering variety. The colour is vivid rosy carmine. The plant is profuse in blooming, and of strong growth.

DUKE OF YORK.—Belonging to the China section, this Rose is of much merit. In colour it is bright pink, shading to rosy scarlet. Sometimes the petals are edged and tipped white. The fragrant blooms are very freely produced.

DOMETIL BOCCARD.—One of the prettiest striped Roses in cultivation. Flesh white, with bright rose and lilac stripes, is the colour.

FÉLICITÉ PERPETUÉ.—This creamy white Rose is well known. It flowers in clusters, and is a charming evergreen variety.

MARQUIS OF SALISBURY.—The semi-double rich crimson flowers of this Rose are constantly produced. It is certainly one of the best.

MADAME PERNET DUCHER.—A most popular variety of a canary yellow, lightly tinted with cream colour. It is exceedingly beautiful in the bud.

TUSCANY.—Flowering in the summer, the deep crimson semi-double blooms are most brilliant. They are frequently 6 to 8 inches in diameter.

YORK AND LANCASTER.—No collection of garden Roses could be complete without this fine old variety. It is striped white and red. Occasionally all red or all white blooms are produced.

ANNA MARIA DE MONTRAVEL.—Very diminutive flowers of the purest white. A perfect Fairy Rose, finely perfumed.

GLOIRE DE POLYANTHA.—The colour of this is deep rose with a white base to the tiny petals.

JANET'S PRIDE.—A semi-double variety. White shaded and edged crimson lake, and striped light crimson.

CAMOENS.—One of the best. It is glowing rose colour, with yellow at the base of the petals. The buds are long and pointed, and it is very free flowering in the autumn.

DR. GRILL.—Rose coloured, with coppery shading; one of the best bedders.

MA CAPUCINE.—Buff and bright orange, charming with its small miniature buds.

MACRANTHA.—This is one of the finest single Roses in cultivation. Pure white with golden stamens, large and bold blooms.

MACARTNEY SIMPLE.—A large pure white variety with evergreen shining foliage.

RUGOSA.—Single carmine-crimson flowers, which are succeeded in autumn by bunches of large berries of rich coral-red colour.

RUBRIFOLIA.—This produces small dark red flowers, glaucous foliage. The leaflets are tinged with red.

Lord Penzance's Briars are extremely useful in the garden, and are destined to become great favourites. The variety of colouring, freedom of flowering, combined with their sweetness of perfume, cannot fail to make them popular when they become cheaper. Amongst the best are Rose Bradwardine, clear rose; Meg Merrilies, gorgeous crimson; Lucy Ashton, white, with pink edges; Lord Penzance, soft shade of fawn, passing to emerald yellow in the centre; Lady Penzance, a soft tint of copper, the base of each petal bright yellow; Flora M'Ivor, pure white, blushed with rose; Brenda, Maiden's Blush or Peach, and Catherine Seyton, soft rose pink with bright golden anthers.—E. MOLYNEUX.

HYDRANGEA PANICULATA.

THE sterile variety of this Hydrangea is perhaps better known than the type, and for all garden purposes it is without doubt the best. It is interesting, however, to grow the typical plant and the variety H. paniculata grandiflora, or, as it is now called in the "Kew Hand List of Trees and Shrubs," H. paniculata hortensis, side by side. The type will be found to be well worth growing, and is interesting to show at a glance the great difference between the two.

Growing under the same conditions the foliage of the typical plant will be found to be much better than that of the variety. In the former case the leaves range up to 9 inches in length, while those of the variety rarely exceed 7 inches. With the inflorescence the case is quite different, as that of the variety is larger in every way. The size of the flowers is determined by cultivation. A large bed near the Pagoda at Kew is planted with the type and variety, and they are there cultivated to a high degree.

This year the inflorescences of the type have been from 9 inches to 1 foot in length by 8 inches at the base, while many of those of the variety have been 1½ foot in length by a foot in width at the base. The bed was made up originally with good clayey loam, decayed leaves and cowdung, and has since been regularly top-dressed. The plants are pruned hard in spring, and the young growths are afterwards reduced to four, five, or six, according to the strength of the plant.—D.

ENDIVE AND LETTUCE FOR WINTER.

MANY modes of protecting these valuable salads during the winter months are adopted. Any old frames or pits will answer the purpose provided the roof glass is in good condition. This is a most important point, for if the lights are out of repair the rains will not be carried off, but will drip through on to the plants, which is most injurious to the occupants. The structures should be in some sheltered part of the garden, and must have a good depth of drainage beneath the sod, and a good layer of rough litter or leaves placed thereon, the latter to be well trodden to prevent the soil from running amongst the drainage. On this ought to be placed about 1 foot of soil, which must not be too rich, or the plants will grow too rapidly, and become more liable to injury by frost. On the other hand, the soil must not be poor or the plants will be stunted in growth, and become hard and tough, instead of being crisp and tender.

If the plants are ready to be lifted, the seeds having been sown about the first or second week in August, and have been transplanted from the seed bed on to a warm border, they can be carefully placed in their winter quarters. After planting they should be well watered, and be shaded from bright sunshine for a few days. After this gradually inure them to all the light and air possible; in fact the lights should be entirely removed, only replacing in frosty weather, or if rainy weather prevails. In the latter case the lights should be tilted back and front to admit abundance of air. Avoid planting too thickly; each one should be clear of its neighbour, otherwise they will be liable to damp.

Cultivators in the South may also secure a supply up to Christmas, or even later, by planting some out at the foot of a south wall. This is a decided advantage, as then it is not necessary to plant such a large quantity under glass. Various methods of blanching Endive are adopted—1, By placing inverted flower pots over the plants, and covering the hole at the bottom with a piece of slate; 2, by tying up with bass, which should always be performed when the plants are dry; and 3, by covering the whole plant with a common tile.—H. T. M.

HALTON.

A SIMPLE heading for an article is this, but it is one which is, from the horticultural aspect, instinct with material for the penman. All phases of gardening are carried out at Halton on a very wide scale—indeed, in some departments it somewhat resembles a market growing establishment, so enormous are its stocks of plants. The maintenance of such an estate in the best possible style is worthy the reputation of its owner, Alfred de Rothschild, Esq., whose interest in horticultural and kindred subjects is well known and appreciated by gardeners. This interest, it may be added, is not confined to this one member of the family, for Lord de Rothschild, of Tring; Baron Ferdinand de Rothschild, of Waddesden Manor; and Leopold de Rothschild, Esq., of Ascott, are also supporters of the craft. For confirmation of this one has but to visit the gardens of either of the residences mentioned, for each is distinguished for its excellences in some one or other department.

But beyond this these gentlemen to show how friendly they are to horticulture and horticulturists, and though not strictly in place in a few notes on Halton, the reference will, we hope, be pardoned. It is to their connection with the Gardeners' Royal Benevolent Institution that we would refer. For years their support has been constant, and has been afforded with that absence of ostentation which renders the most graceful act more graceful still. Now it is good news to know that the Hon. Walter de Rothschild has taken the trusteeship rendered vacant by the death of Dr. Hogg, while Lord de Rothschild is a vice-president of the Institution. They are men of wealth, but what is often even more important to a society of this nature, they are men of business, and their judgment of financial matters will be of the utmost value. The Society, largely owing to the untiring efforts of Mr. Harry J. Veitch and Mr. G. J. Ingram, has always been prosperous, but we hope that the Jubilee year will be the dawn of new era of greater brightness and wider usefulness than any the past has seen. Gardeners ought to know their duty in this direction, for they have been shown the Institution's usefulness times without number, but it is to be feared they do not all do it as it should be done.

But we must return to our proper subject now or we shall inevitably miss much that is worthy of being chronicled in the pages of the Journal. It is not the first time, nor, it is hoped, will it be the last, that references have been made to this beautiful home, but too much can never be said in the limits of two or three columns of type about such a garden. Then, with the aid of the camera, we can present different features that the pen could never paint, even in the most skilful hand—but of these pictures more will be said a little later, when in fact we reach them on our tour of inspection with Mr. R. C. Sanders, the gardener in chief. A quiet, unassuming man is our guide, but a thorough gardener. He has a responsible charge, and he looks after it to the best of his ability, and only a cursory glance is needed to show that his knowledge and perseverance are of the highest. Every possible thing seems to be done that will tend to the credit of the gentleman by whom he is employed, to the estate, or to himself.

On the occasion of a previous visit to Halton the journey was made *viâ* Euston and Tring, but acting on Mr. Sanders' advice the Baker Street and Wendover route was chosen this time. The change was a pleasant one, the earlier portion being interesting by reason of the laying of the new Central Railway, while further on some charming country was passed, affording fine views over hills and through fertile valleys. Detraining at Wendover, we found our host waiting, and were quickly making our way to our destination, not by the nearest road, but by one which took us over and round the hills. The major portion of the distance was traversed on the grass drives that are so abundant on the estate, and through the woods, with which the hill sides are clad. Magnificent vistas were enjoyed through the trees every now and again, one of them showing the mansion of Halton lying many scores of feet beneath. From there the house looked very handsome, and was apparently quite in a valley, but later in the day, when we were on the main road, a glimpse proved to us that it stood many feet above the normal level.

But the finest view obtained was one from a broad table land, overlooking the Vale of Aylesbury, with its fertile fields and winding streams. On the one hand was the town of Aylesbury, while on the other Tring could be seen, both several miles away. Carrying the eye right beyond the valley to the range of hills we could see the mansion of Waddesden, just the smallest bit of Mentmore and the position of Ascott was pointed out as in a big clump of trees. It was a most beautiful scene, at least for those eyes that admire the simple beauty of Nature. There were no rugged features observable—the panorama was one of trees, fields, streams, homesteads, here in clusters and there standing alone, with the towns named above, several churches, and on every side hills, which may as a whole be described as essentially English. The hill on which we stood was of chalk, which could be seen glistening through its crust of soil; in the valley, and occasionally on the hills, it was noticeable that the ground was of a different and far more fertile character. There was a descent by grass drives, but we chose a fresh road that took us outside the gates to re-enter again near the mansion.

On entering the park there was a notable change in the character of the surroundings. Here the trees and shrubs looked to have been better tended, and were growing in more congenial soil. Without the herbage in places had been scant, though in others it was singularly luxuriant. No pause was made now at the mansion, but our course was continued until the gardens were reached, where we alighted to perform the remainder of our tour on foot. Quickly making our way to the gardens, we were passing through house after house filled to overflowing with thousands of plants of almost all kinds and sizes such as are useful for house decoration. None was very large, such not being required, but all were healthy. However, we may give a brief paragraph to each of the departments ere turning to the pleasure grounds, the Italian garden, and the conservatory.

The number of plants grown in 6-inch and smaller pots is nothing short of stupendous, house after house being completely filled with them. Thousands of Crotons in a small state are to be seen, and as they are all young they have a pleasing fresh appearance, while the colour development is remarkable. Immediately one of these is observed to be past its best the top is taken off and inserted in cocoa-nut fibre refuse in a warm propagating pit, where new roots are quickly emitted and a young plant soon formed. Dracænas, especially Lindeni, are largely utilised for the same purpose, as are Caladiums, of which the collection is very fine. It is a matter for regret that these plants with their chastely hued and delicately veined leaves do not last longer in good condition when employed for decoration. Many of the Palms are much larger, but there are very few of any considerable size. Ferns, of course, come in for a goodly share of attention, for their graceful fronds could scarcely be dispensed with. There are other foliage plants, but these form the bulk of the stock, and the names of the others will readily occur to readers.

When mention is made of flowering plants under glass the place of honour must be accorded to the Carnations, of which something approaching 6000 are grown in pots. These comprise perpetual flowering varieties largely: but, as is well known, Malmaisons are by no means neglected. Unfortunately, these have the disease amongst them, and Mr. Sanders is wisely reducing the stock with a view to a fresh start with clean plants. The healthy condition of the others, both in houses and frames, is very marked indeed, and it is almost superfluous to say that flowers are always to be had. Brightly coloured varieties largely preponderate, as these are the favourites with Mr. Rothschild, whose admiration for Carnations is very decided. Anthuriums, with their scarlet spathes, are popular at Halton, and claim a large amount of space in the houses. Their showiness insures them a welcome in such bold and effective decorations as are carried out. Cannas, again, are there in numbers, as are many other plants of which specific mention need not be made.

Out of doors in the gardens in which the glass structures are situated there are many borders, and a few beds to be seen occupied with hardy flowers of much beauty. There are Gladioli, Asters, Sweet Peas, Zinnias, with several others that are useful for cutting. One of the most charming borders was a narrow one at the side of a house, it being full of Belladonna Lilies flowering superbly. Chrysanthemums must of course have a place, and that they are well grown is proved by their present condition. There are many of the dwarf early varieties in pots in flower in the houses, but of course the major portion of the plants are cultivated for later use, and were stood on a border outdoors when this visit was paid, presenting a handsome appearance. The wood and foliage were clean and healthy.

Though all kinds of fruits are to be seen under glass—that is to say, all that are commonly cultivated under these conditions, Figs and Cherries are the only two for which the owner has any decided partiality. Such being the case, the seasons of these are extended to the utmost, and of the former there are fruits during the majority of the months of the year. The conditions are not of the most favourable, but the results are very praiseworthy. The Cherry house is occupied with rather old trees trained on trellises beneath the roof glass on each side of a span-roofed structure, and these by careful attention annually produce splendid crops of fruit. Peaches and Nectarines, with Grapes and Melons, are all to be seen. The vineries are being thoroughly renovated in turn, new borders are to be formed for the reception of the roots, and it is confidently anticipated that in the course of a few years the Grapes will be better in appearance as well as in quality than they have for some years past. Although Tomatoes and Cucumbers are not usually considered under the head of fruits, they are now thus briefly referred to ere we turn our thoughts to the several things that have yet to be seen out of doors.

The large vegetable garden, with its broad grass walks, is extremely interesting to anyone with a predilection towards the examination of good

vegetables. Though of considerable size, almost every bit of ground is utilised to its utmost capacity, and the breadths of Asparagus, the various green and tap-rooted vegetables, Potatoes and Onions, are immense. Moreover, the whole of them are in capital condition – not large, but small to medium-sized, such as usually give the best quality. Then there are no weeds to be seen, so that the crops have the benefit of the food that the soil contains. In the enrichment of the ground, which varies according to the crop that is to be put in, both natural and artificial manures are employed. The fruit trees, which are numerous in this portion of the garden, are in splendid health, and, generally speaking, are carrying fair crops of fruit, though some trees are lighter than usual. Bush fruits are also largely grown. Wall fruit cannot be termed a particular feature at Halton, owing to the small lengths of wall available. Where fruits are grown thereon, they are in fine condition, and produce good crops.

We may now wend our way to the pleasure grounds about the mansion. These are charmingly diversified by the aid of trees, shrubs, undulating lawns, large borders, immense beds, with a lake of some considerable size. Around this is a broad grass drive broken here and there by shrubs

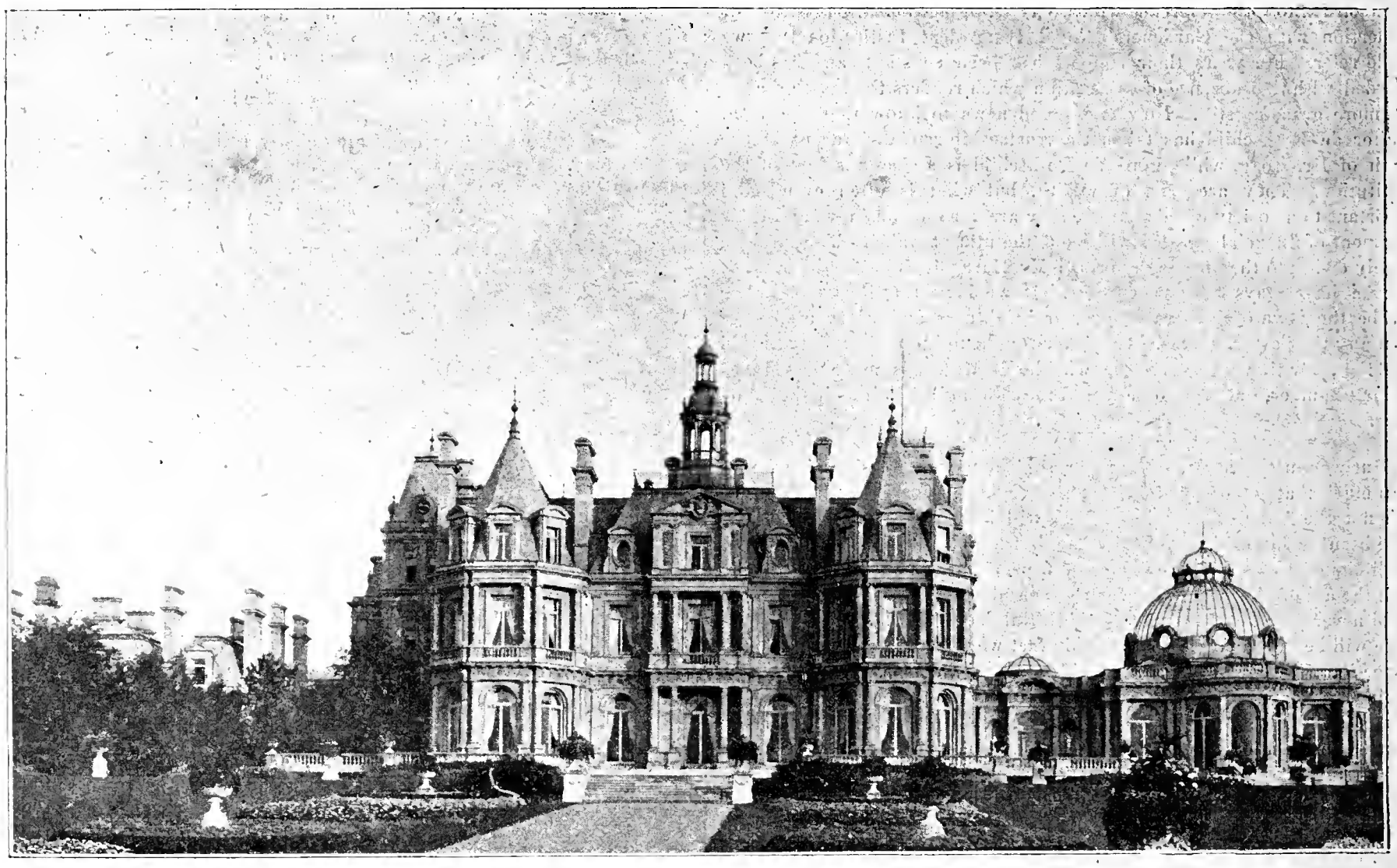

FIG. 47.—HALTON HOUSE.

or beds, and backed by shrubberies of great extent. At the head of the lake is a pleasant summer house ; indeed these structures are to be met with frequently all over the estate. Scores of fantail pigeons find a home in a cote near, and look very pretty strutting about the soft green grass or drinking from the lake. The area of grass that has to be mown is very large, and as some of the borders are narrow the work occupies several hands and many machines to keep it in the excellent condition that is so much desired. Something is constantly being done on it, and must be, or it would soon present an untidy appearance. A circular concrete bicycle track has been laid down close to the mansion, and looks rather peculiar in the turf at the first glance.

The flower gardens in contiguity to the mansion are brilliantly beautiful now, and have been for some considerable time. On each side of the path leading to the entrance of the house, and clearly shown in the photographic illustration (fig. 47), there are circular beds, while diverging on each side of the door along a terrace walk are beds of varying designs. Standing on this terrace the picture is one of singular beauty, though the planting is without exception of the simplest. One bed will be filled with Zonal Pelargoniums of one colour, and a second with another, the same practice being adopted with Begonias and Fuchsias ; occasional "dot" plants being used in some of them. Each bed contains a stone vase, and these, again, are planted in some simple yet effective manner. Handsome as are all the beds, the two, one on each side at the top of the walk on the terrace, are superior to all the others. Both are planted with a dwarf crimson-scarlet double tuberous-rooted Begonia named Lafayette, which for floriferousness and effectiveness, is, so far as I am aware, unrivalled. They are sheets of brilliance such as one seldom sees, but which are always certain of admiration.

In another portion of the garden a different style of planting is adopted. It is known as the German system of bedding, and appears to consist mainly in several bold masses of plants in one bed of immense size. It is a pleasing change from the ordinary styles of bedding, but such as I imagine one would quickly tire if much were seen. Then there is the Indian garden, with its Palms, Dracænas, and other plants that lend a sub-tropical tone, the whole being accentuated by the Indian tent which has been erected. The Italian garden was next visited, with its beautiful statues in porphyry and marble, encircled in an Ivy-clad wall. The centre grass plot contains only one large bed of mixed plants, and the formality is maintained throughout. The walk round is of mosaics on marble kerbs, and the steps are also of marble. It is pleasant to see, but one cannot but feel thankful that such is not the style of English gardening in this nineteenth century.

Everything is grand at Halton, and of all the conservatory shown to the right of fig 47 is the most imposing. The dome-like roof seen in the illustration is very lofty, and the stone pillars that rise for its support are handsome. Take another, and this time an interior view, from the corridor right across the circular conservatory. This is admirably depicted in fig. 48, which shows the main features as they may be seen by anyone emerging from the mansion into the corridor. No need to tell here of the Palms, the Ferns, the Bamboos, and other plants that grow therein, for the photographer has placed everything before us as plainly almost as life. The whole of the conservatory is lighted by electricity, and several lights are concentrated on the statue shown in the picture. When these are on, the effect, according to Mr. Sanders, is superb, and we can well believe him, while we are sure others will do so too. As is the case with the path in the Italian garden, the floor is of mosaic and the kerbs of marble.

Time and space are both exhausted, and of necessity the end must come now. The look through Halton has been a cursory one, and brief allusions have only been given where longer ones were deserved and called for, but they must suffice for the present. In conclusion we would testify to the cleanliness of the whole of the gardens, and to the kindness of Mr. and Mrs. Sanders. In justice we must add that the superb photographs from which our illustrations were prepared were taken by Messrs. S. G. Payne & Son of Aylesbury, on whom they reflect the highest credit.—H. J. WRIGHT.

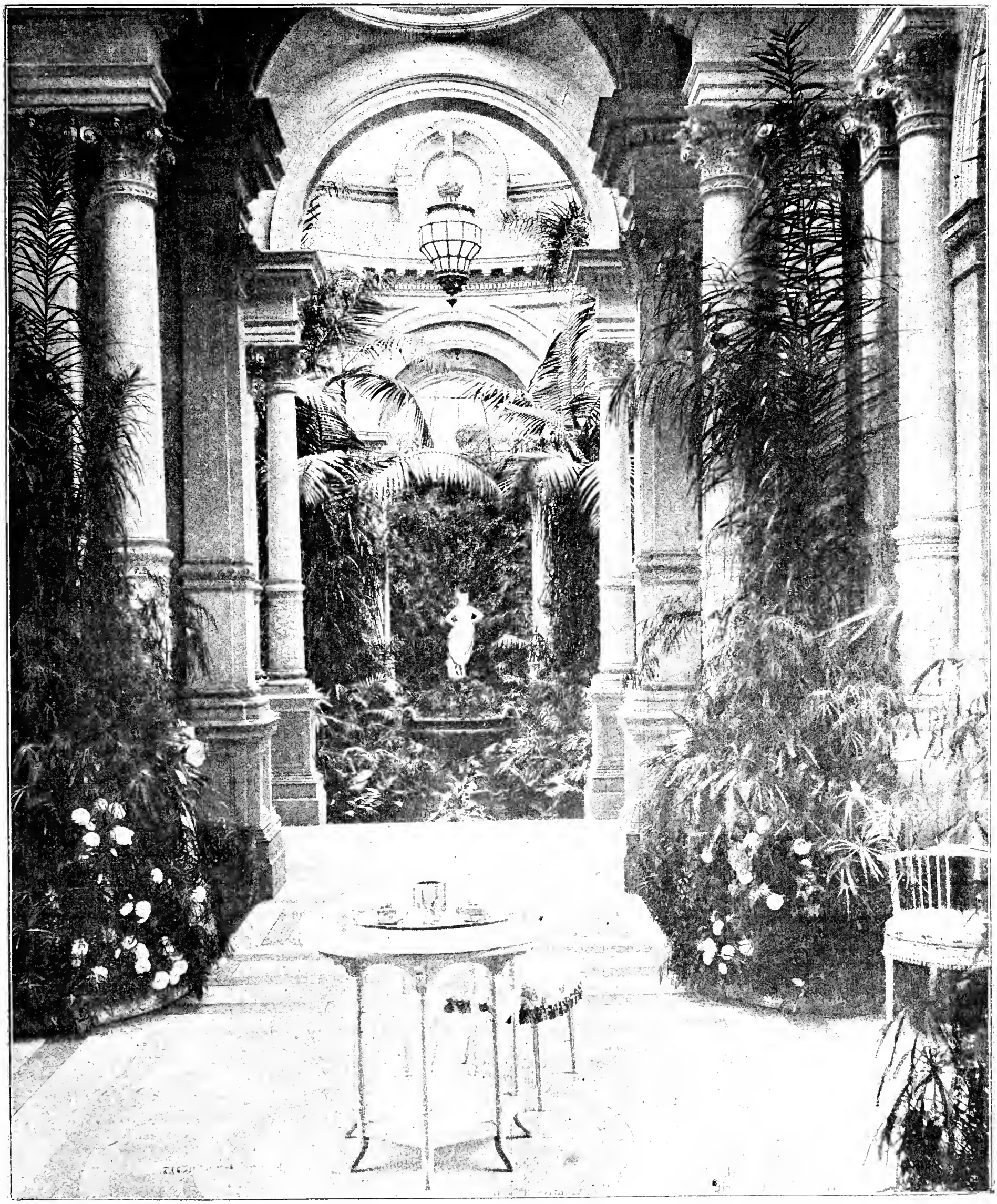

FIG. 48.—THE INTERIOR OF HALTON CONSERVATORY.

FERNS IN BASKETS.

If hanging baskets are useful accessories to the ornamentation of the cool fernery, they are just as much needed in the warm house devoted to the cultivation of Ferns and other foliage plants; but in this we have less difficulty to contend with, as there is a far larger quantity of plants from which a varied selection can be made; and on account of the great diversity found among stove Ferns, both as regards colour and form, a much greater variation may be obtained through the planting of these hanging baskets in various sizes.

Ferns for Small Baskets.

Exceedingly pretty little baskets can be filled exclusively with the Adiantums Edgeworthi, dolabriforme, and caudatum, all three evergreen East Indian species of small and rampant growth. Their being proliferous at the apex of the fronds is a great recommendation for the purpose which we have in view, as these species frequently show three, and even four, generations of plants hanging from the original or mother fronds. The general appearance of A. Edgeworthi or ciliatum, as it is sometimes called, is as distinct as it is pleasing on account of the lovely soft green tint of its pubescent foliage, as also because of the elegant way in which the pinnæ, pink in their young stage, are divided. A. caudatum is easily distinguished from the above by the greyish and dull colour of its fronds, and also by the peculiar shape of its pinnæ, which are much more cuneiform; while in A. dolabriforme we have a plant entirely distinct from the other two; and, although it appears as only a variety of the lovely A. lunulatum, it is much to be valued on account of its evergreen character, which does not belong to the species. A. dolabriforme was sent out with the idea that it would prove a plant of great value for basket culture, and the anticipation has been fully realised, for it forms a dense yet elegant mass of a particularly bright green foliage, and has been the means of making some of the prettiest small baskets that we ever had the good fortune to see.

A. lunulatum, although naturally deciduous, is well worthy of cultivation for basket purposes. This distinct and handsome species, of slender pendulous habit, has foliage of a peculiar shape, its alternate pinnæ being lunulate and of a particularly bright green colour, which forms a pleasing contrast with the shining black colour of the rachis and stalks, which are very conspicuous. Its foliage remains in good condition until about the middle of October, when it dies down naturally; and if the plant is properly treated during the winter and not allowed to get dust dry it usually starts into growth about the middle of February, or at the latest the beginning of March, and rapidly forms a most interesting mass of verdure.

Very pretty small baskets are also made with Asplenium elegantulum, an evergreen dwarf species from the Fiji Islands, which, like the above-named Adiantums, is proliferous at the apex and of a dark shining green colour; and the uncommon New Holland species called flabellifolium, which on account of its extremely slender growing nature is particularly well adapted for that purpose. Its fronds, generally from 12 to 15 inches long, are formed of two parallel rows of small and curiously fan-shaped pinnæ, of a bright dark green colour, and thoroughly distinct aspect; the apex of its fronds is also proliferous, and it is easily propagated.

Medium-sized Baskets.

The Ferns which may with advantage be used for the formation of baskets of a larger or medium size are much more numerous than those adapted for small ones, and for that purpose almost any Ferns of a drooping habit can be utilised; but the genus which supplies us with the greatest number is undoubtedly that of Davallia. The majority of these plants are provided with creeping rhizomes, which render them most valuable for such a use, as in course of time they entirely clothe the outer surface of the baskets in which they are planted and make handsome objects. Their foliage, elegant and finely cut generally, looks particularly handsome when seen from below, and being very tenacious remains a long time on the plants. In Davallia bullata we have one of the most attractive of the genus, with fronds about 10 inches long, nearly triangular in shape, and of a rich dark shining green colour, produced on creeping rhizomes, which are covered with minute scales of a bright reddish hue, accounting for the popular appellation of the Squirrel's Foot Fern. Davallia elegans and its variety dissecta from Java are also included among the most useful Ferns for basket purposes; the fronds of both species and variety are more finely cut than those of D. bullata, and produced on rhizomes of a much lighter colour. They average from 15 inches to 24 inches in length, and are quite 8 inches in width at their base. In the same way also is D. solida, whose fronds, however, are more plumose and of a brighter green colour, smooth and shining. Although several more, such as D. fijiensis, ornata, Mooreana, the beautiful tenuifolia Veitchiana, and others may be grown in hanging baskets, the above named are the most useful among the Davallias grown for baskets of medium size.

Gold and Silver Ferns.

For the same purpose most of the Gold and Silver Ferns may also be used with great effect, the more so since the farinaceous powder, which is peculiar to them, and which is their principal ornament, is seen to a greater advantage in that position than when the same plants are grown in pots. There is nothing more effective than a good plant well established in a suspended basket of the West Indies species Gymnogramma tartarea, with massive fronds fully 2 feet long and quite 8 inches wide, dark green above, but of a beautiful and very even whiteness underneath. G. pulchella, from Venezuela, is equally interesting when grown in that way, as the lemon colour which is peculiar to the inferior surface of its long, handsome, and more finely divided fronds is then shown to perfection. Gymnogramma Laucheana gigantea is the strongest of all the Golden Ferns, its fronds, of an intense yellow on the under side, being long and more gracefully arching than those of any other kind. But however beautiful all these may be when seen from below, the G. schizophylla from Jamaica and its garden variety gloriosa, although nearly deprived of either silver or golden powder, are far the best of the genus for basket culture. It is a West Indian species, the fronds of which, from 20 inches to 30 inches long, are rather slender and arching regularly on all sides. It differs from all other Gymnogrammas by having the leafy portion of its fronds, about 3 inches broad, very finely cut, and by the remarkable peculiarity, as seen in the furcation of the rachis at about two-thirds of its length, where it is proliferous, every frond producing a young plant at the point of furcation. The very elegant contour of this Fern, its moderate size and graceful habit, its delicately cut pinnules, and also its pleasing colour, render it one of the most attractive of all our stove Ferns, and one of the very best for cultivation in suspended baskets.

We must not leave the Gold and Silver Ferns without mentioning the lovely Nothochlænas, which have all the appearance of Gold and Silver Maidenhairs, but none of their comparatively delicate constitution. Nothochlæna chrysophylla, sometimes also called N. flavens, is an elegant plant with fronds about 12 inches long, greatly resembling those of an Adiantum, even to the black and almost invisible stem, peculiar to the representatives of that popular genus, but the under surface is thickly coated with a yellow powder as thick and as conspicuous as that of any Gymnogramma. N. nivea is a plant similar in growth to that just described, but silvery white instead of yellow underneath. The under side of the fronds of N. sinuata, which frequently attain 24 inches in length, is covered with very minute white woolly scales, which produce the same effect as the white powder in the other species.

In addition to the above-described Ferns a few Adiantums also make very handsome baskets of medium dimensions, principally a crested form of the common A. cuneatum called grandiceps, the fronds of which on account of the heavy tassel situated at their summit show a drooping habit of a particularly graceful character. Then there is the lovely A. amabile of Peruvian origin, with fronds from 15 inches to 24 inches long, of a beautiful pale green colour, thin and membranaceous texture, and assume more gracefully curving lines than those of any other Maidenhair. The drooping character of the plant does not exclusively belong to the fronds, but is equally shared to a similar degree by their pinnæ, which, by their position, are entirely distinct from those of any other Adiantum. On account of its elegant and pendulous habit the charming A. concinnum from the West Indies is also a beautiful object for baskets of medium size. It is only when grown in that way that the real beauty of the foliage of the Polypodium appendiculatum can be appreciated. The crimson venation in the fronds, which average about 15 inches in length, is unique, and although it colours well in any place, still the delicate and charming network becomes more vividly coloured when exposed to the full action of the light near the glass, and the effect is much more enjoyable when the foliage is seen from below.

Large Baskets.

The Ferns used for large baskets in the warm house, though not so numerous, are, however, sufficiently plentiful, and all of a very striking character. Foremost among them is the beautiful Goniophlebium subauriculatum, a native of the Malay Islands; it should be grown in every stove fernery of large dimensions where a basket can be suspended. It has no equal for elegance among all the Ferns in cultivation, its gracefully green pinnate fronds usually attaining from 6 feet to 10 feet in length. It is of very easy culture, and is not so particular as to a little sun as most Ferns are.

Among the genus Nephrolepis, which contributes largely to the Ferns adapted for baskets of considerable size, there is the superb N. davallioides furcans from the East Indies. It is a noble Fern, of robust growth, sending forth from a central tuft numerous arching fronds from 3 to 4 feet long. These differ from those of all other kinds by their furcation, which at the base is only rudimentary; but in the fertile pinnæ the furcation is twice, and even thrice, repeated at the extremities of the first division, becoming more complete towards the point of the fronds, which on account of the weight thus produced are more pendulous than those of any other Nephrolepis. The next in usefulness is N. refuscens tripinnatifida. N. davallioides and ensifolia are equally well adapted and frequently used for growing in large baskets, which they fill in a remarkably short space of time. The fronds of the former species, when fertile, are particularly handsome, as their pinnæ are then contracted and elongated, with rounded lobes on each side, and quite peculiar and elegant.

The genus Asplenium also contributes to the list of basket-growing Ferns, though A. longissimum, a species from Penang, with fronds simply pinnate, 3 feet to 4 feet long, of coriaceous texture, and of a pleasing green colour and particularly drooping habit. In A. caudatum we have a noble-growing pendulous species from the East Indies with fronds from 2 to 3 feet long, which, like those of the above species, are proliferous at their apex. These are furnished with pinnæ of a dark shining green colour, elegantly incised and unusually long, ornamented when fertile by two parallel rows of very conspicuous black sori. Microlepia hirta cristata, Phlebodium aureum, the extremely curious Aglaomorpha Meyeniana, Adiantum Williamsi, and several other kinds also make splendid specimens when grown in that way.—T.

Chrysanthemums at Stoneleigh.

I send for your inspection some Chrysanthemum foliage, taken from plants which are being grown on the large-bloom system. I think you will agree that they have ripened well, the enclosed being a fair sample. The foliage is hard and leathery, while the wood also is thoroughly ripe and exceptionally stout. "H. D.," in his remarks anent Stoneleigh in your issue August 26th, informs your readers that he thinks the plants will not ripen well, as we lie too low at Stoneleigh. Were "H. D." to visit us again now I am strongly of opinion that he would alter his opinion.—H. T. Martin, *Stoneleigh Abbey, Kenilworth.*

[The leaves sent by our correspondent, as representing the condition of those on all the plants under his charge, are excellent; indeed, they are amongst the best we have seen. They are wonderfully stout, clean, and very deep in colour. If it were wise to prophesy by leaves we should say there will be some magnificent blooms on the Stoneleigh plants.]

A Note from Ireland.

Once again the season for housing the Chrysanthemums has come. It will be later this year in Ireland than usual, the flowers in general being more backward—indeed, few that I have seen are as yet showing colour. The wet and cold of August seem to have retarded bud formation, but the weather for the past three weeks has been ideal—bright sunshine all day with heavy dews at night. Everywhere the plants look promising, though mildew has been very prevalent in our collection. We are in a very low position in the centre of the Bog of Allen, surrounded by lakes and rivers.

It is very interesting to me to watch the newer varieties swell their buds. Yellow Carnot from second crown buds is very promising, keeping the bottom foliage much better than its parent. One of the worst for losing foliage is Baron A. de Rothschild. The following new varieties have very promising buds, and will probably be seen on the exhibition board this year:—Mrs. G. W. Palmer, Royal Standard, Royal Sovereign, Mrs. C. Keyser, Madame J. Chaure, Australian Gold, Modesto, Mr. A. G. Hubbock, Mrs. D. Dewar, and M. Gustave Henry. Some plants of W. Wright seem very late, also Joseph Brookes, Mrs. R. Jones, Mrs. J. Shrimpton, and Mrs. H. Weeks, the latter pinched the first week of February, and some plants only setting their buds during the past week, although The Queen, pinched at the same time, set at the end of August. —W. T.

Seasonable Notes.

In consequence of the varying conditions under which Chrysanthemums are grown owing to the difference in the practice of cultivators and in the climatic conditions of districts, it is somewhat difficult in referring to the treatment naturally grown plants for the production of exhibition blooms should receive, to fix on a starting point. Much depends on the strength of the plants, the firmness of the wood, and the treatment they have hitherto received.

At the outset I will call attention to a matter of the greatest importance, and that is the application of a rich top-dressing. We top-dress our plants at the end of July or early in August, a space of about 2 inches being left at the final potting for this purpose. About an inch of the material to be used is placed on the surface of the pots and pressed down rather firmly, the application being made when the soil in the pots is moderately dry, so that it does not work into a paste. The mixture used for top-dressing consists of one part of loam, one part of decayed manure, a small amount of old mortar, and a sprinkling of bonemeal. For some time afterwards the plants are watered with a can, to which a rose is affixed to avoid the risk of the top-dressing being washed out of its place, or, indeed, being greatly disturbed.

Whatever feeding the plants may have had previous to this surface dressing should be continued afterwards, as the top-dressing has no immediate effect unless a fertiliser of quick action be added to it. But the addition of manure that will act rapidly I do not think absolutely necessary, although I used it previous to last year. Now if the surface material be examined about three or four weeks after the application, strong healthy roots will be found working their way through it, and when the time arrives for housing the plants the surface will be seen to be more or less covered with these healthy vigorous feeders. In my opinion nothing can be of greater assistance in the taking up of supplies of food so essential to the plants during the development of the buds than these newly formed fibrous roots. This may at first appear to have little bearing on the future treatment of the plants. I have, however, explained this to show the condition the plants must be in as regards root action.

Having, then, secured a number of newly formed rootlets for the taking up of the food, we now feed chiefly with Clay's fertiliser and Thomson's Vine manure. These we use alternately, at intervals of about eight days, but in this matter we are guided by the state of the weather. If prolonged dull wet weather sets in, the manures must be used more sparingly, so as not to cause too quick a growth, or the flower stems will be weak and the blooms lacking in substance.

The feeding is continued after the formation of the flower buds, with an occasional watering with liquid manure from the cesspool, as a change of food is, I believe, very beneficial to them. The water used is previously placed in a large tub standing in the open, fully exposed to atmospheric influences; hence it is maintained at a somewhat similar temperature to that of the soil about the roots. As a still further assistance to the plants a bag containing soot is placed in this tub. This bag is refilled with soot about once a fortnight, as the goodness is found to be washed out of the soot in about that period. The plants are fed in this way until the blooms commence to expand, when all feeding ceases, excepting when the bloom is late. Then a little sulphate of ammonia is applied. But I do not advise the use of the sulphate excepting for the purpose of assisting in bringing forward late varieties, as it tends to shorten the durability of the blooms after their expansion.

Mildew is a most troublesome disease, and generally makes its appearance with us early in September. Sometimes it attacks the plants earlier, and this season they were attacked at the end of August. My garden is situated in a low-lying spot, and consequently the Chrysanthemums are more subject to its attacks than are those grown in gardens occupying a higher and drier situation. On its first appearance every plant is dusted with flowers of sulphur, usually early in the morning when the leaves are wet with dew, as the sulphur will then adhere to the under surface. This is a very important point, as the rain cannot remove it from the under surface as it does from the upper surface. We seldom have to repeat its application, and I have not on any occasion since adopting this practice been troubled with mildew after housing the plants. Also after the plants are housed and before the blooms commence expanding we fumigate slightly two or three times to free the plants from aphis that may remain.

Late varieties are placed on the side stages of the greenhouse over the hot-water pipes, and by means of flower pots are raised as near to the glass as possible. These receive a little sulphate of ammonia twice a week, and when the solar influences are not favourable a little artificial heat must be applied. The cultivator must use his own judgment as to the time of housing his plants, taking into consideration the locality in which he resides and the state of the buds (whether late or early), and also what means at his command for coaching them. These are important points which will repay a little study, and certainly cannot be ignored by those who would achieve success in a close competition.

Having stated how our late varieties are treated, I will allude to the general collection. The earliest varieties, which require very little fire heat—*i.e.*, only sufficient to maintain a dry atmosphere, are placed in an early vinery; and those that are naturally a little later are arranged upon the centre stage of the greenhouse. All are raised as near to the glass as possible by means of planks laid on drain pipes placed in an upright position on the stage. The plants are placed on the platform thus provided, the tallest being arranged at the back and the dwarf ones towards the front. The plants nearest the front are raised by means of various sized flower pots, so that when all is complete they form a very sharp slope to the south. By this arrangement the upper growth of every plant receives a full share of light and air—a matter of great importance if good blooms are expected. Again, every bud can be seen when the cultivator is standing in front of them, so that should they require attention a plant or two can easily be removed for that purpose.

In conclusion, I should like to refer to one further important point, and that is arranging the colours on the exhibition board. I have noticed scores of stands arranged with sometimes as many as four, and even six, blooms of a bronze or other dark shade placed together. This is not as it should be, for by judicious intermingling of the light and dark shades of colour each bloom will add to the effect of its neighbour, and consequently to the attractions of the exhibition table. It may also make all the difference between a first or second place in a close competition. —D. J.

THE CHRYSANTHEMUM SEASON.

The advent of October brings us on the very threshold of the interesting period during which the ever-welcome Chrysanthemum commences its annual reign. There is reason to hope that the season will be a good one. Plants on every hand appear to be in a flourishing condition. Strong growths have been made, and where these have been thinly disposed leaves of firm substance developed, buds appearing at or near the proper time. Though the month of September has not been of the driest and warmest character, there has been an absence of devastating gales. Several periods of very wet weather have rendered the roots and soil moist without giving supplies of water for a day or two; nor could feeding with liquid manure be carried out. However, advantages lost in one way were gained in another. The foliage received a thorough washing, and plants are better for the cleansing.

Housing.

The most important work at the present time is housing the plants. Few varieties except late plants, which may be kept out some time yet, derive any advantage from a longer sojourn in the open air. What is needed is a steady progressive swelling of the buds in a continuously regular temperature. Plants which are left out must be afforded some protection during a spell of frosty nights, which, if not coming sooner, may be expected during the last three weeks of October.

It is advisable to prepare for housing in good time, so that there is no rush and hurry at the last moment. The arrangements ought to be such that plants may be taken in and placed in a position most suitable for them to occupy, in order that the buds may swell and the flowers develop without damping. Damping is frequently caused, though it may not be the only cause, by plants being placed too near the glass, especially in a

low unheated structure. Atmospheric conditions in such a house vary considerably. When sudden changes do occur, the tender tissues of the petals are injured, and the result is decay. Fungus probably takes possession, and damping is complete. The best way to avoid this is to place the plants at a reasonable distance from the glass, and to ventilate freely at first. When the flowers are opening, and there is damp dull weather at the time, apply a little fire heat, which causes the atmosphere to be brisk by counteracting the extra moisture. Always, however, admit air. On very bright and sunny mornings afford shade to well-advanced flowers, which may prevent injury.

When housing the plants, the pots should be washed and the drainage holes cleared of dirt, which might prevent the escape of superfluous water. Dead leaves on the plants, weeds, and rubbish on the soil provide a harbour for earwigs. All such ought to be cleared away. A little hint may also be worth recording, that the hollows above the upper culms or joints in Bamboo sticks are admirable hiding places, too, for the well-known earwig. Those who did not adopt the precaution of stopping up the holes will find it advantageous to do it now.

The foliage of any variety affected with mildew ought to be dusted with sulphur, as a means of checking the fungus. The Japanese variety, W. Tricker, is subject to it, so plants of that variety will almost certainly require sulphuring. After housing give water carefully. In dull weather little will be required for several days, if plants were adequately moist when conveyed in.

Continue to disbud terminal shoots, or to take late crown buds. The best results, even for decorative purposes, are to be had from one bud on a shoot of all the large-flowering varieties.

Feeding—Artificial Manures.

When outdoors showery weather is a suitable time to feed the plants with sprinklings of artificial manure, but feeding must be continued after housing, though very little the first week. Take precautions, however, not to apply those of a hot burning character, such as guano, without mixing with soil, so that active young rootlets near the surface may not be damaged.

The easily dissolved salts, such as sulphate of ammonia and nitrate of soda, ought not to be applied direct to the surface, but dissolved in water at the rate of ¼ oz. to the gallon. These are special manures, and furnish quickly in a readily available form one important element of plant food—namely, nitrogen. Both are highly stimulating, and being so, but few applications at wide intervals are necessary. The high-class general artificial manures supply most of the essential elements of plant food, and may be given more frequently to well-rooted plants.

Animal Manures.

It is a commendable plan to alternate general and special manures with solutions prepared from animal manures obtained in a fresh condition. The manures employed may include horse, cow, sheep, and fowl manure. They may be used separately or in combination, but preference ought to be given to the use of them separately. A peck of each to 30 gallons of water forms rich and sustaining food, giving first one and then another for a few days. Dilute to a safe strength, and use clear, this being best assured by tying up the manure in a coarse bag.

Soot Water.

This solution forms a clean and valuable liquid if prepared properly. Place a quantity in a canvas bag, sinking in a tub of water. When well mixed throw in a shovelful of lime. Stir well and allow to settle. A scum will appear on the surface. On removing this the water below will be of a rich, clear wine colour, due to the lime clarifying or making it clear. If too rich or strong, dilute it to the colour of beer, and apply in rotation with other liquid food. Soot water gives a deep, dark colour to the leaves, and a richer, fuller colour to the flowers. It contains nitrogen in the form of sulphate of ammonia.

After a prolonged course of weak applications of liquid, somewhat stronger doses may be given with advantage, especially to vigorous, strongly rooted plants. The last swelling and the commencement of the unfolding of the buds is a period when abundance of food should be within the reach of healthy, hungry roots, gradually reducing the supply to clear water as the flowers are becoming fully developed.—E. D. S.

ROOT-PRUNING FRUIT TREES.

When quite a beginner I was much perplexed to hear and read of gardeners pruning the roots of trees—notably fruit trees. It seemed to me a most absurd practice, because I knew a tree could not live without its roots. As I became older, however, I began to inquire into the "why and wherefore" of this subject, and learned that in supposing the practice to be bad I was entirely wrong. The necessity for root-pruning is brought about by several different causes, among them being careless or improper planting, vigorous rootstocks, and shallowness of fertile soil.

We will consider the planting first, as upon it largely depends the future of the tree. The most common mistake, probably, is planting too deeply. If this is done the roots are of necessity placed farther away from the modifying effects of the sun and air, and are consequently in greater danger of dying or remaining inactive. It is then the mischief is being contracted. While the surface roots are inactive the lower and stronger roots are pushing straight down into the subsoil. Thus the advisability of shallow planting becomes clear to every thoughtful gardener.

Too vigorous rootstocks was the next point I mentioned. It often occurs that trees are grafted on stocks much more vigorous in constitution than the scion or graft. This is done in order to make a weak growing tree more productive than it would be on its own roots or on a stock of medium strength. But it also has a tendency on shallow soils to induce sappy growth by the roots entering the subsoil, hence the need of root-pruning.

A shallow surface soil is no fault of the gardener, and it is under such conditions that root-pruning becomes a periodical necessity where satisfactory crops of fruit are desired. It is, therefore, well for us to have, if possible, a knowledge of the depth and nature of the soil as well as of the stocks and constitution of trees we are dealing with before planting largely.

Having considered what makes root-pruning necessary, let us see what results are obtained from pursuing such a course, and why it should be done at all. When does a tree require to be root-pruned, and what are the signs to go by? What is the best time of the year to do it? Which roots shall we sever? These are questions which puzzle the uninitiated. Briefly, the real object of root-pruning is to make the trees more productive of fibrous roots as near the surface as possible. These will tend to produce wood of medium strength that will mature properly and produce plenty of fruit buds instead of sappy growths, which no amount of autumn sun will mature. Of course it does not follow that every tree requires its roots checked, for it would be absurd to tamper with those of one that was bearing heavy crops of fruit annually. Rather give such a specimen help in the shape of mulchings and liquid manure. It is trees that produce nothing but long succulent growths till late autumn which indicate to a careful observer that something is wrong somewhere, and one may rest assured the mischief is at the roots.

The best time to do this work is as soon as the fruit has been gathered, as the new roots will then have time to lay hold of the fresh soil before the advent of hard weather. It is an operation which requires to be done quickly and well. Commence about 4 to 6 feet away from the bole of the tree and remove the soil with a fork to a depth of 2 to 3 feet, according to the size of the tree and depth of fertile soil. Retain all the fibrous roots, severing the thick ones with a sharp knife, always making the cut from bottom to top, so that the cut side will face downwards. After getting down to the required depth proceed to undermine the tree in the same careful manner, making a clean cut wherever it is necessary, as jagged ends will cause the roots to decay. It is important, too, that as many of the severed portions of roots as possible be removed, as if left in the ground they are favourable to the growth of fungi, which will in time attack the living roots.

Replace the soil firmly, adding to the staple a liberal quantity of good turfy loam, which will induce the formation of the root fibres so essential to a good crop of fruit. Give a mulch of half-decayed manure and the work is finished. During this time the tree must not have been allowed to flag, being freely syringed and shaded occasionally if necessary until the roots take hold of the fresh compost. A tree thus treated will in most cases be found to give entire satisfaction in after years with an ordinary share of attention.—T. P.

PREPARING SOILS.

The successful planting and establishment of hardy trees, shrubs, and plants of all kinds depends in a great measure on previous and thorough preparation of the soil. It is true there are other essential conditions—namely, the judicious preparation of the subjects to be planted. Trees and shrubs are best planted when of portable and medium size. They should be well furnished with, if possible, balls of fibrous roots, so that they do not suffer from removal. Herbaceous plants ought to be lifted, divided, and replanted with as little delay as possible. Deep and thorough disturbance of soil is only possible when there is no danger of cutting and damaging valuable roots. Hence the desirability of taking extra trouble to trench, dig, and manure before planting permanently.

Soils are of diverse character, but their preparation previous to planting may in one particular—viz., deep culture, be practically the same. Heavy soils are largely improved in mechanical condition by deep digging or trenching. Soils of medium texture have their usefulness increased. Light soils cultivated deeply are able to draw upon the subsoil for moisture when needed. Should the evaporation from the surface in hot weather be more rapid than desirable there are various methods of checking it. The chief plans resorted to are compressing the surface, mulching, and hoeing. The latter is good for all soils, as it affords facility for the free entry of oxygen from the air.

The depth of soil required by high class cultivation is 2 to 3 feet. Trenching is the most complete and effectual method of moving the soil, but there are two ways of carrying out the operation. One is the total reversal of the position of the layers of soil, the other is the moving to a similar depth, but without altering its original position. The former acts well when the whole depth of soil is of uniform quality, or can be advantageously mixed if the subsoil differs from the upper layer. It is essential to carry out the latter method when the subsoil is poor and the upper layer good. Serious mistakes have been made by neglecting to ascertain the respective quality of each. This has resulted in burying the good and fertile upper layer, and bringing to the surface the hungry poor subsoil, in which probably few plants or crops could thrive at first. The best plan is to leave such soil in its original position, but breaking it up well, mixing with it decayed manure or vegetable material.

Heavy clayey soils or heavy adhesive loamy soils are much improved

in texture if they can be roughly broken up and exposed to a whole winter's frost, snow, rain, and wind. There is nothing like the full play of natural elements for pulverising and ameliorating stubborn soils. On such it pays to defer planting for permanent occupation for a season, and give attention to thorough cultivation. Mix with the soil when breaking it down after a winter's exposure the parings and scrapings of roads and roadsides. Any gritty material is useful. Coal ashes and the contents of a smother prove useful.

Sandy soil is hot, dry, and usually deficient in quality because of its inability to retain food. Mixing with strong or clayey loam will improve it. Chalk or lime added freely and pointed in conveys to the soil an essential food it is likely to be deficient in. Cow manure is the best for a light soil, for being of a binding and moisture-holding character it rectifies the heat and dryness natural to a sandy soil.

Land gives certain indications as to its fertility or poor quality. If weeds grow luxuriantly the soil is in good heart, and only needs a minimum amount of manure and deep cultivation to fit it for the growth of vegetables, flowers, and fruit. Small and wiry weeds indicate poor soil. Such ought to have the best spade cultivation and the most liberal manuring. The manure employed for heavy adhesive soils should be of a strawy character rather than well decayed. The strawy part helps to keep the soil open because it is longer in decaying.

Ordinary soil that is fairly good, but needs enriching, should have the addition of decomposed manure and leaf soil as a means of improving it for the planting of herbaceous plants, bulbs, annuals, and biennials.

Fruit trees are not benefited by the addition of much manure to the soil previous to planting. Roses require liberally manured soil, but it ought not to be placed so as to be in contact with the roots when the trees or bushes are inserted. Shrubs and trees, both deciduous and evergreen, need a fair depth of good fertile soil intermixed with manure. For general autumn planting, the sooner digging, trenching, and manuring is carried out the better, so that the soil may become consolidated. —S., *Gravesend.*

CUNILA MARIANA.

THIS, "D. Jameson," is what is known in North America as the Dittany, which is a name that is applied to several different plants. For instance, the Dictamnus Fraxinella is so called, as also are two species of Origanum. Possibly these names have arisen from some fancied resemblance between the plants so designated; but to say the least, the similarity of the Cunila to the Dictamnus is by no means strongly marked. Cunila Mariana, of which an illustration is given in fig. 49, is a tufted dwarf hardy perennial plant included in the Mint family and related to the Monardas and Salvias, though differing materially in general appearance. The plant rarely exceeds a foot in height, and produces its small rosy purple two-lipped flowers in great profusion, in dense corymbose or cymose clusters. According to Gray this Cunila is found in the dry hills south of New York; in England it thrives in any ordinary soil not too wet, and flowers in late summer.

AUTUMN FLOWERS AT HAMPTON COURT.

DESCRIPTIONS of summer bedding in gardens or parks invariably give glowing accounts of the beauty found in every direction when written in July or August. With the advent of lower temperature, colder nights, heavy rains, and wind storms, the later portion of September often tells a different tale. Good bedding plants, or combinations of plants, should, so far as possible, have the merit of looking gay and effective up to the end of the season, indeed right up to the advent of frost. If beds become overgrown, wild, or demoralised in any way in September, especially as so many beds did last year, and again this season, then are such plants or beds of questionable value, charming as they may have been up to a certain, though very limited, period. Thus we saw this autumn, as last autumn, Zonal Pelargoniums quite demoralised early in September, and have been worthless as bedding plants ever since.

On the other hand, we saw last year, and again this, the too much despised and criticised, yet with the general public always popular, carpet or mosaic beds almost more effective under the autumn rains than earlier. These, indeed, are of their kind the successes of the season. This has been the experience at Hampton Court Gardens both with Pelargoniums and carpet beds. I went over there on the 20th purposely to see how the bedding plants had fared, and found these to be as described. A rather foolish Jubilee design worked out with diamond, crowns and monograms in one of these beds attracted so much notice that the grass for some 3 feet wide round the bed became almost bare. Probably that sort of design will not be repeated.

Single Begonias of the large-flowered section were florally the best weather plants, although it was evident that the earlier beautifu B. Worthiana, so pretty then as an edging plant, but always so heavy in a mass, was quite washed out, and all beauty had departed. Scarlet or crimson Begonias on carpets of Königa variegata—really a beautiful mass of soft silvery white when in bloom—on Sedum glaucum, and on Mesembryanthemum cordifolium variegatum, and yellow Begonias over Viola Duchess of Sutherland—here so long misnamed Mrs. Turner—were all still bright and effective, although yellow and white Begonias never stand so well as dark coloured ones do. Besides Duchess of Sutherland Violas, so singularly beautiful, the old Blue Bell, planted freely amongst Carnations, which make such poor bedders, was full of bloom, as also was Ardwell Gem, apparently here named Yellow Prince. Some few other Violas, Countess of Kintore especially, were blooming well, and fully displayed their great value as summer bedders.

Petunias and Verbenas had become wild, and almost flowerless. Fuchsias generally had lost colour and brightness, also making rather too strong growth. It is questionable whether these plants would not be best plunged in good sized pots, to check strong growth after heavy rains. Heliotropes were still fairly good. The leaves of Gladioli, amongst those Souvenir de la Malmaison, were getting brown and unsightly, but Montbretia Pottsi around them was blooming charmingly. The Gladioli should be relegated to the mixed border another year. Beds of mixed

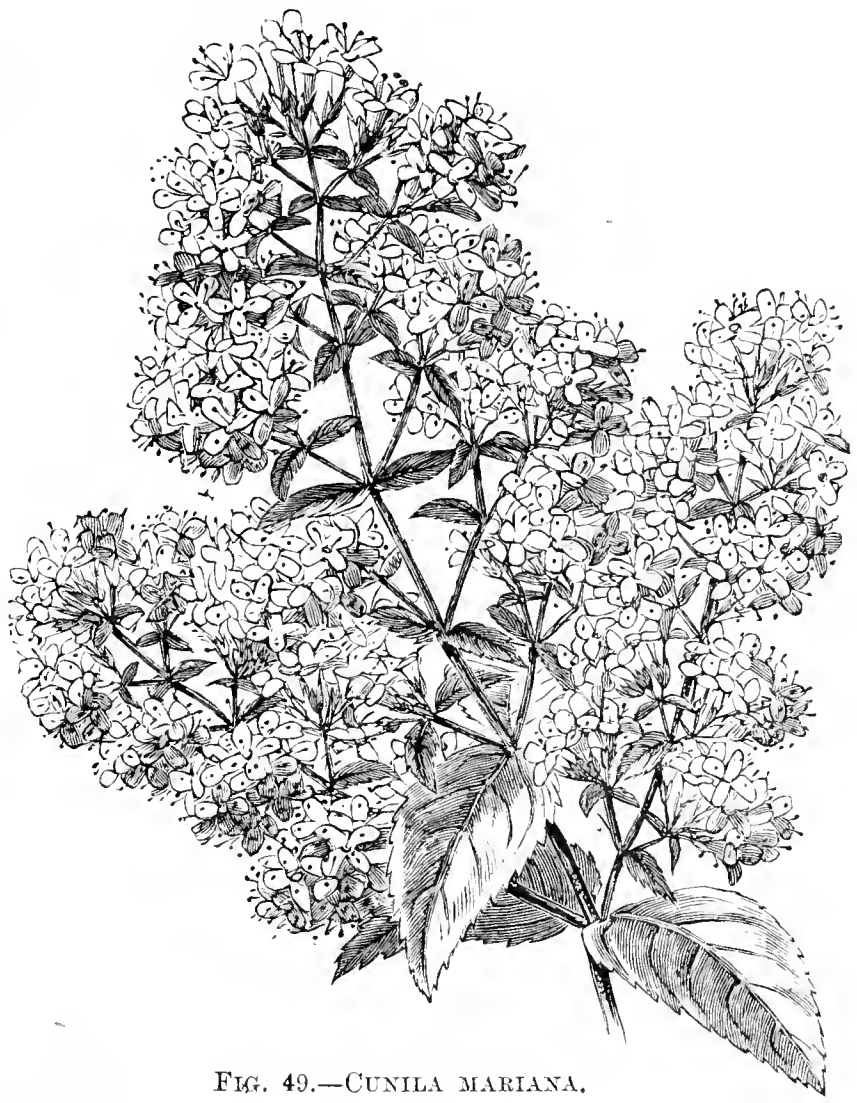

FIG. 49.—CUNILA MARIANA.

flowering and foliage plants had become overgrown, and not at all attractive; but some of the sub-tropicals, though rather dull, were, all the same, in capital form. Some large masses of bedding Dahlia Flambeau, brilliant scarlet, especially one having white Marguerites intermixed, were very effective; so also, blooming profusely, were the lemon Marguerite Etoile d'Or.

Silver variegated Pelargoniums kept fairly well, especially Flower of Spring, mixed with blue Viola and the yellow Crystal Palace Gem, dotted with Verbena venosa, was also very good. Of course edging plants of foliage form kept very well, but blue Lobelia was quite over. Lobelia cardinalis Queen Victoria and seedlings were exceedingly attractive, and gave rich colouring at this time of the year. A bed of white Begonias, dotted with the tall scarlet Lobelia, was excellent. Abutilons, too, came out well. The golden marbled Thompsoni kept wonderfully good colour, and on a bed of scarlet Begonias, set in a carpet of variegated Königa, Abutilon Souvenir de Bonn was telling, its green foliage, broadly edged with cream, telling effectively. These plants, however, generally seemed planted too formally in rows running parallel with the beds.

A bed of Lilium tigrinum, blooming freely, was rather marred by an intermixture of white Tobaccos that do not harmonise. Some dwarfer plant would have done better. A huge bed of early blooming Chrysanthemums, chiefly Madame Desgrange, because rather close under trees, had the plants tall, and both late and irregularly blooming. Tying these up also gave them a formal appearance. A broad margin in front of Aster amellus in full bloom was very effective. On the mixed borders single and Pompon Dahlias were very floriferous, and clumps of really first-rate double African Marigolds were most telling; but a large number of a wretched strain that never should be grown were horrid. These are but a few hurried notes of effective late autumn plants in these gardens. They show, in any case, that there is still much beauty in them, rough as the weather has been. That the new superintendent means to do his utmost to render the gardens attractive there can be no doubt.—A. D.

PLANTING DAFFODILS.

THERE is perhaps no better month in the year for planting the majority of Daffodils and Narcissi than early October, though some growers make a start even earlier. Such, however, are exceptions, and not the rule; indeed, amateurs have not the opportunity of proeuring their bulbs much before this date. With regard to lifting and storing them, I will only say that it is too late to attempt it if not already done, as many are already rooting freely that have not been disturbed, therefore to lift them and lose all their new roots would be a serious error. But now a few words as to planting them and their general cultivation.

Regarded collectively, the majority of Daffodils, and particularly the grand Trumpet varieties, which belong to the magni-coronatæ group, delight in a deep rich fertile loam, such as fresh turf from a pasture. In this they thrive, though it is not forthcoming in a great many instances, and they have, therefore, to be planted in something else. They are by no means a fastidious group, however, as may be gleaned from the manner in which some thrive in cottage gardens that have not been disturbed for years, where they have grown into large masses, too crowded, it may be, to flower with their wonted freedom when under good cultivation; for let it be borne in mind that while these cottage garden clumps appear to thrive, the number of flowers will be very small as compared with the number of bulbs.

Like all other plants, Daffodils cannot grow to perfection when left alone. If one of these large clumps be examined, it is most likely there may be fifty or a hundred bulbs of all sizes heaped one on another, and probably not a dozen flowering bulbs in the whole. The case is quite different with Daffodils under cultivation, when single bulbs (I allude more particularly to the old double Daffodil) will produce three, four, and even five flowers each; thus illustrating, on the one hand, the plant in a semi-wild condition, and on the other, the result of high-class cultivation. I mention these extremes to show that Daffodils, even when planted in shrubberies or semi-wild places, are much benefited by periodical lifting and separating.

SUITABLE POSITION.

The majority of Daffodils are very accommodating as to position, and may be planted in the herbaceous border proper, or fringing a plantation of Rhododendrons; on grassy slopes; in shady groves; in the woodland or wild garden, or in fact any place out of doors where a fair depth of good soil may be given them. Not the least important feature in connection with many of them is their adaptability for forcing and for pot culture under glass. Only a few years ago the rich and varying tones of gold and yellow, which are now so much admired in these Daffodils in the early spring time, were considered vulgar. Fashion and tastes quickly change, however, for who would have thought a few years ago that our common double Daffodil would ever become sufficiently popular and valuable that bouquets chiefly composed of them should figure prominently in leading West End florists' windows? Yet it is so, and extremely effective they are when arranged skilfully, and at the same time they are very enduring provided they have not been forced too hard. As pot plants in the conservatory or the drawing-room they are highly ornamental, and are being more eagerly sought after year by year.

IN POTS.

But no matter for whatever purpose they are required, whether it be for pots or for the open, no time should now be lost in obtaining supplies and having them planted at once. For pot culture the best plan to adopt is that which most growers employ for Hyacinths, Tulips, and the like, covering with a few inches of cocoa-nut fibre refuse or coal ashes. In this they will be safe for eight weeks or thereabouts, by which time abundance of roots will be formed, when they may with safety be introduced into gentle heat. The only difference I would make with Daffodils for pot culture would be to bury them completely in planting, and not, as is the case with Hyacinths, leave the apex of the bulb above the surface.

Daffodils when first introduced into heat need not occupy the stages; they may be placed beneath them, provided they are not in contact with or even near the pipes, as that would mean a serious injury to their flowering. If left plunged in the ashes a longer time than I have stated some of the earlier ones may have commenced growth, in which case they should be shaded from full light for a few days. In planting them in the open ground they are not so easily accommodated, unless it be in instances where beds are devoted to them, when the planting is simple enough.

COMPOST.

In all gardens where light sandy loam abounds Daffodils are easily accommodated, and may be planted from 4 to 6 inches deep for the larger bulbs, such as Empress and Emperor, Golden Spur, and spurius, while 2 or 3 inches deep will be ample for such as the Hoop Petticoat section and those generally of small stature. For the more delicate, such as cernuus, cernuus plenus, albicans, odorus plenus, pallidus præcox, nobilis, scoticus, and moschatus, a maximum depth of 3 inches will be sufficient; in heavy, holding, and clayey soils further precautions will be necessary in the shape of abundance of sharp grit, burnt earth, and leaf mould to render the soil as open and light as possible. The stronger varieties do not object to heavy soils provided they are well drained, in which case they are benefited by abundance of sharp sandy grit, which is not so important on lighter soils.

Another important point is that of manure for Daffodils. This is, however, a question which individuals must settle for themselves, depending as it does in its entirety on the condition of the soil. A rich fertile loam will grow Daffodils perfectly without manure of any kind, while a poor, hungry, or gravelly soil will be benefited by a dressing of cow manure worked in 3 or 4 inches below the bulbs, or failing this a good soaking of liquid manure may be given with excellent results when the roots are most active—viz., from September to end of January. The idea of supplying liquid manure in winter to these and other bulbous plants has not received the attention its importance deserves, and is probably overlooked at a season when rain or snow have made the ground sufficiently moist for most things; but not only is it highly beneficial to Daffodils and Narcissi, but to Liliums, Spanish and English Irises, tuberous Anemones, and, in fact, the majority of bulbous plants which make a number of fresh roots annually.

SELECTION OF VARIETIES.

For anyone desiring a selection of Daffodils and Narcissus to form a start, I have given the names of some of the best and most useful. Corbularia conspicuus, the golden Hoop Petticoat; princeps, yellow and sulphur, good for forcing; nobilis, sulphur and yellow, trumpet reflexed and fringed: maximus, deep golden, a fine flower; obvallaris (Tenby Daffodils), the best forcing variety of single Daffodils; Telamonius plenus, the old double Daffodil, grand for forcing; spurius, spurius major, and coronatus, all excellent for a second early batch indoors; Golden Spur, a grand flower for any purpose; Emperor, one of the grandest of all its tribe, too valuable for forcing; Horsefieldi, an exquisite flower, will force steadily; Empress, a noble flower of great merit; rugilobus, a useful variety, very free flowered; cernuus and its double form, moschatus albicans, William Goldring, cernuus pulcher, tortuosus, are all charming in the garden but not suited to growing in heated structures.

Next I would name a choice kind which is always admired—viz., pallidus præcox, a pleasing sulphur shade and most useful; then in the Incomparabile group are Stella, Glow, Cynosure, Princess Mary, and Sir Watkin, each distinct and good. Barri conspicuus is remarkable for its large spreading perianth segments of sulphur and yellow, and cup stained with orange scarlet, this is exeeedingly showy. To those named may be added poeticus ornatus, poeticus plenus, and the sulphur and orange Phœnix; poeticus ornatus is the best white forcing variety in cultivation, and its flowers by the tens of thousands find their way into Covent Garden Market from January to April inclusive. Of course such specialists as Messrs. Barr & Sons, Covent Garden, have newer varieties of the most exquisite beauty, particulars of which will be found in their catalogues.—J.

BANBURY ONION SHOW.

THIS annual Show of Mr. Deverill's took place on the 16th inst., and, as usual, proved a great attraction to the inhabitants of Banbury and district. The fine display of herbaceous flowers exhibited in bunches from Mr. Deverill's nursery made a very pleasant addition to the Show, also Dahlias, which I believe this firm has successfully exhibited for the first time this season. Probably owing to the early attack of mildew the Onions were not quite so heavy as usual in the principal classes, although Mr. Bowerman's best exhibits were not much below the average. The cottagers again showed extremely well, in fact several of their exhibits would not have disgraced any exhibition table.

Class I. is called the champion class, and is for the six largest and handsomest specimens of any variety of Deverill's Pedigree Onion. The prize is a medal or timepiece, and was well won by Mr. Bowerman of Hackwood Park, Basingstoke, with Ailsa Craig, weighing 14¾ lbs. Of this variety Mr. Bowerman seems to have a very fine strain. In the next class, for twelve specimens of either Ailsa Craig or Cocoa-nut, Mr. Bowerman was again successful with Ailsa Craig, weighing 26 lbs. clean solid bulbs. Mr. N. Kneller, Malshanger, was a close second as regards weight, but the bulbs were not so well finished as the former. Mr. Masterson, gardener to Marquis Camperdown, Weston Park, Shipston-on-Stour, was third, also showing Ailsa Craig.

For twelve specimens of either Anglo-Spanish, Lord Keeper, Royal Jubilee, or Rousham Park, the first prize was awarded to Mr. W. Keep, The Gardens, Faringdon House, Berks, who showed Rousham Park, weighing 21½ lbs.; Mr. R. Lye, Sydmonton Court, Newbury, was second with Anglo-Spanish; and Mr. Waite, Glenhurst, Esher, third with Lord Keeper. Mr. E. Thorne of Oxford was first with twelve Improved Wroxton, his exhibit weighing 12½ lbs.; Mr. Lye second. Mr. Lye was first with twelve Challenge, and Mr. Waite second.

The competition for the best single specimen of any variety of Deverill's Pedigree Onions was rather limited, but the specimen which secured Mr. Bowerman the first prize was a handsome, clean, solid Ailsa Craig, weighing 2 lbs. 13 ozs.; Mr. Kneller was second with a fine specimen of Anglo-Spanish, weighing 2 lbs. 7½ ozs.; Mr. Lye third with Ailsa Craig, weighing 2 lbs. 1 oz. For six Leeks (Deverill's Oxonian) Mr. Lye was first with clean well-blanched roots, Mr. Bowerman second, Mr. Kneller third.

In the class provided for cottagers, for twelve Onions any variety, there were twenty-four entries, and all most creditable exhibits. The first prize going to Mr. H. Ellmer of Cuckfield, Sussex, for Ailsa Craig, weighing 18¾ lbs.; Mr. Woodcroft, Neithrop, Banbury, was second with the same variety, weighing 14½ lbs.; Mr. R. Horton, Tysoe, Warwick, a close third with Ailsa Craig. Three extras were awarded in this class.

The class for eight kinds of vegetables, five to be of Deverill's specialities, brought some fine produce from Messrs. Lye and Waite, the former just gaining the first award, his Aylesbury Prize Celery and Oxonian Leeks being very good, also Autumn Giant Cauliflower and Carrots. Mr. Waite's best dishes were equally good, Autumn Giant

Cauliflower, Runner Beans (Ne Plus Ultra), Middleton Park Beet, and Exhibition Scarlet Intermediate Carrot. Mr. G. Wells, Tysoe, Warwick, was third, also showing well.

The collection of eight distinct kinds of vegetables shown by amateurs and cottagers, as before remarked, were most creditable, a great advance on any previous show. Mr. G. Wells was first with fine Runner Beans, Celery, and Cucumbers. Mr. Ellmer, Cuckfield, second, and Mr. W. Butcher, Tysoe, Warwick, third.—G. I.

THE YOUNG GARDENERS' DOMAIN.

Palms.

At the present time these plants are recognised as the most useful for house decoration, and it cannot be wondered at, for with care and attention with regard to watering and the position in which they are placed there is no limit to some of the varieties' term of duration. They are grown extensively for conservatory and decoration both in pots and planted out in beds, and large specimens have an imposing appearance.

Palms thrive best in a compost of two parts of fibrous loam, one part of peat, and one part of charcoal and sand, with a little artificial manure added. When potting they should have thoroughly good drainage, and the soil must be well rammed. The base of the plant ought never to be below the surface of the soil, but just on the level, so that when new roots are emitted they will at once enter the compost. During the spring and early summer months a somewhat high temperature is required, one ranging about 80° to 90° in the daytime with sun heat, and not to fall below 65° at night. As the summer advances, and the plants have got well established, more air may be admitted and the plants gradually hardened previous to winter.

Heavy shading is required to secure a rich green colour, also plenty of moisture both at the roots and in the atmosphere. Syringing with weak soot water will impart a dark colour to the fronds, and it may also be given them occasionally at the roots. A top-dressing of artificial manure is beneficial when the plants have plenty of root. Shading may be dispensed with about October, and during the winter months syringing will not be necessary except on bright days, and then only once, about midday. At this period very little water is required at the roots.

The varieties Latania borbonica, Chamærops excelsa, C. humilis, Livistonia rotundifolia, Corypha australis, and Thrinax elegans are strong growing, and especially adapted for conservatories. They have large fan-shaped leaves, often measuring 3 feet across. In the small state they are useful for house decorations. The Chamærops, Latania, and Corypha will stand outside in summer if they have previously been inured to the cooler temperature. Cocos flexuosa is now extensively used in corners and behind screens, where the tall handsome foliage towers above, and shows to advantage near the ceiling, unless the room is extra high. A plant in a 12-inch pot, if in good condition, should be 12 feet high.

To the Kentias falls the chief part of the work both in the house and conservatory, and when in a small state are used for table decoration. The best varieties are K. Belmoreana, K. Fosteriana, K. australis, and K. Canterburyana. Arecas are somewhat similar to the Kentias in growth and shape of foliage, and are equally well adapted for house and table decoration, but do not last quite so long. The best varieties are A. sapida, A. Baueri, and A. lutescens. Of the genus Phœnix, P. rupicola is the best, as the foliage is more graceful than the other varieties. P. dactylifera has stout erect fronds. Two other good varieties are P. sylvestris, and P. reclinata.

Seaforthia elegans and Ptychosperma Macarthuri are two tall growing varieties, with large spreading fronds. Chamædorea Wendlandi, Rhaphis flabelliformis, and R. humilis are three Palms with Reed-like stems, and are excellent for standing rough treatment. Dæmonorops plumosus, Geonoma gracilis, and Cocos Weddelliana are elegant for table decorations, the leaves being very light. They are little used for rooms, as they will only stand a short time. They also require a rather higher temperature than the other Palms.

Scale, thrip, and mealy bug are the worst enemies of Palms, and when these put in an appearance, the plants should be sponged with an insecticide.—Elveden.

Apples in Ireland.

Apples over the most part of Ireland are only a partial crop, odd trees being heavily cropped, while there are no fruits on other trees close by, though often the same variety. The varieties carrying the heaviest crop in our garden are the following:—Ribston Pippin, good on walls and trees in the open garden. Never have I seen the fruit larger or the trees growing better. The wood is clean and free from canker, the Ribston's greatest enemy here as in several other places. Alfriston is another variety having a heavy crop, many of them being of a beautiful red colour on the side next the sun, though most seasons such is entirely absent. Lord Suffield bore splendidly, the trees being now healthy and making fine growth free from canker. They suffered badly when closely pruned every year, which was the practice until the last five years. Bishop's Hero, an Apple very like Lord Suffield, which keeps till Christmas, is bearing a heavy crop of large fruit.

Bedfordshire Foundling never fails, and this year the Apples are larger than usual. It keeps till April, and is then a lovely colour. Cox's Orange Pippin is only a poor crop, most of the flowers having been blackened in the bud. Hoary Morning, Warner's King, Frogmore Prolific, Wyken Pippin, Winter Hawthornden, and several of the Codlins are all carrying good crops. Blenheim Orange is moderate, the same remark applying to King of Pippins, Cockle Pippin, Court Pendu Plat, Mère de Ménage, Stirling Castle, Peasgood's Nonesuch, and a red Apple which I imagine must be a local variety, as I have never seen it elsewhere. Lady Henniker, Gravenstein, some trees of Devonshire Quarrenden, Irish Peach, Early Madaline and Greenup's Pippin are almost failures this year.

I thought the cold wet season would have caused the fruits to be small and poorly coloured, but it is not so. We have had very fine weather for close on three weeks now, which has not only done fruit a lot of good, but also corn and hay.—W. T., *Ireland.*

Bougainvillea glabra.

When in perfect health, trained to the roof, and densely covered with its rosy or pale mauve bracts or flowers, few plants have a more striking effect than this climber. Unlike many others its season is not of short duration, but it keeps up a beautiful appearance for several weeks during the summer if not subjected to too high and moist a temperature. A warm greenhouse is probably most suitable to its culture, although it is generally grown in the stove or intermediate house.

It may be grown in pots, and trained over a balloon trellis, or in a border for covering a back wall, or training to the roof. The Bougainvillea thrives admirably in a compost of light fibrous loam, old lime rubble, with a sprinkling of coarse gritty sand, and a few half-inch bones and charcoal. When grown for training on the wall or roof it should be planted in a border about 3 feet wide and 2 feet deep, properly drained, by placing broken bricks and crocks 6 to 9 inches in thickness, with turves over the drainage to prevent it from becoming choked with loose soil. When filling the border the soil should be made firm, which to a considerable extent prevents the plant from making too gross a growth at first; and for a time after putting out the plant great care must be taken as regards the watering. But as soon as the border has got well filled with roots an abundance of water should be given with liquid manure every third time throughout the growing and flowering season.

Some people, I think, make a mistake in not pruning this plant closely enough. It is better to prune close to the old wood to one or two eyes, and in the early part of the growing season some of the young shoots may advantageously be rubbed off. The drying-off system should not be practised to the extreme, but keep the roots in a moderately moist condition throughout the winter, as is the case with Vines.

Young plants may be quickly reared from cuttings if taken off when a couple of inches long, and with a small portion of the old wood attached. These should be inserted by the side of the pot in a light sandy soil, and placed in a propagating frame. When rooted they must be at once potted, and afterwards repotted when necessary, using a somewhat lighter soil than that previously recommended for making up of the border - in fact till the plants have grown to a good size, and are in a fit state to be transferred to their permanent position.—Young Practitioner.

FRUIT FORCING.

Vines.—*Early Forced in Pots.*—This is the most advisable method of securing a supply of thin-skinned, fresh, ripe Grapes early in spring, which are a necessity in some establishments. The best varieties we have tried are White Frontignan, Foster's Seedling, Black Hamburgh, and Madresfield Court. The great evil in early forcing Vines in pots or anywhere is overcropping, the berries not attaining the size and perfection of colour and finish so essential to their high appreciation. Where bottom heat can be given to start them they will show their estimation of it, and the constant soft glow of moisture given off by the fermenting material in breaking freely. It is desirable to stand the pots on brick pedestals, placing the bricks loose and so high that the rims are slightly higher than the pit edge, the arrangement being such that the pots will be in the centre of the bed, which should be about 3½ or 4 feet wide and as much in depth. Leaves being placed in to fill the pit, a gentle warmth will be afforded the Vines, and the roots will pass from the pots into the leaves, deriving support beneficial to the health of the Vines, swelling and perfecting of the Grapes.

To have Grapes ripe at the end of March or early in April the Vines should not be started later than the early part of November, and they ought to be placed in position by the middle of October, so that they may have about a fortnight of preparation in the way of admitting air freely above 50°, this being secured by artificial means, and then the sap will become quickened, ready for starting the Vines away strongly when forcing proper commences. The canes must be depressed to a horizontal position, or lower, to secure them breaking regularly. Damp the canes morning and afternoon, but not keeping them constantly dripping with water. In an atmosphere kept at a temperature of 50° to 55° the buds will soon begin to swell, then gradually raise it day by day to 60° to 65° when they are breaking, allowing an advance of 10° to 15°

from sun heat. The temperature at the base of the pots ought not to exceed 75°, and it is better to commence with it at 65° about the pots, and increase the warmth as the growth advances. Water must be given very carefully at first, suffice that the soil be kept evenly moist, not in any case wet, as this retards rather than forwards root formation, and it is only when the Vines have leaves and evaporate largely that plentiful supplies of water are required.

Early Forced Houses.—Vines that are to furnish ripe Grapes with certainty next April should be started by the middle of November. It is not an advisable procedure to start Vines permanently planted at so early a season. Very early forcing places a great strain on them through their having to make growth when the natural conditions are at the worst for elaboration and assimilation, and to rest at the hottest part of the year, there being great danger of the foliage collapsing from attacks of red spider, or ripening too early from climatic conditions. This may cause the buds that are to furnish the next year's crop to start into growth at the time the Vines should be resting. It can only be avoided by retaining some lateral growths as an outlet for any sap which the roots absorb, and it will not do any harm, but good, by securing a considerable amount of stored matter, always provided the lateral growths are not allowed to interfere with the free access of light and air to the principal leaves. These laterals should be removed gradually and continually from late August until early September, so as to admit of the Vines intended for starting early in November or December by, or soon after, the middle of September, and they will not bleed, nor will the buds start into growth if the house be kept cool and dry. There is no need to wait until the leaves are all down, as the resting having set in there will not be any upward flow of sap ; but bear in mind this must have been secured by the gradual reduction of the laterals and the resting apparent, otherwise the pruning buds may start. If not already pruned lose no time in performing it, also the Vines to be started in December, not deferring pruning beyond the time the foliage commences to fall, so as to give the Vines a few weeks' rest.

Outside borders are a great mistake in early forcing Vines, especially Muscats, and whether heated below by hot-water pipes, or above by fermenting materials, not nearly equal to due internal provision for the roots. Still there are such borders, and have to be made the most of, or the Vines in them. The old practice of shielding them from the heavy autumnal rains by spare lights has not been improved upon, as it lets the border have the benefit of any sun that may appear, and that without depriving the soil of air. Thus later on the border can be covered with a good thickness of dry leaves or fern, with some litter on top, so placed as to throw off some of the wet, and the heat thus covered up remains most of the winter. Where there may be plenty of leaves and stable litter the well-tried practice of keeping out cold and getting some warmth into the border by placing them on top, renewing them from time to time, answers as well now as ever.

But we do not advise such procedure where better conditions obtain, yet adaptation to circumstances is a fine thing, and marks the cultivator as successful or otherwise. The very old practice of using fermenting material inside early forced vineries has not been bettered, as ridges of sweet fermenting material always give off heat, moisture, and nutrition, favouring good breaking and development of the growths, besides saving fuel. In the heap fashion ridges, like outdoor and indoor, for a very successful Grape-grower uses the stuff for growing Mushrooms and then spreads the beds over the border as a mulch for the Vines. Three parts of leaves, Oak or Beech, and one of stable litter, thrown into a heap a week or ten days before being placed in the house get warm, then placed in ridges on the border as shown in "Mushrooms for the Million ;" allowed to become hot, then turned a time or two, give out all the heat that starts the Vines, and the beds are spawned, earthed, and anon lots of Mushrooms appear, so there is a sweet air for the Vines after they start and the roots come into the sweet material.

The whole thing means abundance of nitrogen, for the old spawn decays along with the manure, prime stuff speedily passing into ammonia, and with occasional sprinklings of air-slaked lime soon gets into nitrate, and better, into the Vines. This may be a wrinkle for someone hard set to make ends meet. Anyway, we advise the ridges of fermenting material in early forced vineries, always using that rare article discriminative judgment where there are plants, sweetening the manure properly, or the foliage may be seriously injured by the vapour given off. Therefore mix well together when thrown into the heap, damping the materials if dry, turning when getting warm, again damping if necessary, and when well warmed through they are fit for placing in the house.

Midseason Houses.—Black Hamburghs, and other descriptions of thin-skinned black Grapes, have the colour taken out of them by hanging, and can only be lessened by keeping a good spread of foliage, or drawing a double thickness of herring-net over the roof lights. The latter is the preferable plan, as lateral growths interfere with light to the principal leaves, and the free access of air so desirable for maturing the wood. Those from which the Grapes have been cut may have the growths cut back to a few joints above the pruning buds, first curtailing the laterals and then cutting back the main growths. This insures the buds becoming plumper, whilst the freer access of light and air affects the wood favourably. A free circulation of air is necessary to expel damp, with a little constantly to prevent the deposition of moisture on the berries, a gentle warmth in the hot-water pipes being necessary when the external air is cold and damp ; but the wood being ripe and the growth matured it will suffice to maintain a temperature of 50°, and the cooler by day the house is kept the longer the Grapes will keep plump. Vines that have not the wood ripe should not have a less temperature than 60°, and this, with a free circulation of air, must be continued until there is no doubt on the point. Keep the laterals well in check, not allowing them to interfere with the chief growths. The border must not be allowed to become too dry, or the Grapes will shrivel, therefore afford a supply of water where necessary, always in the morning and on a fine day, so that air can be given and the superfluous moisture pass off. The watering will not do the least harm, for it is not moisture at the roots, unless excessive, that causes Grapes to spot and decay, but a confined stagnant atmosphere, moisture being condensed, it may be imperceptibly, on the berries that gives moulds their opportunity, which they never let pass by, but grow and multiply under the favouring circumstances. Keep well ventilated, and have no leaks in the roof, then all will be well with the Grapes.

Late Grapes.—Where the Vines were started in good time, say March, and aided in the spring by fire heat, as well as during the summer, the Grapes will be thoroughly ripe, in which state they can only be expected to keep satisfactorily, and the wood thoroughly matured ; all laterals or sprays may be removed down to the main buds, ventilating freely on all favourable occasions. Fire heat will only be necessary to prevent the temperature falling below 50°. Muscat of Alexandria, however, matures better in a temperature of 55°. To prevent dust falling on the berries, raking or sweeping must not be practised. Mats or clean straw laid over the inside borders will to some extent prevent evaporation. Outside borders need not be covered where the soil acts like a sieve, but where composed of somewhat moisture-holding material a covering against heavy rains is advantageous. Glass lights are best, wooden shutters good, and tarpaulin over dry bracken or straw answers well. A thick thatch of bracken or straw is very serviceable. Where the Grapes are not yet ripe the temperature must not be less than 70° to 75° by day and 65° at night, falling 5° through the night, allowing an advance to 80° or 85° from sun heat, continuing this until the Grapes are ripe, at least until the wood is brown and hard, for it is almost hopeless to expect good finish in Grapes that are not so by this time.

Young Vines.—The laterals must now be gradually cut back, letting the sun have a clear effect on the principal growths, not removing them all at once, but by degrees, getting them near the main rod with little further delay, so as to leave nothing but the chief cane or canes, and thus the principal leaves will plump the buds. Those having a tendency to continue growing to a late period may be checked by stopping the shoots moderately, facilitating the ripening by a high and dry temperature by day, starting of the heat and keeping the ventilators, except during frost, open at night. Afford water only at the roots to prevent the foliage becoming limp. This will harden the wood and tend to induce maturity of the growths.

THE FLOWER GARDEN.

Unsightly Flower Beds.—At this season of the year flower beds commence, from varying causes, to present a very untidy appearance, and the sooner the beds are put into a more orderly state the better in most cases. Where the beds have to be filled with shrubs and spring-flowering plants, as much as possible of this ought to be done before November. Dry weather should be chosen for this important work, as then it can be done without unduly disfiguring the walks and turf, and if the beds are a little on the dry side so much the better, nothing ever thriving so well when it is little better than puddled in. Therefore unhesitatingly break up the disfigured beds, and proceed at once with the work of refilling.

Hints upon Planting.—Nearly any kind or variety of Conifer in a small state looks well in masses, but the coloured forms of Retinosporas, Thuias, Cupressuses, Yews, and such like as specially prepared by the leading nurserymen for the flower garden, are by far the most effective. Variegated tree Box, Hollies in varieties, Berberises, Ivies, Osmanthuses, and Euonymuses are also admirably adapted for the decoration of flower beds, and with these may be associated Pernettyas, Cotoneasters, Skimmia japonica, and other berry-bearing plants. Very neat dwarf Rhododendrons in beautiful variety and well set with buds can also be had at a comparatively cheap rate, and these are very gorgeous late in the spring. Handsome trees 18 inches to 2 feet in height of the Conifers named are most effective when dotted among dwarf flowering and variegated foliage plants, and to these may well be added elegant Yuccas and variegated Iris. All transplant readily both now and again next spring, and if taken good care of are available for the beds several autumns in succession. Flowering plants, such as Wallflowers, Forget-me-nots, Silenes, Saponaria, Polyanthuses, Primroses, Daisies, Limnanthes, and others should, if provided in sufficient number, be planted rather thickly, as they seldom make much top growth, after being placed in the beds. See that they are in a moist state at the roots before they are lifted, move with a good ball of soil about the roots, and replant very firmly. Golden Pyrethrum, if not allowed to flower, will be available for replanting, and the smaller Beet from the flower borders or the kitchen garden will give a little colour for several weeks, and if the winter is mild look well till next summer, especially if the flower stems are pinched out. Old Violas should have straggling growths cut away, and if divided and replanted will present a very gay appearance next spring, flowering a little later than summer-rooted plants.

Spring-flowering Bulbs.—Freely used these enliven the flower garden surprisingly in the spring. Narcissi, Hyacinths, Tulips, Leucoiums, Crocuses, Scillas, and Snowdrops associate well with the shrubs and plants already named, or the beds may be principally filled with them and carpeted over with short neat pieces of tree Ivy, Box, Aucubas, Hollies, Laurels, Mahonias, and other evergreens, these presenting a fresh appearance, being a great improvement on the bare soil for several months, and

benefit rather than injure the bulbs underneath. Beds of Hyacinths in one colour edged with either Snowdrops, Crocuses, or Scillas in contrast are very gay, a change being afforded by a mixture of colours. The same remarks apply to Tulips and Narcissi, grouping them together answering better than general mixtures. In large beds circular patches of either Narcissi, Hyacinths, or Tulips might alternate with other flowering plants, or dwarf Conifers and shrubs, or they may be interspersed among the latter when these are thinly planted. If Hyacinths fill the centre of the bed dispose them 9 inches apart each way, while if the surface of the bed is carpeted with other plants, the bulbs may be put out 12 inches asunder with advantage, the crowns being covered about 4 inches deep. Where the soil is of a heavy nature surround each bulb with sharp sand; Narcissi to be treated similarly to Hyacinths. Plant the neat growing Tulips, notably the Van Thols, 4 inches apart and 3 inches deep, but the stronger varieties may be disposed 6 inches asunder. A little fresh gritty soil benefits Tulips, and the choicer varieties ought certainly to receive this extra attention. Snowdrops, Scillas, Crocuses, and Winter Aconite are most effective near the margins of beds, and planted in double lines or circles. Plant 4 inches deep, and not more than 3 inches apart. On light warm soils Ranunculuses may be planted in November, but where the soil is of a cold clayey nature keep them out of the ground till a favourable time arrives for planting in February.

Shrubby Calceolarias.—As yet these plants cannot well be dispensed with in the flower garden, and a good stock ought to be raised. It is not yet too late to insert cuttings. No bottom heat is required, but it is advisable to raise shallow frames well off the ground with the aid of old hotbed material not far advanced in decay; also partly fill the frame with the same and then cover with about 4 inches of light loamy soil, on this placing 2 inches of sifted soil, making this firm and level and facing over with sharp sand. Select short, firm, flowerless shoots; cut these below the third joint, and trim off the lower pair of leaves. Dibble them in at once and just clear of each other, taking care that the cuttings touch the bottom of the holes, fix firmly, and give a gentle watering. Keep the frame close and shaded from bright sunshine till the cuttings freshen up and fail to flag when the sun shines on them, after which ventilate freely in order to keep them as hardy as possible. Protect from severe frosts only.

Bedding Violas.—Autumn-rooted plants of these are by far the best for summer bedding, and properly treated they are unrivalled for brilliancy, especially during the early part of the season. Although much hardier (they are quite hardy in fact) Violas succeed admirably under precisely the same treatment as Calceolarias. Prepare frames as for the latter, and select the young shoots springing from the centre of the old plants; make these into short cuttings, dibble them in rather thickly, and treat exactly as advised in the case of Calceolarias. Failing plenty of the young central shoots make the best of the flowering tops into cuttings, as these will develop into very good plants, fresh growths springing up from below the surface next spring.

THE BEE-KEEPER.

The Season's Review.

At this season, when all is quiet in the apiary, and bee-keepers are comparing notes as to the result of the honey harvest, it may be of interest to state how the bees have fared from a honey producer's point of view in this district (South Yorkshire) when compared with those in the southern and more northern parts of the country. From an extensive correspondence with bee-keepers in many districts one is able to form a pretty correct opinion of what the harvest has been.

Bees throughout the country wintered badly. Never before, even in the most severe winters experienced during the past quarter of a century, were there so many losses chronicled, clearly showing that it was not owing to a low temperature. The winter was very mild; the lowest temperature registered was on January 24th—the thermometer on that date showed 14° of frost. The dull wet autumn of last year was the cause of bees wintering so badly, as during September 4·51 inches rain fell on twenty-five days. The following month 3·61 inches rain fell on twenty-three days.

It is during the autumn that the bees are bred that will live throughout the winter, and provide strong colonies the following spring. If from any cause the queen is prevented from carrying out her maternal duties the stock will suffer in a marked degree. From the above figures it will be seen that the bees were confined to their hives throughout the month of September. The result was at once seen. Breeding was at a standstill. The old bees, with which the hives were crowded, died off, as is usual at this season, in great numbers, and there were not sufficient young bees to take their place. The winter continued wet and mild, many colonies gradually dwindled, and were unable to recoup themselves.

The Weather and its Influences.

The above clearly shows the influence of the weather on bee-keeping, and the necessity of giving the bees assistance at the proper time. Although strong colonies may be well provided with stores to tide over the winter, it is a great advantage to supply each stock with a small quantity of thin syrup daily throughout September if the weather is dull and showery. This will have the effect of keeping the queen laying. I have no hesitation in recommending this plan, as several stocks in my apiary that were treated in this manner last autumn were far away my best colonies in the spring. This is a better plan than uncapping sealed stores in the autumn, although it answers remarkably well in the spring, when sealed stores are plentiful.

Unfavourable weather prevailed throughout the spring. A few fine days about the middle of May started the bees working in earnest. This was followed by dull, showery weather. June 12th and 13th were perfect days for honey production, being bright and warm, a shade thermometer on the latter date registering 86°. White Clover was fast coming into bloom, and as many stocks were strong and crowded with bees there was a great promise of a good honey harvest. Bee-keepers, however, were again doomed to disappointment, as dull weather again set in, and for three weeks the honey collected was only sufficient for the daily requirements of the bees.

The Swarming Mania.

The past season will be remembered by many bee-keepers on account of the swarming propensity of their bees and the number of fly-away swarms, the cause of which is not difficult to trace. During the honey flow, if the weather is warm and bright for a week or two in succession, the bees will settle down to work, and if ample space is provided for them to store a surplus little swarming will take place if due attention is given to shading and ventilation. But if after a day or two of excessively hot and bright weather, as experienced on the above dates, a spell of dull weather sets in, the bees will form queen cells and prepare for swarming, and when this takes place it is very difficult to prevent them doing so.

After three weeks of dull weather it again set in very hot on July 11th, and continued for several days. Bees were swarming in all directions. In an apiary of upwards of thirty stocks not a solitary swarm came off, but three colonies, not 100 yards away, managed on a different system, all swarmed. The queens were removed and the bees returned to their hives.

Late Crop of Honey.

The bright weather that prevailed throughout the country for at least a month from the above date was the means of a great amount of honey being stored. It was too late for the White Clover as the bulk of it was over, but the Limes were in full bloom, and the bees stored freely from this source. The season, however, was soon over, owing to the great heat, and instead of having to chronicle a failure, a really handsome surplus was stored in a very short space of time. In this district there has been quite half an average crop of honey harvested.

A bee-keeper in the West of England, writing early in July, says, "Our bees have done remarkably well; we have a grand crop of honey, and the best in every way we have had for years." Vegetation being earlier in that district, the bees were enabled to store a surplus during the fine weather that prevailed early in June.

In Northumberland and neighbouring counties there has been quite a "record" honey harvest, the White Clover being in full bloom when the bright weather came in July, and as the crops did not suffer as much from the drought in those districts, the bees were enabled to store a much larger surplus than those in the southern parts of the country, where vegetation was very much parched up; and it was only from the early flowers that bee-keepers in the south were able to obtain, in many instances, only a very scanty harvest. The honey generally has been of good quality. In this district it has been the best obtained for several years.—An English Bee-keeper.

TRADE CATALOGUES RECEIVED.

R. H. Bath, Wisbech.—*Bulbs, Carnations, Roses.*
W. & J. Birkenhead, Sale, Manchester.—*Ferns and Selaginellas.*
J. Carter & Co., High Holborn.—*Autumn in the Garden and Greenhouse.*
J. Cheal & Sons, Crawley.—*Trees and Shrubs.*
W. Cutbush & Son, Highgate.—*Carnations and Pinks.*
Dicksons & Co., 1, Waterloo Place, Edinburgh.—*Roses.*
W. Johnson & Sons, Smallbrook Street, Birmingham.—*Dutch and other Bulbs.*
Pape & Bergmann, Quedlinburg.—*Seeds and Bulbs.*
W. Paul & Son, Waltham Cross.—*Roses.*
A. W. Pike, Cardiff.—*Carnations and Picotees.*
A. Roozen & Son, Overveen, Haarlem.—*Bulbs.*
J. Russell, Richmond, Surrey.—*Bulbs.*
E. Webb & Sons, Wordsley, Stourbridge.—*Seed Corn.*

TO CORRESPONDENTS

*** All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," **8, Rose Hill Road, Wandsworth, London, S.W.**, and **NOT** to Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Preserving Angelica (*W. Hubbard*). — The stalks of Archangelica officinalis are occasionally candied with sugar, and when so prepared are used in desserts by those who esteem them to "stimulate the stomach." The stalks have been also blanched and used in salads in the same way as Celery. We are unable to give you the details of preserving, but presume they are much the same as for Lettuce stalks and ginger. If any of our readers can supply the necessary particulars for preserving Angelica, we will readily publish them.

Paris Green as a Winter Dressing for Fruit Trees (*A. P. G.*).—It has been found, by many trials and carefully conducted experiments, that Paris green, applied to the stems and branches of fruit trees in October, has absolutely no effect on the eggs of the winter moth. There is nothing to equal the caustic soda and crude potash wash for cleansing branches of filthy incrustations when the trees are in a dormant state (see reply to "Pat"). We are glad you have found Paris green in other ways so beneficial to your trees. Thousands of winter moths have been caught by sticky bands applied towards the end of October or early in November.

Chemical Manure for Strawberries (*Henton*).—Nitrate of soda, 2 cwt.; dissolved bones, 5 cwt.; kainit, 10 cwt.. This very full dressing per acre should be applied as follows :—The kainit and phosphate in autumn, pointing in lightly; nitrate of soda sown broadcast in the following spring after the plants are well started, but before any bloom appears, having it crushed fine, and taking care to apply the nitrate when the leaves are quite dry. Ordinarily half the amounts quoted suffice per acre. We have used a mixture of bone superphosphate and kainit in equal parts in autumn at the rate of 5 cwt. per acre, and 2½ cwt. of nitrate of soda in the spring, with good results, especially on light land.

Destroying Weeds and Moss with Arsenical Preparation (*J. T.*).—Dissolve 1 lb. of powdered arsenic in 3 gallons of cold water, boil, and keep stirring; then add 7 gallons of cold water and 2 lbs. of crushed soda. Stir the whole well whilst boiling, and with a rose watering-pot apply to the walks in dry weather, from March to May inclusive being the best time. The above quantity will be enough for 25 square yards. An inclining board should be placed at the sides of the walks or grass to keep off the hot liquid. If you have Box edgings the soda and arsenical solution must be kept from them, otherwise they will be killed. Caution: Very poisonous. There are other methods of preparation, but why not obtain a ready-made weed killer?

Mushrooms in Pastures (*J. T. W.*).—The insertion of Mushroom spawn in pastures has been attended with good results in some cases, but without success in many others. Both the soil and weather must be favourable for the growth of the Mushroom plant within the soil. The best practice is to prepare some manure as described in "Mushrooms for the Million;" and from the middle of May to the middle of June, just as dry weather prevails, or a prospect of it is likely, take out squares of turf about 3 inches deep and the size of a spade, removing sufficient soil to admit of a large forkful of the manure, and in the centre of this place about a quarter of a brick of spawn, replacing the turf at once and treading and beating it down to make hard and level as before removal. Elevated parts of the ground are better than damp hollows. Crushing and sowing spawn over a field to the extent of a bushel or so provides the requisite legal conditions for prosecuting, as any Mushrooms that appear are then regarded as "cultivated," though the process itself does not bring them. A dressing of salt 5 cwt. per acre in February has been followed by abundance of Mushrooms, and also benefits pastures, especially in dry districts. "Mushrooms for the Million" can be obtained by post from the publisher, 171, Fleet Street, London, in return for 1s. 2d. in stamps.

Large Beans (*No Name*).—It is contrary to the rules of the *Journal of Horticulture* to insert communications from correspondents who withhold their names and addresses from the Editor, though the names of writers are never published against their wishes. It is not, of course, necessary for regular contributors to sign their names on each MS., as they are perfectly well known.

Freaks of Fungi (*J. Smith*).—The small Mushroom-like specimen you send is exactly the shape of those familiar round bread loaves with a small "naggin" on the top. You may call it, if you like, a Mushroom two storeys high. When the small tubercular growths form in a dense mass some of them get displaced by the pressure, and occasionally become piled one on the other, those elevated, if resting closely, being supported through the tissues of others below.

Artificial Manure for Black Currants (*H. T.*).—Sulphate of ammonia, ½ cwt.; dried blood, ¼ cwt.; fish meal, ¼ cwt.; dissolved raw bones, dry and crumbling, 2 cwt.; muriate of potash, 1 cwt.; these = 4 cwt. Apply now, or after the late autumn or early winter pruning, forking-in lightly. For use as soon as the buds commence swelling in the spring - nitrate of soda, ½ cwt., and mineral superphosphate, 37 per cent. soluble phosphate of lime, ½ cwt., distributing evenly when the ground is moist. The dressing is for 1 acre. The dressing is a full one, half sufficing if only moderate growth is wanted.

Keeping Catillac Pears (*A. G. G.*).—A sweet cold cellar inclining to be damp would be better for the fruits than a very dry room. We have more than once found fruits of this Pear that have passed the winter among the grass of an orchard as sound in the spring as when they fell from the trees six months previously. This is mentioned as proving the hardiness of the "Iron" Pear. We have known the fruits to shrivel in very dry rooms. If you keep yours firm they will realise more money in the spring than at the present time. There is not infrequently a good demand for them in March and April.

Apple for Forming a Screen (*R. W.*).—A gardener who has practised at an altitude of nearly 700 feet above sea level says:—The closest growing, hardiest Apple for forming a screen to the north was Hunthouse, a rather small tree, with somewhat pendulous growths, of immense productiveness. The trees were 3 feet apart, cut hard back, and grown exactly like a Thorn hedge, only the knife was used instead of a bill or shears. Inside this was another hedge of Carlisle Codlin, 7 feet 6 inches from it, a free-growing variety when young, but bearing early, soon getting hedge like, and that gave fruit in abundance from August to December. The outer hedge was kept 4 feet, and the inner 6 feet high. In another place, but in one hedge, he had Manx Codlin, fruit in season August till November; Minchull Crab, November to March; and Northern Greening or "Robin," November to April, the object being to get a long succession of useful culinary fruit; but the trees did not succeed well so mixed, as the Northern Greening outgrew the others. As the result of his experience he recommends - for a low screen, Manx Codlin on English Paradise; tree very hardy, remarkably healthy, early and abundant bearer. For a medium-sized screen.—Minchull Crab, also on English Paradise; tree very hardy, not subject to canker or plagues of insects, and an abundant bearer. For a large screen.—Northern Greening on English Paradise; tree very hardy, strong grower, and abundant bearer. Distance, 2, 3, and 4 feet respectively. Perhaps some of our correspondents can improve upon the three varieties, but the condition is they must be of undoubted hardiness.

Growths on Vines (*Pat*).—The small warts, or excrescences, are caused by the piercing of the tissues of the Vine at the junction between spur and rod, where there are probably aërial roots, by the beaks of the Grape Vine louse (Phylloxera vastatrix). There are present in the rough parts the hibernating form, a most remarkable thing, and probably a consequence of the whole border being "sour and bad," so much so with wetness that the insect chose to hibernate on the rods rather than on roots, as usual. Of course, there are other things belonging to this most disastrous insect pest of the Grape Vine, and we are going to tell of a very simple mode of killing it. 1, Remove the warts, or excrescences, such as those you sent us, and burn them; prune early, and then dress every part of the Vines above ground with the following solution—Caustic soda, 98 per cent. purity, 2 ozs.; crude commercial potash (carbonate of potash, or pearlash), 2 ozs.; water, 1¼ gallon. Dissolve each separately in a pint of water, add together, then the remainder of the water boiling. Apply with a clean half-worn paint brush, reaching well into every angle, hole, and crevice, the solution being at a temperature of 130° to 140°, and not used excessively, but taking care to wet every part of the rods and spurs. Loose bark may be removed, but do not peel the rods or spurs into the quick or live bark. Carefully collect and burn all the prunings and peelings. Having attended to the rods, rake off any loose surface material, not injuring the roots, and char it on the rubbish heap. Then water the border with a solution of Little's soluble phenyle, 1 part to 96 parts of rain or soft water—that is, a quarter of a pint to 3 gallons of water, and apply with a rose watering can, giving the amount quoted, or 3 gallons per square yard of the solution duly stirred, then a milk-like preparation. The soil must be moderately moist, so that the solution will enter and moisten the whole evenly, without having to give an extra dose to effect it. It will not matter if the soil be already wet, for the solution will force the excess water out or take its place. The pest chiefly acts on the young roots near the surface, and especially near the stems or collars, therefore apply from these outwards, but to every part of the border. The solution of soluble phenyle may be used again just before the Vines start into growth. It acts as a manure, which will show itself in the Vines next year. Caution: No other form of phenyle or phenol may be used, it being absolutely imperative that this be soluble.

Saccolabium bellinum (*Young Orchidist*).—You will find on page 309 an illustration with a note, which will probably give you all the information you require. If it is not so, write again.

Name of Caterpillar (*Semper Fidelis*).—The specimens sent are those of the Privet hawk moth (Sphinx Ligustri), a species generally distributed over England, but more abundant in some districts than others. It feeds chiefly upon the shrub from which its name is taken, but is also found upon Lilac, occasionally upon Apple. It has been said to eat Laurustinus, but this is rather doubtful. Some seasons the caterpillars are numerous enough to leave signs of their residence on the Privet hedges. While young they are apt to escape notice, being much the colour of the foliage. When nearly full grown they usually mount the upper twigs at night or early morning, and in the day retire to the interior of the bushes, probably to escape hungry birds, to which such a fat caterpillar might be a tempting morsel. During September they descend some depth into the ground, and form a chamber, where the chrysalis reposes till the months of June or July.

Rose of Sharon and Star of Bethlehem (*John Thomas*).—You ask "under what name the Rose of Sharon goes in Johnson's Gardeners' Dictionary." It goes under no name so far as we can see in the last edition of that work. Neither is it included in the list of popular names in Sanders' Encyclopædia; but in this work it is found in parenthesis after "Hypericum." In many districts the name is commonly applied to Hypericum calycinum—a low, half-shrubby evergreen. But this cannot be the plant you have in view, as you say the "bulbs have come from Jerusalem." There has thus possibly been a mistake in writing down the popular name "Rose of Sharon" instead of "Star of Bethlehem." This is given in the Dictionary under its popular heading, with a reference to Ornithogalum umbellatum, a British species. Sanders does not include Star of Bethlehem in his popular name list, but we find it in his work under Ornithogalum, with a reference to O. longibracteatum, the familiar "Onion plant" of cottage windows, and a native of the Cape of Good Hope. The fanciful name Star of Bethlehem seems to have become attached to the Ornithogalums as a genus, but it would seem to be more strictly applicable to O. armeniacum than to the species above named, as this is a native of the country in which both Jerusalem and Bethlehem are situated—Armenia. Your bulbs may therefore be those of the Armenian species. It is hardy, as also is O. umbellatum, but O. longibracteatum is not.

Names of Fruits.—*Notice.*—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. *In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing.* The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. *They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state.* (*W. J.*).—A fine specimen of Hollandbury. (*A. T. S.*)—1, Beauty of Kent; 2, Warner's King; 3, Annie Elizabeth; 4, Tower of Glamis; 5, Potts' Seedling; 6, Beurré Diel. (*I. G.*).—1, Bismarck; 2, Sandringham; 3, Egremont Russet. (*H. R. M.*).—1, Blenheim Pippin; 2, Annie Elizabeth; 3, Lord Derby; 4, King of the Pippins.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*R. B.*).—1, Rudbeckia nitida; 2, Helianthus rigidus Miss Mellish; 3, Anemone japonica alba. (*F. F.*).—1, Helenium autumnale; 2, dead; 3, Adiantum pubescens; 4, Asplenium bulbiferum. (*C. H., York*).—According to your letter the specimens were packed on the 23rd inst., and then misdirected, and had to be reposted, not arriving at their destination till the 28th, a Sunday intervening, with its no postal delivery in London; the natural consequence of such delay was the drying of the samples beyond all possibility of identification.

GARDENERS' CHARITABLE AND PROVIDENT INSTITUTIONS.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—*Secretary*, Mr. G. J. Ingram, 50, Parliament Street, London, W.C.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—*Secretary*, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

ROYAL GARDENERS' ORPHAN FUND.—*Secretary*, Mr. A. F. Barron, The Royal Gardeners' Orphan Fund, Chiswick, W.

COVENT GARDEN MARKET.—SEPT. 29TH.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	1 0	to 3 0	Grapes, lb....	0 8	to 2 0
Cobs	22 6	25 0	Lemons, case	11 0	14 0
Filberts, 100 lbs.	25 0	0 0	St. Michael's Pines, each	3 0	8 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, ½ sieve	0 0	0 0	Onions, bushel	3 6	4 0
Beet, Red, doz	1 0	0 0	Parsley, doz. bnchs	2 0	3 0
Carrots, bunch	0 3	0 4	Parsnips, doz	1 0	0 0
Cauliflowers, doz.	2 0	3 0	Potatoes, cwt.	2 0	4 0
Celery, bundle	1 0	0 0	Salsafy, bundle	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Seakale, basket...	1 6	1 9
Cucumbers...	0 4	0 8	Scorzonera, bundle	1 6	0 0
Endive, doz.	1 3	1 6	Shallots, lb.	0 3	0 4
Herbs, bunch	0 3	0 0	Spinach, pad	0 0	0 0
Leeks, bunch	0 2	0 0	Sprouts, ½ sieve	1 6	1 9
Lettuce, doz.	1 3	0 0	Tomatoes, lb.	0 4	0 0
Mushrooms, lb.	0 6	0 8	Turnips, bunch	0 3	0 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var. doz. ...	6 0	to 36 0	Ficus elastica, each	1 0	to 7 0
Aspidistra, doz....	18 0	36 0	Foliage plants, var., each	1 0	5 0
Aspidistra, specimen ...	5 0	10 6	Fuchsias, doz.	3 0	5 0
Chrysanthemums, per doz.	4 0	9 0	Heliotropes, per doz. ...	3 0	5 0
,, ,, single plants	1 6	2 0	Lilium Harrisi, doz.... ...	12 0	18 0
Coleus, doz.	2 6	4 0	Lycopodiums, doz.	3 0	4 0
Dracæna, var., doz.	12 0	30 0	Marguerite Daisy, doz. ...	4 0	9 0
Dracæna, viridis, doz. ...	9 0	18 0	Mignonette, doz.	4 0	6 0
Euonymus, var., dozen ...	6 0	18 0	Myrtles, doz.	6 0	9 0
Evergreens, var., doz. ...	4 0	18 0	Palms, in var., each... ...	1 0	15 0
Ferns, var., doz.	4 0	18 0	,, specimens	21 0	63 0
Ferns, small, 100	4 0	6 0	Pelargoniums, Scarlet, doz.	2 0	4 0

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms ...	3 0	to 5 0	Lily of the Valley, 12 sprays	1 0	to 2 0
Asparagus Fern, bunch ...	1 0	2 6	Marguerites, 12 bnchs. ...	2 0	3 0
Asters, bunch	0 2	0 6	Maidenhair Fern, doz. bnchs.	4 0	8 0
Bouvardias, bunch	0 6	0 8	Mignonette, doz. bnchs. ...	2 0	4 0
Carnations, 12 blooms ...	1 0	3 0	Orchids, var. doz. blooms.	1 6	12 0
,, doz. bnchs. ...	3 0	6 0	Pelargoniums, 12 bnchs. ...	4 0	6 0
Chrysanthemums, 12 bnchs.	4 0	6 0	Pyrethrum, doz. bnchs	1 6	4 0
,, ,, 12 blooms	0 6	2 6	Roses (indoor), doz.... ...	0 6	1 0
Cornflower, doz. bnchs. ...	1 0	2 0	,, Tea, white, doz. ...	1 0	2 0
Dahlias, doz. bnchs.... ...	2 6	6 0	,, Yellow, doz. (Niels)	1 6	4 0
Eucharis, doz.	2 0	3 0	,, Red, doz. blooms ...	0 9	1 0
Gardenias, doz....	1 6	2 0	,, Safrano (English) doz.	1 0	2 0
Geranium, scarlet, doz. bnchs.	3 0	4 0	,, Pink, doz....	1 0	2 6
Gladioli, doz. bnchs. ...	6 0	21 0	,, outdoor, doz. bnchs.	3 0	6 0
Lilium lancifolium, bnch.	1 6	2 0	Smilax, bunch	1 6	2 6
Lilium lancifolium, short, per 12 blooms	1 0	1 6	Sunflowers (various)... ...	2 0	4 0
Lilium longiflorum, 12 blooms	3 0	4 0	Tuberoses, 12 blooms ...	0 3	0 4
			Violets, doz. bnchs.... ...	1 6	2 0

SWINE FEVER.

WHEN Richard of the Lion Heart ruled, or rather allowed others to misrule in his name, in this pleasant England of ours were vast tracts of unreclaimed forest land, beautiful in its diversity, and affording in its sylvan retreats shelter and food for animals of the chase, as well as those peculiarly adapted for the domestic spit.

What our forefathers would have done without the homely swine we know not. How we ourselves should feel were the pig removed at once and for ever from our list of food supplies, we know very well. In this climate, where we have far more cold days than warm ones, we need a large amount of fatty matter to help keep up our vitality. We have pig served in a hundred ways, and on every table, save those purely Jewish. The fat is not so repugnant to the delicate stomach as the fat of other animals. It is easily cooked, and makes a tasty relish, and above all, on the list of animal food, we find in it so much greater proportion of meat to the bone. This makes it intrinsically cheaper. It can be bought in small quantities at the tiny village shops,

and, well cured, it is not liable to deterioration arising from sudden changes in the weather. Hence arises its popularity, a popularity which it will take a revolution to check.

If we could have wandered in the forests of Rotherwood side by side with Gurth and Wamba, we should have been amazed at the appearance of their porcine charges. The pig now is so truly an animal of the homestead, that we should hardly have identified their long, lean, hungry, wild looking, half savage drove with our sleek, indolent, Barley-fed friends, and yet we doubt not what they lost in flesh, and form, and pedigree, was made up to them by a greater delicacy of flavour. There would be a gaminess about their bacon that we miss. Fancy the nuttiness imparted by an unrestricted diet of acorns, beech masts, and the thousand and one dainties of the woodland banquet. We get weight with our meal and Potatoes, our fore-elders got flavour; just as at the present time there is such an infinite difference between the Indian corned pheasant and his really wild brother. A veritable novice can tell the difference at the first mouthful.

Up to late ears pigs were fairly exempt from all ills save concussion of the brain and sore throat; now we never take up a paper without a record of closed pig markets and a fresh outbreak of disease in some part of the country or another. Swine fever is the name given to this tiresome disease, and it appears that although compulsory slaughter is insisted upon when any case is reported to the authorities, the disease is by no means vanquished, but barely kept in check. Like rinderpest or cattle plague, swine fever is in England a comparatively new disease.

It appears that in the year 1862 there was in Berkshire an outbreak of disease of a most virulent nature, which was specially investigated by Professor Symonds. Unhappily no measures were taken to prevent the spread of this disease till 1878, when the public began to wake up to the fact that something must be done of a preventive nature. In December of that year an order was passed providing for slaughter of diseased swine by the local authority, and also this authority had the power to slaughter swine which had been in contact with the disease. There were also certain regulations respecting the moving of swine from suspected places except by licence.

For four years these measures were carried out, but with little success—*i.e.*, the disease was not really checked. In 1892 there was a certain reduction in the number of cases reported, but the reduction arose from two facts: Firstly, that there were fewer pigs in the country; secondly, because as the local authorities made no compensation to the owners of animals slaughtered, there was an unwillingness on the part of those owners to report doubtful cases.

It seems almost an impossibility that this disease should wear itself out, as some diseases will do. It is of the most virulent nature, both infectious and contagious, and the infection can be imparted from herd to herd in the most unsuspected manner. Things being in this state, the Board of Agriculture appointed a committee to inquire into certain matters relating to swine fever; this was in February, 1893. The committee all agreed as to the very serious nature of the disease, and were unanimous in their recommendation that the work of exterminating the disease should be placed in the hands of a central authority. This central authority should be empowered to slaughter, and pay the cost of the execution of the Act and orders. Slaughter of diseased animals and restriction of "suspects," with thorough and proper cleansing and disinfecting of sties or yards, were absolutely necessary.

Usually the disease is acute and rapid in its action, and again there are cases which are more or less chronic, and would be unnoticed by the casual observer. A pig may appear to be what is called "unthrifty," and yet when a post-mortem examination takes place there may be most convincing evidence of the presence of this disease.

The Board of Agriculture have issued their report for 1896 on the "Diseases of Animals," and we find from that report that swine fever still continues to be the most obstinate of all the zymotics.

This disease continues to break out in the most unsuspected places, and where the source of infection baffles all investigation. Last year the Department examined 23,137 suspected cases, and found 5166 outbreaks. Swine owners appear to be very much on the alert, and by reporting at once any doubtful cases give the inspectors every chance. The report says, "The great factors in perpetuating swine fever will always be pigs which are affected with that disease in the less fatal and unrecognisable form. These animals are constantly distributing the germs of swine fever through their highly infectious evacuations, wherever they may be taken during the whole period of their illness, and the final extinction of the malady must depend upon the possibility of enforcing measures which will have the effect of preventing the movement of pigs affected with swine fever in this particular form."

A word in conclusion. Our losses from actual death and the closing of markets have been enormous. No farmer knowingly keeps a doubtful cow or bullock on the premises an hour longer than he can help. Why not extend the same rule to pigs? We fear it is not the farmer who in this case is to blame, but those hundreds of small pig owners who will doctor and drug ailing pigs as long as there is breath in their bodies, and who are not very careful as to the disposal of those bodies when merciful death at last supervenes.

WORK ON THE HOME FARM.

We have made good headway with autumn cultivation since our last, and a couple more days will see the last of the twitch fired. We shall not plough the land at present, as a few bits near the surface may grow, and another harrowing in October would make a clean sweep of them.

Lea is about all ploughed, and is being rolled with the ring roller. This must not be neglected if a good plant of Wheat is to be secured. A low-lying piece of land, too strong for ordinary autumn dressings and rather foul, is now being ploughed deep and wide with the chilled plough for the purpose of leaving it as rough and open as possible. It will be left thus through the winter, and we hope it will get a thorough freezing.

Not much Wheat is grown now on summer fallow; but where it is to be so grown the sooner it is sown the better. Mid-October is early enough after lea, and on lighter soils a week or two later would be advisable. There is a fashion for winter Oats and Barley, and we often see the seed of such advertised. Winter Oats come to maturity early, and often command a good price. Winter Barley we do not care for.

We still stick to Square Head and Square Head's Master as being the most profitable kinds of Wheat to sow, but for lighter soils we should prefer Royal Stanhope or White Queen. We have heard an excellent character given of the latter by a large Wheat grower.

There has been a good deal of Wheat smut, or, more properly speaking, "bunt" about; this is most likely due to the neglect of dressing the seed before drilling. There are many mixtures recommended for the purpose, every local chemist having one of his own, but as the valuable constituent in them all is blue vitriol, we prefer to buy it in the vitriol form. One pound of finely powdered blue vitriol will be sufficient to dress a quarter of seed. It must be well dissolved in water before application, and after the Wheat must be well turned so as to insure the damping of every grain with the solution.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

DATE.	9 A.M.					IN THE DAY.				
1897. September.	Barometer at 32° and Sea Level.	Hygrometer.		Direction of Wind.	Temp. of soil at 1 foot.	Shade Temperature.		Radiation Temperature		Rain.
		Dry.	Wet.			Max.	Min.	In Sun.	On Grass.	
	Inohs.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Inohs.
Sunday 19	29·773	50·8	46·5	W.	53·5	57·3	38·1	105·7	34·0	0·056
Monday 20	29·880	53·0	49·4	N.	53·4	61·9	47·4	108·1	47·1	0·010
Tuesday 21	29·721	57·2	54·0	W.	54·2	67·0	49·1	107 9	45·0	—
Wednesday 22	29·954	52·2	48·9	W.	54·1	59·0	46·2	82·9	39·4	—
Thursday .. 23	29·830	56·0	53·7	W.	54·1	68·0	51·1	108·6	45·8	—
Friday 24	29·923	62·7	56·1	S.W.	56·0	67·9	54·1	110·5	52·1	0·021
Saturday .. 25	30·214	56·4	50·4	N.	56·6	67·4	47·9	104·6	42·0	0·011
	29·899	55·8	51·3		54·6	64·1	48·3	104 0	43 6	0·098

REMARKS.

19th.—Sunny morning; overcast from 2 P.M.; rain in evening.
20th.—Dull early; bright sun from 10 A.M.
21st.—Rain early; bright sunshine from 9.30 A.M. to 3 P.M.; cloudy after.
22nd.—Fair, but almost sunless.
23rd.—Bright sun all morning; frequently cloudy in afternoon and evening.
24th.—Overcast, with high wind in morning; frequently sunny in afternoon.
25th.—Bright sun from sunrise, but hazy from 10 A.M.; cloudy from noon with frequent drizzle; solar halo at 0.30 P.M.

A dry week, temperature near the average.—G. J. SYMONS.

Journal of Horticulture.

THURSDAY, OCTOBER 7, 1897.

THE JOURNAL OF HORTICULTURE *can be obtained from the Office,* 171, *Fleet St., London, post free for a Quarter,* 3/9. **Editorial communications must be addressed to 8, Rose Hill Rd., Wandsworth, S.W.**

PROGRESS IN FRUIT AND VEGETABLES.

CONSIDERING the nature of the season, and the sparsity of fruit in many districts, the Fruit Show held at the Crystal Palace last week, under the auspices of the Royal Horticultural Society, must have fully equalled, if not excelled, all reasonable anticipations. Though not appearing on the "face of it" so large as the show of last year, it was really larger, upwards of 6000 dishes being staged. The method of arrangement was different, this being governed by the site at disposal, and though the effect may not have been so imposing at a glance as that presented at previous exhibitions, the magnitude of the display seemed to grow on the minds of visitors as the several exhibits were re-inspected, and practically the method of arrangement was more convenient than that resorted to on previous occasions.

With these preliminary remarks, and the registering of a well-deserved compliment to Mr. S. T. Wright of Chiswick, and Mr. G. Caselton, the Garden Superintendent of the Crystal Palace, for their successful exertions in the disposal of the produce, for the convenience of Judges and visitors, we leave the show itself, or rather delegate a description of it to a subsequent page, and pass to a feature in connection with the event that is worthy of prominent attention.

Having in view a great historic fact, which only needs an allusion for its being understood, it will be conceded that the word "sixty" represents the golden number of the present year. There are "sixty" medallists who will receive their decorations one of these days, the exact date of which, if all we hear is correct, is due to an accident, for which the Royal Horticultural Society is not responsible; and then, as was natural under the circumstances, a narrative of "Progress in Horticulture" suggested a theme on which experts might expatiate for the general edification. A "conference" was thus arranged, to extend over the three days of the show—namely, on "Progress in Fruit Culture" during Queen Victoria's sixty years' reign, opened by Mr. G. Bunyard, F.R.H.S.; in "Vegetable Cultivation," by Mr. A. W. Sutton, F.L.S.; and in "Market Garden Cultivation," by

Mr. J. Assbee, F.R.H.S.; and all who had the privilege of attending the meetings will be satisfied that no gentlemen more competent could be found to deal with these important subjects.

Only an outline of the general character of the addresses delivered will be given here. They will presumably be found *in extenso* in a forthcoming issue of the Journal of the Royal Horticultural Society that will be distributed amongst the Fellows; and here let it be said that the contents of the periodical issues of the Society's official organ seem to become more and more interesting, and at least equal in value the amounts of the subscriptions of the great majority of the Fellows to the Society.

Taking the subjects in the order above mentioned, Mr. Bunyard, in his "Progress in Fruit Culture," first gave an outline of the character of a well-kept garden in 1837, mentioning the varieties of fruits that were then generally grown against walls and on borders of diverse aspects. He brought under review Apples, Pears, Plums, Cherries, Apricots, Strawberries, and other kinds which were then the most popular. He pointed out the extreme care of the gardeners of old in the management of wall trees, and feared that such care was rarely exercised now, the modern gardener depending more on under glass produce.

The essayist went on to recognise the work of the old masters in advancing the art of fruit culture, such as Messrs. Ronalds, Thompson, Wilmot, Pearson, and especially Mr. Thomas Rivers—the "father of garden or bush tree culture"—who did such good work in improving the quality of British fruit. Nor were what may be termed legislative and mechanical matters overlooked, such as the abolition of the glass duty in 1845 and the introduction of heating by hot water, with the invention of the tubular boiler by Mr. E. Weeks in 1835, and its subsequent improvement.

Mr. Bunyard also naturally adverted to the exhibitions and conferences of the past as giving great stimulus to fruit culture, especially the Apple Congress at Chiswick in 1883, and the memorable show in the London Guildhall in 1890. There is little doubt that those two events gave a greater impetus to fruit growing in Britain than any other efforts during our good Queen's reign. He did not tell us that the Guildhall Show would not have been forthcoming but for the spirited undertaking, during a "bad fruit year," of Mr. A. H. Smee and himself undertaking to fill the Guildhall if no one else would join in the endeavour, but the fact was brought out in the subsequent discussion.

Brought under review also was the literature pertaining to fruit, prominent place being given to the late Dr. Hogg for his classic work, the "Fruit Manual." The works also of Messrs. Rivers, Bull, Wright, Cheal, and others being cited, as each in its way (as the speaker's own works have done) helped forward the object in view. Amongst workers in the cause of fruit culture the late Sir Henry Scudamore Stanhope of Holme Lacy was justly referred to as a leader, followed by such practicalists as Messrs. Ingram, Jones, Woodbridge, Ross, Speed, Thomas, Woodward, Wildsmith, Ford, McIndoe, Hunter, Goodacre, Luckhurst, and others; while even the gardening press was not overlooked.

As will be perceived, the address was comprehensive, but while the author fully admitted the good work of the past, he looked for, and confidently anticipated, still better work in the future from the skilled and intelligent gardeners of Britain; and so does the *Journal of Horticulture*.

Mr. A. W. Sutton followed the next day (Friday), and in a comprehensive paper dealt with the progress of vegetable cultivation during the Queen's reign. This has, at least, been as marked as in the case of fruits, and with results certainly not less important. It transpired that the grand old octogenarian and founder of the great Reading firm was asked to contribute a paper, but as his physical powers were not equal to his mental activity it was prudent for his son to act in his stead.

Mr. Sutton observed at the commencement that, though the "cultivation" of vegetables was mentioned in the programme, he thought it would not be expected of him to enlarge on that aspect of the question, but rather to speak on the improvement of the vegetables cultivated. This he did for nearly an hour without a tedious moment to his hearers. He commenced with what he called the "Prince of Vegetables"—the garden Pea, mentioning the principal varieties that were grown in the thirties, including the Scimetar and Charltons, tracing improvements step by step to the present day, which have culminated in a revolution.

Mr. Sutton observed that real interest was awakened in the improvement of Peas by the introduction of the famous Ne Plus Ultra, which came out as new under several names during three or four consecutive years—no small tribute to the intrinsic merits of the still favourite of many cultivators. Passing along, the speaker noted a distinct gain effected by the introduction of Veitch's Perfection, Dr. McLean's seedlings brought out by Mr. Charles Turner, and Mr. Laxton's varieties. A special tribute was paid to the work of Mr. Culverwell; and the varieties Telegraph, Telephone, Stratagem, Pride of the Market, and others introduced by Messrs. Carter, were cited as examples of further progress. Sharpe's Queen, Webb's Wonder, and some of Mr. Eckford's varieties, all had recognition, Duke of Albany having a special mark of approval. It was obtained by selection from Telegraph by Mr. Abbott in Mr. Firth's garden at Sheffield.

Nor could the essayist omit mention of the early large-podded Marrowfats on dwarf sturdy stems, plants of which went direct from the Temple Show last year to the entrance hall of Windsor Castle, the varieties having subsequently become favourites at the Royal table. Such varieties as Daisy, Veitch's Maincrop, Alderman, and Laxton's Gradus were also cited as good additions to modern Peas.

Interesting were the remarks on raising and fixing the characters of Peas. As the result of cross fertilisation every pea in a pod may produce a different variety, and these again show variations, so that watchful care and prolonged patience were needed in firmly establishing new varieties. Sending new Peas out too soon results in confusion. The preservation of purity in stocks also, as all seedsmen knew, entailed more labour in sorting and selection than the outside public had any idea of.

Adverting to Broad Beans, Mr. Sutton regarded them as more stationary than most vegetables, but was still surprised the old Mazagan should be so much grown, since there were both earlier and better varieties. For usefulness an approving word was given to the Harlington Windsors. Then there were the continental Longpods, such as the Seville, but the English Giants were hardier and better. We do not know to what particular section Bunyard's Exhibition belongs, nor was it mentioned, but we have seen it win many prizes in large competitions at cottagers' shows. Of French Beans, varieties were mentioned, including Fulmer's Forcing and Negro, that were grown in 1837. Among the greatest advances since were Canadian Wonder and Ne Plus Ultra, though there were newer sorts which have come to stay. A few words of warm approbation were given to the new climbing French Beans, both for their productiveness and tenderness, while the old Scarlet Runner has given rise to forms remarkable for the length of their pods.

Passing reference was made to Asparagus, preference being given to the best selections of Argenteuil for cultivation, while there was room for improvement in the cooking of this delicious esculent.

Ancient varieties of Beet were mentioned, also modern improvements, such as Nutting's, Dell's and Cheltenham Green Crop; while the old flat Egyptian Turnip-rooted was being superseded by the symmetrical globe-shaped forms. Similar improvement was apparent at exhibitions in Carrots, while perfect models were also to be had in Turnips, thanks largely to the selections of Messrs. Dobbie. As to Parsnips, the chief advances were found in Student and Carter's Maltese, but a new variety named Tender and True has recently been exhibited, which is said to exceed all others in quality.

The Brassicas received a goodly share of attention, beginning with the Cabbage. A hint was given that the very early continental varieties, such as Express and others, were like the old Early York, only suitable for spring sowing, for which also the Nonpareil is valuable.

If sown in the autumn the plants "bolt," but not so Ellams' Early, Imperial, Flower of Spring, and Early April, which when true form solid hearts. Brussels Sprouts had mention, and the sportiveness of the Brassica family suggested the possibility of a Brussels Sprout with red buttons, and this brought out the observation by Mr. Bunyard that Red Cabbages were delicious when well cooked. The greatest addition to Cauliflowers during recent years was Veitch's Autumn Giant, while most valuable were the Early Erfurt varieties, as represented by Snowball and First Crop; and as for Broccoli, these were to be had now as clear as the Cauliflower, and white heads of one or the other could be had all the year round.

For improvement in Onions credit was given to the late Mr. Deverill, and for Leeks to Messrs. Dobbie, but in respect to the latter it was remarked that though the gigantic samples were indispensable for exhibition, much smaller stems were far superior to them for table use. Lettuces have been increased enormously in both the Cos and Cabbage sections, and there was now an excellent one partaking of the nature of both. Relative to the trouble of boltiug, the speaker observed that there were now Cabbage varieties such as Favourite and Daniel's Continuity that often refused to produce flower stems at all.

From the White and Black Spine Cucumbers of sixty years ago we had now a host of superior varieties. Rochford's was much sought for, Telegraph highly serviceable, but Mr. Mortimer had raised varieties with the most perfect fruits, such as Progress, Matchless, and others that had been honoured by the Royal Horticultural Society.

As evidence of the striking advance in Tomatoes, Mr. Sutton observed that only one, the Common Red, was to be found in a wholesale seed list in 1852, whereas the trials at Reading now included 200 selections. Some of the best were mentioned, including Mr. Thomas' Frogmore Selected and Golden Jubilee, which had such an imposing effect in the Show. In the course of discussion it was generally acknowledged that though large fruits were in favour for showing, those weighing six or eight to the pound were preferred by general consumers, and Mr. Bunyard remarked that in his view the true Chiswick Conference was one of the most useful.

A reference to Potatoes was left to the last. In 1836 the speaker said 166 varieties were listed by Messrs. Peter Lawson & Sons, and though a few remained, including the Shaws and Dons, only one was generally cultivated—the Early Ashleaf. Others had fallen a prey to disease through constitutional enfeeblement. Mr. Sutton believed that some of the early American varieties, such as Beauty of Hebron and Puritan, had been of great service, and with those and home-raised late varieties the present Potato supply, once in dire jeopardy, had never been equalled. Among those who had brought this about by raising new varieties, appreciative reference was made to Mr. Robert Fenn, Mr. A. Findlay, also to the late Messrs. James Clark and James Paterson.

Broadly speaking, Mr. Sutton thought that greater advance had been made in vegetable cultivation during the last sixty years than in the two centuries preceding the Queen's accession to the throne. Mr. A. Dean, in a few pertinent observations, thought some credit was due to cultivators as well as to raisers, and the meeting appeared to think so too. Mr. Sutton's admirable paper should be read in full by all who are interested in the important subject which he so ably treated.

Saturday brought to the front a different subject, and one in which progress has advanced by leaps and bounds, especially during the later year of the Queen's reign—namely, market gardening. This is a subject, moreover, on which only a comparatively few persons can treat authoritatively and comprehensively. Mr. J. Assbee is well able to do so for two of the best of reasons. First as superintendent of the greatest garden produce market in the world—Covent Garden—he has abundance of materials at command; and secondly, literary ability of that particular kind which enables him to impart to others with great clearness that which he wishes them to understand.

Mr. Assbee commenced by saying that the annual gathering of the Royal Horticultural Society in the famous Gardeners' Palace seemed to afford a suitable opportunity for reviewing gardeners' work. In the production of food from the soil he presumed that every man at the outset was his own gardener, and supplied his own wants as well as he was able. As communities formed and small towns became established many of the inhabitants would purchase what was needed from contiguous land or local market gardens, as was in fact the case now.

As the aggregation of people became greater, resulting in populous towns and cities, shops would become necessary, and these would have to be regularly supplied with large consignments of produce of different kinds in season. Thus market gardens would be formed on a scale commensurate with the demands, and systematic methods of culture acquired and pursued. These gardens would first be situated in the vicinity of towns, as many still are, while many have been driven farther afield by builders.

The development of railways gave wider scope to cultivators, and enabled them to choose distant fields for their operations, while improved methods of production would be adopted. Thus did market gardens grow with the growth and wants of increasing populations, until they have covered their present enormous area. Market gardening has now become an art. It is not a mere speculative undertaking by those who successfully engage in it, but is conducted on sound business principles and carefully considered lines of procedure.

Striking figures were adduced as to the extent of the cultivation of different products. For instance, if we understood rightly, 4000 acres were devoted to the cultivation of Asparagus in Middlesex, which, though the largest is only one source of supply, the yield being 1,600,000 bunches, though much larger supplies came from the Continent. Celery is grown by hundreds of acres in Lincolnshire, and Onions in Bedfordshire; but still as the importations of Onions amount to about 6,000,000 bushels, valued at nearly £700,000, the markets do not seem to be overburdened with the home supply.

The forcing of vegetables was alluded to, mention being made of the enormous output of Leeds Rhubarb, which is brought to London to the extent of 30 tons a day in the season, and enormous supplies are grown in the metropolitan district. The hardy fruit demand and supply have increased marvellously, and not less remarkable is the extension in the culture of forced fruits in the neighbourhood of London, Worthing, and in other centres.

The cultivation of flowers for market has attained to stupendous dimensions. From Snowdrops, through the whole floral range, the public wants have to be met, and both home gardens and foreign fields are placed under tribute to maintain the supply. A wonderful instance was given of progress in Daffodils in the Scilly Isles. Mr. A. Dorrien Smith of Tresco commenced their culture by sending £1 worth to Covent Garden in 1865. This small beginning culminated in a supply of 496 tons during the present year.

In the production of flowers and plants for market many thousands of persons are employed, and the extent of glass devoted to the work and to the forcing of fruits and vegetables in England is computed at 32,000,000 square feet, or equal to a range of 15 feet wide houses 400 miles long. So we seem to be doing a little of something in England after all. Under glass culture is extending, but Mr. Assbee seems to think there is a danger of those amateurs who enter on this work, because they think it a pleasant occupation and profitable investment, not realising anything approaching their anticipations, as in the absence of great business capacity and thorough knowledge of the various details of the work, trouble and loss are more likely to follow than pleasure and profit.

We have given the merest outline of Mr. Assbee's excellent paper, as well as the others, and they must be read in their entirety in the official *Journal*, in which they will in due time appear.

It should be stated that the extremely active King of Siam, after a visit to Southampton on Friday, arrived at the Crystal Palace at 6 P.M., with his retinue, to see the show. He flitted from stand to stand, making no secret of his delight; this perhaps culminated with Mr. Rivers' fruit trees in pots, and after satisfying himself that the fruits were not tied on, observed there was nothing like them in his country. His Majesty, after seeing much in a little time, dined at the Palace, and was presented with a magnificent Pine from the exhibit of the Queen.

TWO NOTABLE KENTISH FRUIT MEN.

We give two portraits in the present issue (figs. 50 and 51) of men who over a series of years have exhibited hardy fruit as well, we doubt not, as it has ever been exhibited at home or abroad. True, they may have soil and climate, which conduce to both the size and the colour of hardy fruit; but neither Mr. George Bunyard the nurseryman, nor Mr. George Woodward the gardener, could have accomplished what they have in the absence of skill in cultivation. As a matter of fact we have seen fruit as small, scrubby, specked, and inferior in Kent as in any other county; and that which is so good is made so by making the best of such natural advantages as exist in climate and in soil. Both these growers and exhibitors have done yeoman's work in hardy fruit cultivation. To enumerate the honours they have won would fill a page, and we shrink from the task of compilation. Maidstone is at present in an unfortunate position, but the fruit-growing area of both our friends is some two to four miles from the town, and though they deeply regret the calamity that has befallen it, they happily feel as safe as if they were a hundred miles away. We congratulate both Mr. Bunyard and Mr. Woodward on what they have done in the past, and trust that health and strength will be vouchsafed to them for not less signal successes in the future.

Fig. 50.– Mr. George Bunyard.

CRYSTAL PALACE FRUIT SHOW.

September 30th, October 1st and 2nd.

Once again the Royal Horticultural Society has to be congratulated upon a very successful exhibition of fruit. Opinions had been very freely expressed as to the probable poorness of the show owing to the adverse weather causing a light crop. Notwithstanding this, the show was a very fine one indeed, and we learnt that 1000 more dishes were staged than was the case last year. This would not strike one as being the case, as the exhibits were arranged in a different manner and place from what has hitherto been the custom. As is well known, on previous occasions the tables have occupied both ends of the centre transept, and thus made an effective and imposing display. This year, with the exception of a few nurserymen's stands in the transept, the majority of the tables were in the central square before the large organ. If the show lost somewhat in effectiveness by this system, the public were the gainers in being able to find the classes much quicker and easier than in former shows.

It is superfluous for us to say that the Apples were the best feature of the whole show. If the fruits were not quite so large as is customary, there was a richness of colouration that easily rivals that of the fruit sent to us from America. A few exhibitors had evidently spent some time in polishing up their specimens, for they shone like burnished gold. It is probable that this polishing is carried a little too far, as we heard several visitors express the opinion that they looked as though they had just come from a fruiterer's shop. However, no one is likely to set up their fruits covered with travelling dust, so the chances are that the polishing will continue to hold the sway. An examination of the Apples showed many of them to be maggoty, which is exceedingly regrettable. Some magnificent Pears were shown as well by private as by professional growers, the colour of many of them being very rich, though as a rule the fruits were smaller than usual. In some of the smaller classes, for both Apples and Pears, the competition was remarkably keen, and the produce staged of excellent quality.

Of the kinds of fruits not yet mentioned the Grapes are the most important, and claim the greatest amount of individual attention. It cannot be said that these were of such high quality as it was thought would be staged; indeed, some of the bunches ought not to have found their way to the Palace. In many instances it is true the berries were of immense size, but the colouring and the finish were not, as a rule, up to the mark. Some of the Muscat of Alexandria were withered and very green, richly coloured berries being very rare. The Madresfield Court were, almost without exception, red at the stalk, while many of the Black Hamburghs were past their best, and rapidly losing colour. Gros Maroc was well staged as regards finish, but the same can hardly be said of Gros Colman, Mrs. Pearson, Lady Downe's, and one or two others. Can it be that exhibitors do not bring their best produce owing to the comparative smallness of the prizes? We trust such is not the case, but it certainly seems to point in that direction.

There is another point which has a very material effect on the value, or otherwise, of the show from an educational point of view, and that is the naming of the fruit. Every exhibition, whether it be of a horticultural nature or not, must be of value for the purposes of education, and the more correct the information the greater the value of the show. Bearing this in mind, we were extremely sorry to see so many names of Apples, Pears, and other fruits spelt wrongly. For example, one exhibitor had printed tickets, and we observed Apple Pott's Seedling instead of Potts', and Pear Nouveau Poitean, whereas it should have been Nouveau Poiteau, while a prominent grower had staged Pears Pitmaston Dutchess. These may seem trivial points, but several visitors copied the names as they were written, and of course there were many examples besides those mentioned. We trust that in the future every exhibitor will make perfectly sure that his cards are correctly inscribed, which may be easily done by consultation of some standard work on fruit. In staging plants and flowers the same rule ought always to be observed.

GARDENERS' AND AMATEURS' SECTION.

Collections.

The principal class in the first division, which included fruit grown either out of doors or under glass, was for a collection of twelve dishes of ripe dessert fruit of at least six kinds; only one Pine, one Melon, one dish of black and one of white Grapes allowed; not more than two varieties of any other kind, and no two dishes of the same variety. Mr. F. Harris, gardener to Lady Henry Somerset, Eastnor Castle, Ledbury, was adjudged the premier award of £7 10s. The stand comprised Grapes Muscat of Alexandria, good in berry but unfinished, and Gros Maroc, in splendid form; a good Smooth Cayenne Pine; Sea Eagle and Prince of Wales Peaches, in capital condition; King of the Pippins and Ribston Pippin Apples, Brunswick Figs, Coe's Golden Drop Plums, and a seedling Melon, with a dish of Nectarines and Pears. As a whole the exhibit was very creditable. Mr. J. H. Goodacre, gardener to the Earl of Harrington, Elvaston Hall, Derby, was a good second, his best dishes being Muscat of Alexandria Grapes, Souvenir du Congrès Pears, and American Mother Apple. Mr. J. McIndoe, gardener to Sir J. W. Pease, Bart., Hutton Hall, Guisborough, was a fair third.

There was a smaller class for a collection of eight dishes of ripe dessert fruit in at least four kinds, Pines being excluded. One Melon, one dish of black and one of white Grapes were allowed, but not more than two varieties of any other kind, and no two dishes of any one variety. Competitors in the larger class were not eligible to enter in this one, and about half a dozen staged. Mr. Geo. Reynolds, gardener to Messrs. De Rothschild, Gunnersbury Park, Acton, was a splendid first with a handsome exhibit. It comprised Grapes Muscat of Alexandria and Gros Maroc, Apple Ribston Pippin, Plum Coe's Golden Drop, Peaches Princess of Wales and Gladstone, a seedling Melon, and Nectarine Pineapple. The second position was adjudged to Mr. W. J. Empson, gardener to Mrs. Wingfield, Ampthill, who showed amongst others Grapes Black Alicante and Golden Queen, Fig Brown Turkey, and Pear Doyenné du Comice. Mr. W. Tidy, gardener to W. K. D'Arcy, Esq., Stanmore, was placed third.

Grapes and Figs.

Seven exhibitors came forward in the class for a collection of Grapes in six distinct varieties, two bunches of each, and in which it was com-

pulsory to include both black and white varieties. Here Mr. G. Reynolds, gardener to Messrs. De Rothschild, Gunnersbury Park, Acton, succeeded in annexing the first prize. The varieties represented were Black Hamburgh, which was losing its colour; Chasselas Napoleon, fine in berry; Gros Maroc, grandly finished bunches; Muscat of Alexandria, not very good, with Madresfield Court and Buckland Sweetwater, both of medium quality. The second position was assigned to Mr. W. Taylor, gardener to C. Bayer, Esq., Forest Hill, whose best varieties were Madresfield Court and Gros Colman. Mr. J. H. Goodacre was placed third, his examples of Black Alicante and Muscat of Alexandria being the most conspicuous.

In the class for six bunches in three distinct varieties, in which no exhibitor in the class immediately preceding was eligible to compete, Mr. F. Cole, gardener to Sir George Russell, Bart., Reading, went to the front with Muscat of Alexandria, Foster's Seedling, and Black Alicante. Mr. J. Jones, Cradley, was a fair second, and Mr. F. Harris third. The class for three bunches of Black Hamburghs was not particularly strong. Mr. W. Mitchell, gardener to J. W. Fleming, Esq., Romsey, was placed first; Mr. W. Taylor, Forest Hill, second, and Mr. G. Reynolds third. Mr. W. Taylor, Forest Hill, staged well in the class for Madresfield Court, his examples being good. Mr. W. Tidy, gardener to W. K. D'Arcy, Esq., Stanmore, was a capital second, and Mr. W. J. Empson, gardener to Mrs. Wingfield, Ampthill, Beds, third.

For three bunches of either Gros Colman or Gros Maroc, Mr. J. Jones, Ridgway Vineries, Cradley, Malvern, was placed first. His variety was Gros Colman; the bunches were ill-shaped and berries large, though not of high finish. Mr. G. Reynolds took the second prize with the same variety, followed by Mr. F. Cole with handsome bunches of Gros Maroc, in which the berries were perfectly finished, but small. Black Alicantes were very evenly shown, the prizewinners being Messrs. F. Cole, J. Bury, Petersham, and W. Howe, gardener to Henry Tate, Esq., Streatham, in the order given. The class for Lady Downe's was not very strong. The first prize fell to Mr. W. Tidy, the second to Mr. W. J. Empson, and the third to Mr. A. Kemp, Horsham. For three bunches of any other black Grape, Mr. W. Mitchell was first with Mrs. Pince; Mr. W. Smith, gardener to R. Ovey, Esq., Henley-on-Thames, second with Alnwick Seedling; and Mr. W. Tidy a very close third with the same variety.

Mr. F. Cole was first in the class for three bunches of Muscat of Alexandria, Mr. J. H. Goodacre being second, and Mr. G. Reynolds third. Neither of these exhibits was perfect. For three bunches of any other white Grape, Mr. G. Reynolds was the most successful with Chasselas Napoleon, followed by Mr. W. Taylor, Forest Hill, with Buckland Sweetwater; and Mr. G. Lane, gardener to Mrs. Ridge, Englefield Green.

FIG. 51.—MR. GEORGE WOODWARD.

A large number of dishes competed in the class for a dish of Figs of any variety, and some of the fruits were very handsome. The first position was awarded to Mr. W. Messenger, gardener to C. H. Berners, Esq., Woolverstone Park, Ipswich; the second to Mr. H. Folkes, gardener to C. E. Strahan, Esq., Hemel Hempsted; and the third to Mr. W. Mitchell. Each of these competitors staged Brown Turkey.

HARDY FRUITS.

For a collection of hardy fruit grown entirely in the open air, and to comprise not more than fifty dishes, the competition between Mr. G. Wythes, gardener to Earl Percy, Syon House, Brentford, and Mr. J. Powell, gardener to Colonel Brymer, M.P., Dorchester, was remarkably keen, the prizes going to them in the order they are here named. The winner's collection was distinctly more varied than his opponent's, while the fruits in each case were most creditable as regards quality. Amongst the best Apples Mr. Wythes staged were Wealthy, Cox's Orange Pippin, Lord Suffield, Small's Admirable, Warner's King, Lord Derby, Alfriston, Blenheim Orange, Ribston Pippin, and Cellini. The most noticeable Pears were Beurré Diel, Louise Bonne of Jersey, Beurré Bachelier, and Beurré Sterckmans. In addition to these there were two or three kinds of Nuts, with Grapes, Cherries, Plums, Peaches, and Damsons. Mr. J. Powell had some grand Apples and Pears, representing many of the leading varieties. The third position was assigned to Mr. Miller, gardener to Lord Foley, Ruxley Lodge, Esher; but his collection was decidedly behind the other two.

Mr. R. Potter, gardener to Sir M. Collet, Bart., Kemsing, Sevenoaks, secured the coveted premier award in the class for a collection of hardy fruit not exceeding thirty-six dishes, grown partly or entirely under glass, to illustrate orchard house culture. The exhibit was well diversified, and comprised some very handsome specimens. The Grapes were Foster's Seedling and Gros Maroc. Amongst the Pears, which were very fine, we noticed Doyenné du Comice, Marguerite Marillat, Pitmaston Duchess, Doyenné Boussoch, and Duchesse d'Angoulême, while the Apples comprised splendid examples of Emperor Alexander, Baldwin, Lady Henniker, King of Tompkins County, Cox's Orange Pippin, Worcester Pearmain, Ribston Pippin, Wealthy, and The Queen. Plums were represented by Automne Compôte, Coe's Golden Drop, and Bryanston Gage. In addition to these there were Figs, Peaches, and Nectarines in good form. Mr. J. McIndoe was a fine second, with a collection representative of good culture and careful selection. The same kinds of fruits were staged as in the preceding collection, but the varieties were, of course, slightly different.

COOKING AND DESSERT APPLES.

The first prize for twenty-four dishes of Apples, distinct, sixteen cooking and eight dessert, was secured by Mr. G. Woodward, gardener to R. Leigh, Esq., Barham Court, Maidstone, with a magnificent collection, every dish being almost perfect. The colouring was particularly attractive. The varieties were Ecklinville, Beauty of Kent, Warner's King, Peasgood's Nonesuch, Stone's (grand) Belle Dubois, Cox's Pomona, Brabant Bellefleur, Bismarck, Mère de Ménage, Alfriston, Emperor Alexander, Tower of Glamis, American Mother, Allington Pippin, Cox's Orange Pippin, Baumann's Red Reinette, Washington, Ribston Pippin, Calville Rouge, and Gascoyne's Seedling. Mr. C. A. Bayford, gardener to C. Lee Campbell, Esq., Glewstone Court, Ross, was second with a creditable collection, though visibly weaker than the former. The best dishes were Peasgood's Nonesuch, Warner's King, Lord Derby, American Mother, Ribston Pippin, Tyler's Kernel, Stirling Castle, Crimson Queening, Potts' Seedling, Cox's Orange Pippin, Duchess' Favourite, and King of the Pippins. Mr. G. Goldsmith, gardener to Sir E. G. Loder, Bart., Leonardslee, Horsham, was placed third with a good, well coloured collection. The best dishes were Flower of Kent, Hollandbury, Peasgood's Nonesuch, Wealthy, and Ribston Pippin. There were six competitors in this class, which it will readily be understood was a most interesting one.

The class for twelve dishes of Apples, eight cooking and four dessert, brought the same number of exhibitors as the preceding one. Here, again, the fruit staged was, as a rule, of splendid quality. Mr. W. G. Pragnell, gardener to J. K. Wingfield Digby, Esq., Sherborne Castle, Sherborne, was placed first with an even exhibit, including Lord Derby, Peasgood's Nonesuch, Warner's King, New Hawthornden, Annie Elizabeth, Bismarck, Emperor Alexander, Alfriston, Sturmer Pippin, Cox's Orange Pippin, Ribston Pippin, and King of the Pippins. Mr. B. Miller, gardener to T. W. Startup, Esq., West Farleigh, Maidstone, occupied the second position. Warner's King, Tower of Glamis, The Queen, Cox's Pomona, Gascoyne's Seedling, and Worcester Pearmain were his best dishes. The third prize went to Mr. J. Hill, gardener to C. R. W. Adeane, Esq., Babraham Hall, Cambridge, who showed good examples of Sandringham, Peasgood's Nonesuch, and King of the Pippins.

Mr. W. Slogrove, gardener to Mrs. Crawford, Gatton Cottage, Reigate, was placed first for nine dishes, six cooking and three dessert. The varieties were Warner's King, Peasgood's Nonesuch, Sandringham, Emperor Alexander, Stone's, Cox's Pomona, Washington, Worcester Pearmain, and Cox's Orange Pippin. Mr. T. W. Herbert, gardener to J. T. Charlesworth, Esq., Nutfield Court, Redhill, was second with good dishes of The Queen, Gloria Mundi, and Cox's Orange Pippin.

COOKING APPLES.

For six dishes of cooking Apples Mr. G. Woodward was again placed first with a splendid exhibit. Warner's King, Stone's, Peasgood's Nonesuch, Lord Derby, Emperor Alexander, and Mère de Ménage were the varieties staged. Mr. W. Lewis, gardener to T. Oliverson, Esq., East Sutton Park, Maidstone, was placed second with good dishes of Peasgood's Nonesuch, Mère de Ménage, Warner's King, and Belle Dubois. Mr. A. H. Rickwood, gardener to the Dowager Lady Freake, Fulwell Park, Twickenham, was third with a very clean exhibit.

For three dishes, distinct, Mr. G. Goldsmith secured premier honours with an exceptionally fine exhibit, showing Peasgood's Nonesuch, Warner's King, and Lord Derby. Mr. J. Powell, gardener to Col. Brymer, M.P.,

Ilsington House, Dorchester, was second with the same varieties. Mr. A. Brook, Mereworth, was third. For six dishes of Bramley's Seedling, Mr. W. King, gardener to J. Colman, Esq., Gatton Park, Reigate, was placed first; Mr. J. Turton, gardener to J. Hargreaves, Esq., Maiden Erleigh, Reading, second; and Mr. H. H. Hurnard, Gurney Manor, Higham, third.

Dessert Apples.

The class for six dishes of dessert Apples brought out eight competitors, Mr. G. Woodward being first with a grand exhibit. The varieties were Gascoyne's Scarlet Seedling, Washington, Baumann's Red Reinette, Ribston Pippin, American Mother, and Cox's Orange Pippin. Mr. B. Miller was placed second with good dishes of Worcester Pearmain, Cox's Orange Pippin, Ribston Pippin, and King of the Pippins. Mr. G. Goldsmith third, with smaller, but well coloured, fruits.

For three dishes of dessert Apples Mr. C. A. Bayford was first with King of the Pippins, Washington, and Ribston Pippin; Mr. A. Kemp, gardener to C. R. Scrase Dickens, Esq., Coolhurst, Horsham, second with good Ribston Pippin, Cox's Orange Pippin, and American Mother; Mr. R. Potter, gardener to Sir Mark W. Collet, Bart., Kemsing, was third. There were eleven competitors in this class.

Pears.

Six competitors contested the class for twelve dishes of Pears, Mr. G. Woodward securing the premier place with a grand exhibit. The varieties comprised Marie Benoist, Durondeau, Pitmaston Duchess, Doyenné du Comice, Emile d'Heyst, Beurré Hardy, Duchesse d'Angoulême, Princess, Gansel's Bergamot, Doyenné de Merode, Beurré Superfin, and Beurré Baltet. Mr. G. Goldsmith followed with a worthy display, his best dishes being Marguerite Marillat (grand), Beurré Bachelier, Pitmaston Duchess, and Doyenné Boussoch. Mr. J. Powell was third.

Mr. W. Cotterell, gardener to Sir W. N. M. Geary, Bart., Tonbridge, was first for nine dishes of dessert Pears in a good competition, showing Beurré Bosc, Pitmaston Duchess, Duchesse d'Angoulême, Durondeau, Beurré Superfin, Beurré Rance, Beurré Hardy, Louise Bonne of Jersey, and Gansel's Bergamot. Mr. W. Jones, gardener to G. Brougham, Esq., Wallington Bridge, Carshalton, was a very close second. Beurré Bachelier, Pitmaston Duchess, Duchesse d'Angoulême, Madame Treyve, and Beurré Superfin were well shown. Mr. A. H. Rickwood was third with creditable dishes of Beurré Superfin, Durondeau, and Beurré Hardy.

In the competition for six dishes of dessert Pears, Mr. W. Messenger, gardener to C. H. Berners, Esq., Woolverstone Park, Ipswich, was easily first with very fine dishes of Pitmaston Duchess, Beurré Baltet Père, Doyenné du Comice, Durondeau, Beurré Hardy, and Louise Bonne of Jersey. Mr. W. Slogrove was placed second with good even dishes, the best of which were Pitmaston Duchess, Beurré Superfin, and Doyenné Boussoch. Mr. A. Basile, gardener to the Rev. O. L. Powels, Woburn Park, Weybridge, was third, Durondeau and Pitmaston Duchess being most noticeable in his stand.

Mr. R. Edwards, gardener to G. N. Field, Esq., Beechy Lees, Sevenoaks, was first for three dishes of dessert Pears with Pitmaston Duchess, Doyenné du Comice, and Madame Treyve. Mr. Geo. Fennell, gardener to W. M. Cazalet, Esq., Fairlawn, Tonbridge, was second with very fine dishes of Marguerite Marillat and Pitmaston Duchess. Mr. C. Harris, gardener to O. A. Smith, Esq., Hammerwood, East Grinstead, was third.

The competition for three dishes of cooking Pears was limited to four exhibitors, Mr. G. Woodward securing first prize with Grosse Callabasse (good), Triomphe de Joidoigne, and Catillac. Mr. G. Goldsmith was second, and Mr. R. Chamberlain, gardener to F. M. Lonergan, Esq., Reading, third. The chief prize for one dish of cooking Pears was secured by Mr. C. Harris with a grand dish of Catillac; Mr. H. Beames, gardener to H. Stock, Esq., Petersham, being second with Uvedale's St. Germain, and Mr. John Webb, gardener to H. Padwick, Esq., Horsham, third.

Peaches and Nectarines.

There were ten competitors for the three dishes of Peaches. Mr. Woodward was well ahead with Sea Eagle, Nectarine Peach, and Princess of Wales. Mr. F. Harris, gardener to Lady H. Somerset, Eastnor Castle, Ledbury, was second with a very even display. Mr. W. Mancey, gardener to Mrs. Druce, Merstham, was third. Mr. W. Mitchell, gardener to J. W. Fleming, Esq., Romsey, received the premier award for a single dish with a fine exhibit of Sea Eagle. Mr. G. Lane, gardener to Miss Ridge, Englefield Green, was second with Stirling Castle; and Mr. G. Goldsmith third with Sea Eagle.

Mr. F. Harris was the only exhibitor of three dishes of Nectarines, and was awarded first prize. Mr. W. Strugnell, gardener to the Right Hon. W. H. Long, M.P., Trowbridge, was first for a single dish with Victoria. Mr. J. Hill was second with Pineapple; and Mr. P. Bradley, gardener to F. W. Morter, Esq., Byfleet, third.

Plums.

A very good display of Plums was brought together. For four dishes of dessert varieties Mr. H. Folkes, gardener to C. E. Strachan, Esq., Hemel Hempstead, was first with Coe's Golden Drop, Reine Claude de Bavay, Late Transparent Gage, and Cloth of Gold. Mr. J. Vert, gardener to Lord Braybroke, Saffron Walden, was second; and Mr. Strugnell third. Mr. J. Vert was first for a single dish of a dessert variety with Coe's Golden Drop. Mr. J. Turton was second with the same variety, and Mr. W. Lewis third. There were about a dozen and a half dishes staged.

Cooking Plums were well represented, in spite of the scarcity this season. Mr. J. H. Goodacre, gardener to the Earl of Harrington, Derby, was first for four dishes, with good examples of Archduke, Monarch, Goliath, and Pond's Seedling. Mr. C. Sim, gardener to T. Gooch, Esq., Hemel Hempsted, was second, and Mr. Jas. Day, gardener to the Earl of Galloway, Garliestown, N.B., third. In the class for one dish of cooking Plums Mr. B. Osborn, gardener to Rev. H. G. Palmer, Reading, was first with a grand dish of "Le Mott Sang;" Mr. C. Sim was second, and Mr. J. H. Goodacre third.

Mr. W. Messenger was placed first for a single variety of Gage Plums with a fine dish of Reine Claude de Bavay. Mr. Herrin, gardener to Lady L. Fortescue, Dropmore, was second with Brahy's Late Gage, and Mr. B. Osborn third. Mr. G. Fennell exhibited the only collection of Damsons and Bullaces, and was awarded the first prize.

Apples and Pears—Single Dishes.

The competition in the many single dish classes for Apples and Pears is generally the keenest in the show, and this proved to be no exception in this respect. There were over a dozen competitors in the classes for some of the most popular varieties, and it is almost needless for us to say that many of the specimens were of the very finest quality. Perhaps they were not quite so large as some we have seen, but this is accounted for by the season. Colour and form were, however, both splendid, and the section as a whole was one of the most interesting in the exhibition.

Adams' Pearmain was splendidly staged by Mr. W. Camm, gardener to the Duchess of Cleveland, Battle Abbey. The specimens were of fine form and colour. Mr. G. Goldsmith was a capital second, and Mr. G. Woodward third. Mr. J. Powell went to the front with Allen's Everlasting, and was followed by Messrs. W. H. Godden, Sawbridgeworth, and J. Spottiswoode, Brighton, who were second and third in the order here given. The several dishes of Baumann's Red Winter Reinette made a particularly handsome display, as almost all the specimens were finely coloured. Mr. J. McKenzie, gardener to F. S. W. Cornwallis, Esq., Linton Park, Maidstone, was a creditable first; Mr. C. Ross, gardener to Captain A. J. Carstairs, Welford Park, Newbury, a good second, and H. C. Prinsep, gardener to Viscountess Portman, Buxted Park, Uckfield, third. The class for Blenheim Orange was, of course, very strong. The first prize went to Mr. W. H. Godden, the second to Mr. G. Chambers, Moorcock's Farm, Mereworth, and the third to Mr. W. King, each of whom showed well. Messrs. G. Woodward, H. C. Prinsep, and W. H. Godden secured the prize in the order named for a dish of Brownlees' Russet, while for Claygate Pearmain this order was maintained by the same competitors. The class for Court Pendû Plat was an attractive one. Mr. J. Tallack, gardener to E. Dresden, Esq., Livermere Park, Bury St. Edmunds, was a fine first; Mr. C. Ross, second, and Mr. R. Chamberlain, third, both staging well.

Amongst the score or so of dishes staged in the class for Cox's Orange Pippin there were some splendid specimens, good alike in form, colour, and size. The premier dish was staged by Mr. W. Messenger, who was followed by Mr. W. King and Mr. G. Woodward in the order named. Mr. B. Miller was first in the class for Egremont Russet, the only other contributor being Mr. G. Goldsmith, who received the second prize. For Fearn's Pippin the number of exhibits exceeded a dozen, and some very beautiful fruits were noticed. Mr. J. C. Tallack had a grand first prize dish, and was followed pretty closely by Mr. J. McKenzie, and Mr. W. King, gardener to G. R. Brougham, Esq., Carshalton Bridge. Mr. J. McKenzie went to the first position of the half dozen exhibitors of Gascoyne's Scarlet Seedling. The second prize was taken by Mr. J. Hudson, gardener to L. de Rothschild, Esq., Gunnersbury House, and the third by Mr. G. Woodward. As may be imagined this display was strikingly beautiful owing to the brilliance of colour possessed by this variety. Mr. J. C. Tallack's premier dish of King of the Pippins was quite perfect, while those of Mr. J. Powell and Mr. C. A. Bayford were not very far behind. There were quite eighteen dishes staged. In the class for a dish of King of Tompkins County, Mr. T. Turton, gardener to J. Hargreaves, Esq., Maiden Erleigh, Reading, was first with handsome fruits. Mr. J. C. Tallack was second, and Mr. J. Hill third. Mabbot's Pearmain only brought forth two competitors, Messrs. J. McKenzie and H. C. Prinsep, who were respectively first and second.

The prizes offered for Mannington's Pearmain were much more keenly contested, there being six or seven dishes shown. Mr. G. Woodward was a fine first, Mr. J. McKenzie second, and Mr. T. Turton third. Half a score came forward with Margil, and the dish which won for Mr. G. Woodward the first prize was a grand one; the second prize went to Mr. J. McKenzie, and the third to Mr. C. A. Bayford, each of whom showed very creditably. American Mother made a conspicuous class, though only half a dozen dishes were staged. Mr. C. A. Bayford was an undisputed first, Mr. J. McKenzie being second, and Mr. G. Goldsmith third. As usual, that old favourite Ribston Pippin was in great force, upwards of a score of dishes being staged, many of them of more than average excellence. Mr. G. Woodward was a grand first, Mr. J. McKenzie an exceptionally close second, and Mr. C. A. Bayford third. Mr. J. Hudson, who staged Scarlet Nonpareil in practically perfect form, was accorded the first prize, the second going to Mr. C. Ross, who also showed well; and the third to Mr. J. Hill. The prizewinners in the class for Sturmer Pippin were Messrs. W. G. Pragnell, R. Chamberlain, and C. Ross, each showing well. About eighteen brought Worcester Pearmain, and these made a most attractive class. Mr. W. King was first with beautiful specimens; Mr. G. Woodward second, and Mr. W. Messenger third. The class for a single dish of any other variety was a very strong one, some twenty-four dishes being exhibited. Mr.

J. McKenzie was first with handsome fruits of St. Edmund's Pippin; Mr. G. Goldsmith second, with Gravenstein in fine character; and Mr. G. Woodward third, with excellent fruits of Washington.

Alfriston was the first in the schedule of the single dishes of cooking Apples, and of it some fine specimens were shown. Mr. J. McKenzie was a splendid first, Mr. G. Woodward a good second, and Mr. W. Lewis, gardener to J. Oliverson, Esq., East Sutton Park, Maidstone, third. It will be observed that though about seven dishes were staged, all the prizes went into the Maidstone district. Mr. R. Cbamberlain staged Beauty of Kent in capital form, and received the premier award. He was followed by Mr. G. Woodward and Mr. A. Basile, gardener to the Rev. O. L. Powells, Weybridge. There were nearly a dozen exhibits of Bismarck, and the beautiful fruits shown by Mr. J. McKenzie thoroughly deserved the first prize that was awarded to them. Mr. G. Woodward also staged handsomely for the second prize, while Mr. C. Ross' third prize dish was not a great deal inferior. Bramley's Seedling was a comparatively small class, only four dishes being staged, but as all were good, quality made up for quantity. Mr. C. A. Bayford was first, Mr. S. Lyon, gardener to J. Salmon, Esq., Rowton, Chester, second, and Mr. J. Hill third. Cellini was staged largely and well. Mr. G. Goldsmith was first with magnificently coloured fruits, Mr. C. A. Bayford second with almost equally good specimens, and Mr. J. Powell third. The seventeen or eighteen dishes of Cox's Pomona made a very handsome collection. Mr. J. McKenzie's first prize fruits were exceptionally brigbt; while Mr. J. Powell, second, and Mr. G. Goldsmith, third, both showed well. Duchess of Oldenburg did not make a particularly good class, as the specimens were so very divergent in character. Mr. J. Culton, Castle Douglas, N.B., was a good first; Mr. T. W. Herbert, gardener to J. Charleswortb, Esq., Redhill, being second; and Mr. G. Goldsmith third.

Tbe justly popular Wellington, or Dumelow's Seedling, was magnificently staged. There were nearly eighteen dishes, out of which the wonderfully fine examples shown by Mr. J. McKenzie were selected for the first prize. Mr. W. G. Pragnell, also showing well, was placed second, and Mr. C. A. Bayford third. Very attractive were tbe Ecklinville Seedling exhibited by Mr. J. McKenzie, and for which he received the premier award. Mr. J. Spottiswoode was second with fine examples, and Mr. G. Woodward third. Very bright were the fruits of Emperor Alexander in the class for that variety. Mr. J. McKenzie's specimens were clean, of good shape, and beautifully coloured. Mr. G. Woodward was second, and Mr. G. Goldsmith third, each showing in a highly creditable manner. Mr. J. McKenzie secured the premier position in the class for Frogmore Prolific out of half a dozen exhibits. Mr. C. A. Bayford was second, and Mr. W. G. Pragnell third. The shapely fruits of Golden Noble made a fine display. Tbere were about a dozen exhibitors, of whom Mr. G. Chambers was adjudged to have the best examples. Tbe second and third prizes went to Messrs. G. Woodward and J. McKenzie respectively. Golden Spire was not so numerously shown. Mr. G. Woodward's first prize dish were of exceptional quality. Mr. G. Goldsmith was second, and Mr. W. Lewis third. There were only three dishes of Grenadier, staged by Messrs. C. Herrin, W. Lewis, and J. Hill, who secured the prizes in the order given. New Hawthornden again made a small class. Mr. G. Woodward staged well for the first prize, and was followed by Mr. A. Brooks, Mereworth, and Mr. T. W. Herbert as mentioned. Mr. J. McKenzie was first, and Mr. J. Hill second, for Hormead Pearmain, of which they were the only exhibitors.

Rather over a dozen dishes were brought of the highly appreciated Lane's Prince Albert, and it is superfluous to add some grand examples were shown. Mr. C. Ross, for the premier prize, staged well coloured fruits of great size. Mr. C. A. Bayford was second with good specimens, and Mr. G. Woodward was third. Lord Derby was magnificently shown by Mr. G. Fennell, gardener to W. Cazalet, Esq., Fairlawn, Tonbridge, who was accorded the chief prize. Mr. R. Edwards, gardener to G. Field, Esq., Beechy Lees, Otford, was a creditable second, and Mr. C. Herrin third. Lord Grosvenor was not largely shown, but better examples than those of Mr. G. Woodward, wbo took the first prize, need not be wished for. Mr. C. Herrin was second, and Mr. F. Harris third. Lord Suffield was more numerous, over a dozen contestants bringing fruits. Mr. J. McKenzie annexed the first prize with wonderfully fine specimens, and was followed by Mr. G. Woodward and Mr. R. Chamberlain, each showing in good form. Mère de Ménage was magnificently exhibited as regards quality, but not quantity, only seven exhibitors coming forward. Mr. J. McKenzie was a grand first prizewinner, Mr. C. Ross a good second, and Mr. G. Woodward a capital third. The palm to any individual variety in the show must go to the renowned Peasgood's Nonesuch, which was staged by nine different growers, most of whom were in grand form. Mr. J. McKenzie deserved his first prize, for the fruits were far above average quality. Mr. W. A. McKenzie, gardener to the Bishop of Bath and Wells, Tbe Palace, Wells, was a splendid second; and Mr. G. Powell, The College, Swanley, a good third.

Messrs. J. R. Pearson & Sons, Chilwell, offered generous prizes in two classes for Newton Wonder, but in neither instance was the competition good. In the first case the class was confined to growers in the counties of Cardigan, Radnor, Salop, Stafford, Warwick, Northampton, Bedford, Cambridge, Essex, and north thereof. From such an enormous area only two competitors came, these being Mr. J. Hill, Babraham Hall; and Mr. H. H. Hurnard, Higham, who received the first and second prizes. In the other class, open to exhibitors south of the counties named above, there were four dishes shown. Mr. R. Edwards was placed first, Mr. G. Goldsmith second, and Mr. J. Harris, gardener to P. Crowley, Esq., Waddon House, Croydon, third. The specimens were of fair quality throughout. Almost a dozen dishes of Potts' Seedling were shown, and very beautiful were many of the fruits. Mr. T. Turton was a fine first, Mr. G. Woodward a good second, and Mr. J. Hudson third. Nine exhibitors showed Sandringham, and Mr. J. McKenzie was accorded tbe leading position with grand fruits. Mr. G. Wythes, gardener to Earl Percy, Syon House, Brentford, was a splendid second; and Mr. C. Ross a good third. Of Spencer's Favourite only four dishes were shown, that belonging to Mr. G. Woodward being the best. Mr. W. Jones was second, and Mr. B. Miller third. Stirling Castle was staged up to its best standard by Mr. J. McKenzie, who secured the first prize from about nine opponents. Mr. W. Strugnell, gardener to the Hon. W. H. Long, Rood Ashton Park, Trowbridge, was a creditable second; and Mr. W. King a fair third.

Mr. J. McKenzie went to the front in the class for a dish of Stone's Apple or Loddington Seedling, and was followed by Messrs. G. Woodward and A. Brooks in the order named. Of The Queen some very handsome fruits were staged, especially by Mr. J. McKenzie, who was again first. Mr. G. Woodward was second, and Mr. C. Herrin third. Mr. J. McKenzie's dish of Tower of Glamis was perfect. Mr. A. Brooks was second, and Mr. C. A. Bayford third. In all eight dishes of this variety were staged. Three exhibitors only showed Tyler's Kernel, these being Messrs. J. McKenzie, J. Hill, and A. Basile, who received the prizes in the order in which their names are given. Some two dozen growers brought Warner's King, and it will be admitted that many fine fruits were seen. Mr. J. McKenzie was again first, Mr. G. Chambers second, and Mr. G. Woodward third, all the prizes going to exhibitors from within a short distance of Maidstone. There were about a dozen and a half of competitors in the class for a dish of any other variety, and Dutch Codlin from Mr. J. McKenzie secured the first prize. Mr. W. Camm was second with Lady Henniker in good character, and Mr. G. Fennell third with Castle Major.

Pears.

Turning now our attention to the Pears we found there were upwards of thirty classes devoted to them, and in almost all of which there were exhibits. In some of the classes the numbers staged were very large, and the competition remarkably keen; whilst in others there were only two or three dishes shown. As a whole the quality was good throughout, though tnere were occasional specimens of more than average merit, and a few considerably below it. Many varieties were represented by specimens clean in the skin, of perfect form, and very beautiful in colour. Below will be found the names of the prizewinners in the major portion of the classes, but not in those where tbere were only one or two competitors.

Tbe first to be examined was Bergamotte Esperen, in the class for which we found about eight dishes of varying qualities. Mr. J. Powell secured the premier position with shapely fruits, and was followed by Mr. C. Ross in the second position, and Mr. G. Woodward in the third. About the same number of exhibits of Beurré Bosc were tabled. Mr. G. Goldsmith was a capital first; Mr. W. Cotterell, gardener to Sir W. N. Geary, Bart., Tonbridge, second; and Mr. B. Osborn, gardener to the Rev. H. G. Palmer, Holme Park, Reading, third. Of Beurré Diel there were upwards of a dozen exhibitors, and several of them staged in handsome form. Mr. G. Woodward secured the first prize with large shapely specimens; Mr. G. Wythes was a very close second, and Mr. G. Goldsmith third. Some fine dishes were to be seen in the class for Beurré Hardy, the first prize being taken by Mr. G. Woodward with good fruits; Mr. H. C. Prinsep was second, and Mr. W. Messenger third. There were seven or eight dishes staged. One of the most popular classes was that devoted to the luscious Beurré Superfin, of which eleven dishes were shown. Mr. G. Woodward showed splendidly for the first position, as did Mr. G. Goldsmith, who was second. Mr. J. Webb, gardener to H. Padwick, Esq., Manor House, Horsham, was third. The only exhibitors of Comte de Lamy were Messrs. T. Turton, T. W. Herbert, and G. Goldsmith, to whom the prizes were awarded in the same order as the names are given here.

Five contestants came forward with Conference, and Mr. G. Woodward, with specimens in excellent character, was adjudged tbe leading position. Mr. W. Slogrove, gardener to Mrs. Crawford, Gatton Park, Reigate, was a good second; and Mr. J. Powell third. Conseiller de la Cour was represented by about half a dozen dishes, the best of which was exhibited by Mr. J. C. Tallack, who was in splendid form. The second prize was won by Mr. A. Basile; and the third by Mr. C. A. Bayford. The highly esteemed Doyenné du Comice brought out nearly a dozen exhibitors, some showing strongly, while others were a trifle weak. Mr. J. Powell was a grand first; Mr. B. Calvert, gardener to Col. Archer Houblon, Bishop's Stortford, a good second; and Mr. G. Woodward third. A splendid display was made by the eight dishes of Durondeau, which was exceptionally well shown. Mr. G. Woodward, with beautiful examples, was first; Mr. W. G. Pragnell second; and Mr. W. Cotterell third. Of the six or seven competitors staging Easter Beurré Mr. B. Calvert was placed in the highest position with typical specimens. Mr. G. Woodward was a good second, and Mr. J. Powell third. There were only three competitors in the class for Emile d'Heyst, and of these Mr. G. Woodward was a good first, followed by Mr. W. Strugnell and Mr. G. Goldsmith. Tbe exhibits of Fondante

d'Automne again were not numerous, there being four only. Mr. A. Basile, staging well, took the first award ; Mr. T. Turton the second ; and Mr. G. Goldsmith the third.

Mr. G. Woodward, with superb fruits, took the chief prize in the class for Fondante de Thirriott, Mr. W. Messenger being second, and Mr. J. Nicholson, gardener to J. Melles, Esq., Sewardstone Lodge, Chingford, third. Of Glou Morçeau some grand fruits were staged by several of the nine competitors, who were headed by Mr. J. Powell with well-nigh perfect specimens. Mr. G. Woodward was a highly creditable second, and Mr. B. Calvert a good third. Rather over a dozen dishes were shown in the class for Josephine de Malines, and it is almost superfluous to say that amidst such an array there were some splendid fruits. Mr. J. Powell was first with a fine dish, and was followed by Mr. T. W. Herbert and Mr. B. Calvert in the order named. There were about ten dishes of Louise Bonne of Jersey, and several of the fruits were exceptionally good in colour. The splendid specimens shown by Mr. J. Coles, gardener to H. Walker, Esq., Balcombe, Sussex, gained the premier prize. Mr. W. Messenger was second, and Mr. G. Goldsmith third, each showing in highly creditable form. Three exhibitors came forward with Marie Benoist, and of these Mr. G. Woodward was adjudged to have the finest examples. The second position was occupied by Mr. W. Messenger, and the third by Mr. G. Wythes. The newer Marguerite Marillat was only represented by two dishes, but these were both of splendid quality. Mr. G. Goldsmith was first, and Mr. R. Edwards second.

Needless to say Marie Louise was shown in fine form by several of the ten competitors. Mr. B. Osborn was a splendid first, Mr. G. Woodward a comparatively close second, and Mr. G. Goldsmith a good third. About half a dozen dishes of Marie Louise d'Uccle were shown, the best coming from Mr. W. Cotterell. Mr. G. Woodward was a good second, and Mr. G. Goldsmith third. Mr. G. Woodward was the most successful of the five exhibitors of Nouvelle Fulvie, followed by Mr. G. Goldsmith and Mr. G. Wythes in the order named. Only three or four dishes of Olivier des Serres were staged. Mr. G. Goldsmith took the leading position, Mr. G. Woodward the second, and Mr. J. Nicholson the third. One of the very best classes in the Pear section was that for Pitmaston Duchess, and amongst the dozen dishes staged there were several of superb quality. Mr. W. Cotterell was a grand first. Mr. G. Woodward a splendid second, and Mr. C. Harris, gardener to O. A. Smith, Esq., East Grinstead, a good third. Mr. C. Ross was a decided first of the trio who showed Seckle. Mr. T. Turton was second, and F. Harris third. Of Thompson's, four or five dishes were exhibited, the prizewinners being Messrs. J. Powell, W. Cotterell, and W. Slogrove. A splendid dish gained Mr. G. Woodward the first prize for Winter Nelis. Mr. G. Goldsmith was a good second, and Mr. F. Harris third. There were twelve competitors. In the class for any other variety Mr. G. Woodward was first with Gansel's Bergamot in superb form, Mr. J. Spottiswoode second with fine Duchesse d'Angoulême, and Mr. G. Goldsmith third with Rivers' Princess. About a dozen and a half exhibitors competed in this class.

NURSERYMEN'S SECTION.

In this section, which was confined to nurserymen, there were seven classes, and there were exhibits in all but one of these. The classes were considerably larger than the majority of those in the section with which we have already dealt ; but, of course, there were not nearly so many contestants in each. Of the most magnificent quality was a considerable proportion of the fruit exhibited, and these few classes alone made a beautiful and exceedingly interesting display. Instead of money prizes, medals of the Royal Horticultural Society were given in this section. The class in which there was no competition was that for a collection of fruit-bearing branches or sprays of any kind or variety of various fruit bushes or trees, to occupy a table not exceeding 24 feet by 3 feet.

The first class scheduled was for a collection of fruit trees bearing fruit in pots, and to which a footnote was added, permitting exhibitors to place gathered fruits or nuts between the pots, but of which no notice was to be taken by the Judges. Messrs. T. Rivers & Son, Sawbridgeworth, were the only exhibitors in the class, and they were rightly adjudged the gold medal. The trees were beautiful in shape, and were carrying grand crops of fruits. The Apples included Bismarck, Bramley's Seedling, and Cox's Pomona ; while Pears were grandly represented by Charles Ernest, Pitmaston Duchess, Conference, Durondeau, Bergamotte Esperen, Doyenné du Comice, and several others. Besides these there were Plum Coe's Golden Drop and Peach Golden Eagle, with some Crabs. Taking advantage of the permission conveyed in the schedule, the space between the pots was very profitably occupied. Beneath a bell-glass was a specimen of Pitmaston Duchess, which the ticket told us weighed 2 lbs., and which was the subject of much admiration from the visitors. The Grapes staged were quite as good as any in the show as regards colour and finish. There were bunches of Golden Queen, Muscat of Alexandria, Gros Maroc, and Black Alicante, each in fine condition. Then there were Peaches Golden Eagle and Lady Palmerston, with Plums Coe's Golden Drop, Rivers' Primate, Jefferson, Grand Duke, and Golden Transparent. Besides these we noted some splendid Apples, including Peasgood's Nonesuch in grand character, Emperor Alexander, King of Tompkins County, Cox's Orange Pippin, Ribston Pippin, Washington, and Worcester Pearmain, with such Pears as Souvenir du Congrès, Doyenné du Comice, and Louise Bonne of Jersey in the best of condition. It was a matter for regret that this was the only exhibit in the class, as the more competition there is the more instructive and interesting an exhibition becomes.

Messrs. G. Bunyard & Co., Royal Nurseries, Maidstone, were the only exhibitors in the class for a collection of hardy fruits grown partially or entirely under glass, to illustrate orchard house culture, and a very handsome and creditable display they succeeded in making. As representing the first prize a silver-gilt medal was awarded. Running the whole length of the centre of the table were fruit trees in pots, and these showed evidences of excellent culture. There were Grapes, Apples, Pears, and Figs. But it was amongst the fruits in the dishes that the very best specimens in the exhibit were to be observed, some of them being of magnificent quality. Such Apples as Wadhurst Pippin, King of Tompkins County, Worcester Pearmain, Peasgood s Nonesuch, Cox's Orange Pippin, Warner's King, Gascoyne's Scarlet Seedling, Potts' Seedling, Belle de Pontoise, Lady Sudeley, Gloria Mundi, American Mother, Lane's Prince Albert, Grenadier, Emperor Alexander, Stone's, Wealthy, Washington, Golden Noble, Twenty Ounce, Cox's Pomona, and The Queen were in exceptionally good form. The best of the several Pears were Duchesse d'Angoulême, Doyonné Boussoch, Souvenir du Congrès, Doyenné du Comice, Pitmaston Duchess, Marguerite Marillat, Conference, Marie Louise, Beurré Fouqueray, and Marie Benoist. In addition to these there were Grapes, Figs, and Tomatoes in dishes. As usual in the Maidstone fruits the colours were marvellously rich and clear.

Following up their success in the preceding class Messrs. Bunyard and Co. annexed the gold medal in the class which, to quote the schedule, was for a "collection of not less than seventy-five, or more than 100 distinct varieties of hardy fruits, in baskets or dishes, grown entirely in the open air ; to be arranged on a table of about 24 feet by 6 feet, or an equivalent space ; foliage plants may be added, and branches of any fruit-bearing trees or bushes." The exhibit was undeniably a handsome one, but there was a suspicion of formality in the piles of fruit that occurred at intervals, and each of which was surmounted by a Palm. Again the quality was of the very best, and well worthy of the firm. Although several varieties of Apples were the same as in the foregoing class, we observed in particularly good condition Bismarck, Royal Jubilee, James Grieve, Cornish Giant, Allington Pippin (splendid), Bramley's Seedling, King of the Pippins, Mrs. Barron, Grenadier, Col. Vaughan, Baumann's Red Winter Reinette, Yorkshire Beauty, and Newton Wonder. Of Pears there were Beurré Hardy, Beurré Superfin, Beurré Diel, Nouveau Poiteau, Doyenné Boussoch, Pitmaston Duchess, Gansel's Bergamot, Souvenir du Congrès, Conference, and Marie Louise. Mr. H. Berwick, Sidmouth, received the second prize. His collection was comprised of most of the leading varieties of Apples and Pears, the former predominating. In shape and colour the Sidmouth Apples were wonderfully good.

The silver-gilt medal offered as a first prize in the class for a collection of not less than thirty, or more than fifty distinct varieties of hardy fruits, in baskets or dishes, grown entirely in the open air, to be arranged on a table of about 24 feet by 3 feet, or an equivalent space, and to which foliage plants might be added, and branches of any fruit-bearing trees or bushes, was well won by Mr. J. Colvill, The Nurseries, Sidmouth. The second prize was taken by Mr. A. Wyatt, Hatton, Middlesex, who was the only other exhibitor. Amongst his Apples Mr. Colvill staged Mère de Ménage, Cox's Pomona, New Hawthornden, Beauty of Kent, Lane's Prince Albert, Worcester Pearmain, Lord Suffield, Newton Wonder, The Queen, and Gascoyne's Scarlet Seedling. Of Pears the following varieties were represented—Brockworth Park, Pitmaston Duchess, Grosse Calebasse, Marie Louise, and Beurré Clairgeau, while in addition there were Plums, Peaches, and Medlars. The fruit in this stand again was richly coloured.

Mr. H. Berwick was apparently the only exhibitor in the class for a collection of not less than thirty or more than fifty distinct varieties of Pears. They had to be staged either in baskets or dishes, and must have been grown entirely in the open air. The table space allowed was 24 feet by 3 feet, and foliage plants or branches of fruits were permissible. The specimens were not, as a rule, very large, but they were clean, even, and of good colour. Amongst others noted were Durondeau, Fertility, Pitmaston Duchess, King Edward, Doyenné Boussoch, Beurré Capiaumont, Brown Beurré, Beurré Clairgeau, Beurré Diel, Autumn Bergamot, and Beurré Superfin. The first prize was a silver-gilt medal.

In a similar class for Apples, the silver-gilt medal went to Mr. John Basham, Fair Oak Nurseries, Bassaleg, Newport, Mon., who staged some superb examples, excellent alike in colour and in shape. Though some varieties were not, of course, quite so good as others, there was scarcely a weak dish in the whole exhibit. Amongst the best were Tyler's Kernel, Warner's King, Duchess of Oldenburg, Manx Codlin, Peasgood's Nonesuch, Sandringham, Ribston Pippin, Frogmore, Lane's Prince Albert, King of the Pippins, Lord Derby, Sturmer Pippin, Beauty of Kent, Bismarck, Newton Wonder, Ecklinville Seedling, Lord Grosvenor, Cox's Orange Pippin, and Tower of Glamis.

MISCELLANEOUS EXHIBITS.

Though miscellaneous exhibits are not particularly encouraged by the authorities at this show, they on the present occasion made a very fine and extremely diversified display. There were several splendid stands of flowers, as well as several of fruit, but we cannot give extended notice to them owing to so much of our space having been taken up by the competitive section.

Messrs. Paul & Son, the Old Nurseries, Cheshunt, had a large exhibit of pot Roses, baskets of Roses, and herbaceous plants, including Phloxes, as well as an assortment of Apples and Pears. Messrs. J. Laing & Sons, Forest Hill, staged an imposing and representative display of hardy flowers and Dahlias, the whole forming a very attractive exhibit. The Begonias also shown fully maintained the reputation of the firm. Messrs.

Harkness & Sons, Bedale, exhibited a very attractive display of Gladioli, Phloxes, Gaillardias, and a variety of hardy flowers. A grand exhibit of Roses came from Messrs. W. Paul & Son, Waltham Cross. They were chiefly Teas and Chinas. In the latter section Queen Mab was very noteworthy. A special feature was made by the varieties introduced by the firm during the Victorian era, which included Empress Alexandra of Russia, Sylph, Enchantress, Medea, and Corinna.

Messrs. Sutton & Sons, Reading, exhibited a choice collection of Tomatoes, including several novelties. Sunbeam, Perfection, Eclipse, and Prince of Wales were very fine indeed. Peachblow and Pomegranate, both novelties, were well shown, but the colour is hardly likely to meet the popular taste. Mr. B. Wells, Crawley, had an exhibit of Apples, including Peasgood's Nonesuch, Bramley's Seedling, Bismarck, and Worcester Pearmain. A pleasing change was provided by Mr. W. Wells, Redhill, who showed early Chrysanthemums, Harvest Home, Lady Fitzwygram, and Rose Wells being well represented. Mr. W. Horne, Cliffe, Rochester, staged a good collection of Apples.

From Mr. Owen Thomas, the Royal Gardens, Windsor, came a regal display of Pines, Grapes, Pears, Apples, and Tomatoes, all effectively arranged and affording a very pleasing exhibit. Messrs. H. Cannell and Sons, Swanley, had a group of Physalis Franchetti in good form, also a fine group of Cannas somewhat formally arranged. Messrs. J. Veitch and Sons, Ltd., had a very attractive show of Nerines grown in small pots, arranged with Palms and Maidenhair Ferns ; also a large exhibit of the leading varieties of Apples and Pears, with baskets of Physalis Franchetti and bunches of Rosa rugosa. The Horticultural College, Swanley, sent an exhibit of fruits both fresh and bottled, the latter consisting of Raspberries, Gooseberries, Currants, Plums, and Cherries.

Messrs. J. Cheal & Sons, Crawley, had an imposing display of Apples and Pears in dishes, also a number of cordons, to illustrate the free-bearing character of the varieties. The same firm showed Dahlias, including the Pompon, Cactus, and single sections. Messrs. Fisher, Son, and Sibray, Sheffield, staged a large collection of Apples and Pears, as also did Messrs. J. Peed & Sons, Norwood. Messrs. Gaymer & Sons, Attleboro', Norfolk, exhibited a collection of Apples and cider bottles, the latter for the most part empty, though some were filled with the necessary contents.

Messrs. A. W. Young & Co., Stevenage, had a display of ornamental Gourds and Tomatoes, also a large exhibit of hardy flowers. A very large and attractive collection of Apples and Pears was staged by Messrs. S. Spooner & Sons, Hounslow, comprising all the leading varieties. A collection of Pears and Grapes came from the Royal Horticultural Society's Gardens, Chiswick. This exhibit included the largest bunches of Grapes in the Show. The variety was Gros Guillaume from the large vinery at Chiswick.

A VISITOR'S COMMENTS.

ALTHOUGH there can be no doubt but that the Directors of the Crystal Palace may be assumed to know their own business best, yet their way of arranging the recent great fruit show did materially detract from the fine effect which otherwise would have been produced could the whole of the exhibits have been blocked into the centre transept, rather than broken into three sections, which not only detracted from the effect, but also materially from the pleasure such a fine show might be expected to furnish. Judging by the rather small attendance on the second day, it seems as if the firework attractions on the first day, when the attendance was large, were even greater with the public than the show. Somehow we never can at the Palace, grand a place as it is, get the crowds which went to see the famous Guildhall Fruit Show, but that was at least a gratuitous show, and was centrally situated.

I can hardly regard the Conferences on the two first days as successes. I could not attend the third. It seemed as if the public present at the Palace were not notified of the proceedings, either by means of prominent notices in the Palace or the distribution of small handbills. Unless these functions provoke more interest in the future they may not be worth keeping up. Probably they suffered somewhat from the fact that the papers read, though full of interest, were yet rather retrospective and descriptive than practical or controversial, but that was another of the products of a jubilee year that is happily nearing its end. Any future arrangements should require papers not exceeding twenty minutes duration on topics likely to arouse active interest and promote what is sometimes so lacking – free and full discussion. It would be well if, also, persons present would send in their names on paper if they wished to take part in the discussion, and that preference should be given to new men, or strangers, as in that way more widespread information is obtained. It is questionable whether the Conferences would not be better attended about 6 P.M., rather than in the afternoon, just after lunch, when everyone wants to enjoy the show.

No doubt from some quarters, especially from those who like to croak about the decadence of gardening, we shall hear that the Grapes were not up to the proper standard. Grape-showing seems to be like the exhibiting of other products, very much depends on the value of the prizes offered. Something also depends on the time of year when a show is held, and a good deal depends also on the duration of the show. Growers from a distance find that to bring fruit to the Crystal Palace means leaving home on the Wednesday, and getting back on Sunday or Monday. It is thus a long and a costly outing. Also the exposure of Grapes for three days takes the gilt off them very much. Such things make subjects for consideration, and big prizes are needed to encourage the bringing of the finest bunches. Yet all the same, there were many fine samples present, such as served to show that Grape-growing is far from being a lost art ; indeed, some of the best bunches shown would have been hard to beat anywhere. It is true size is a great point with so many persons, but Grapes have much higher qualities than is found in size of bunch, such as handsome massive contour, size of berry, finish, bloom, and flavour. These were features found in many directions at the Palace, and no doubt will be so long as the fruit show endures.

In very few cases were there disqualifications arising from non-observance of the classification of Apples, Pears, and Plums published in the schedule. That fact serves to show that these classifications were studied and observed. Their value is great, because they leave no room for dispute, should any arise, during the show. In Plums, one dish was disqualified because it was Monarch, shown as Kirke's. One wonders whether the exhibitor, after all, might not have been misled by receiving the wrong variety from the nursery. That there was any intention to do wrong no one believes. A prominent exhibitor was in one case, with fine fruit too, disqualified for showing Baumann's Red Reinette as a kitchen Apple, whereas it is now definitely classed by the R.H.S. as a dessert variety. As the classified lists run to seventy each of dessert and kitchen varieties, there is little need for making mistakes, the range of selection being so great.

Very interesting, as a rule, are the single dish classes, especially of Apples. Out of the twenty-three devoted to the dessert varieties, four only were poorly filled. The general entry in a class soon tells not only whether a variety is widely grown, but also whether it is good. The poorest represented were Allen's Everlasting, Egremont Russet, and Williams' Favourite ; indeed, these varieties are little known or grown. Surely there are many much more popular varieties than these worthy of all encouragement. I did not see in either anything specially worthy of notice, or showing that they were meriting the honour paid them. Rosemary Russet, Cockle's Pippin, Braddick's Nonpareil, Golden Pippin, Golden Russet, and Wyken Pippin are all better and well worthy of a place with the best. Few new dessert varieties can excel them, many are not nearly so good. There should be a variation of several varieties in the list every year.

Of kitchen varieties, there being no less than thirty-eight classes, a pretty comprehensive selection, a few seemed to be hardly worth the honour. There is Golden Spire for instance, a singularly ungainly Apple of the most wasteful description to grow, totally devoid of exhibition excellence, and one that rarely crops up in a good class selection. We have much better than that. Seaton House was indifferently seen ; and a very poor Apple, as its flesh is so very hard, though it is handsome to look at, is Spencer's Favourite or Queen Caroline. Such varieties as these, if anyone has decent samples, can always find their place in the class for any other variety. Hormead Pearmain might also be omitted, as it brings such poor competition. Far finer for ordinary use or for exhibition are Dutch or Catshead Codlins, Gloria Mundi, Waltham Abbey Seedling, and either of the Beefings, as really useful for keeping. I wonder how many grow St. Edmund Pippin, which two years, though I am not sure of in succession, took the first prize in the class for any other dessert variety. It has a brown russetty cover on a rather yellow skin, and makes a nice sample ; but it after all differs very little in appearance from Golden Russet, and I do not know in what respect it is better. If in this class judgment is to be for pure dessert purposes, the test should be flavour. I do not think any such test was applied at the recent show. I notice we have not seen the variety in the competition for Messrs. Veitch & Sons' flavour prizes yet.

Some useful information might be obtained were a census of the best twelve dessert or kitchen Apples and twelve best Pears in every case for succession, for cropping, and general excellence, either at the show or taken from the Society's single dish classes. We have not yet, so far as I know, obtained any general opinion on these things since the Chiswick Apple and Pear Congresses.—A. D.

ISLE OF WIGHT HORTICULTURAL ASSOCIATION.—The monthly meeting of the above Association was held at Newport on Saturday last. Dr. J. Groves, J.P., presided over a large attendance of members. A paper was read on "Fruit Culture in the Isle of Wight," by Mr. S. Heaton, Hon. Sec. of the Association, and Horticultural Instructor for the Isle of Wight County Council. There were excellent collections of fruit staged by Messrs. G. Bunyard, Maidstone ; T. Collister, Bembridge ; C. H. Snork, Shanklin ; A. J. Munson, Brading ; Geo. Williams, Gatcombe ; W. Cooke, Wootton ; R. Parsons, W. Scott, C. Orchard, H. Webber, C. Russell, J. J. Limington, Newport; T. E. Mole, Chillerton ; and the Rev. H. R. Venn, Newtown. Mr. J. H. King, Blackwater, staged bottled fruits of Currants, Gooseberries, and Plums ; Messrs. F. Guy and T. E. Mole, Tomatoes ; and Mr. J. Niblett, Niton, Peas, Cauliflowers, and Cactus Dahlias. Mr. W. Matthews, Carisbrooke' showed Apples and blooms of Dahlias ; Mr. H. Webber, a collection of Carnation Margaret, and Mr. Martin Silsbury, Shanklin, seedling blooms of Chrysanthemums. The Adjudication Committee awarded several of the Association certificates for the meritorious exhibits, and named a large number of dishes of fruit which had been staged for that purpose. A vote of condolence was passed with Mrs. Spittal and family in their sad bereavement in the loss of the Rev. J. Spittal, late Vicar of Haven Street, who was an honorary member of the Association from its commencement, and a prominent rosarian and horticulturist. Thirty new members were elected, which brings the total number of members up to 213. The next lecture will be on "Chrysanthemums," by Mr. J. Barkham, of Haven Street.

Notes & Gleanings

EDITORIAL NOTICE.—It is particularly desired that all communications, parcels, catalogues, and newspapers intended for the EDITOR, be sent direct to 8, ROSE HILL ROAD, WANDSWORTH, S.W.

EVENTS OF THE WEEK.—London horticulturists will have a busy day on Tuesday, the 12th inst., that is to say if they attend each of the three events that are fixed for that date. The Committees of the Royal Horticultural Society will meet at the Drill Hall, James Street, Westminster. The second show of the National Chrysanthemum Society will open on that day and continue over Wednesday and Thursday; while in the evening of Tuesday the United Horticultural Benefit and Provident Society will hold its annual dinner at the Holborn Restaurant under the presidency of Mr. H. B. May.

—— WEATHER IN LONDON.—On the evening of Wednesday, the 29th ult., a terrific thunderstorm passed over London, being more severe in the northern suburbs. Much damage was done, and the rain fell in torrents. Thursday, Friday, and Saturday were fine, but heavy rain fell during the early hours of Sunday morning, the day, however, proving dry though dull. Several drizzling showers came at intervals on Monday, while on Tuesday it was fine, and Wednesday opened foggy.

—— WHO SPLICED THE GRAPES AT THE CRYSTAL PALACE?—I am quite sure that all readers of the Journal who are interested in the above will feel indebted to "A. D." (page 312) for the explanation given on behalf of the unfortunate exhibitor as to how and why the bunches of Grapes had been tampered with. What a rough and ready young assistant! for in a previous issue of the Journal (page 196) I notice "On-looker" states that each bunch had been spliced to the tune of one, two, and three pieces. I cannot help thinking that the assistant, though clumsy, must nevertheless be rather smart to be able to put together broken limbs so successfully. Surely he would do well in another profession.—OBSERVER.

—— A FINE ONION BED.—One of the finest beds of Onions I have seen this season was in the gardens of Lockinge Park. Several varieties, such as Ailsa Craig, Lord Keeper, and others, were growing side by side, and a more even bed could not be desired. All the bulbs of Ailsa Craig ranged about the same size, as did those of the other variety named. It was apparent that the soil had been excellently prepared, while the after attention also must have been of the closest. Over the bed was spread a light mulching of half-decayed horse droppings, and it cannot be doubted that the bulbs have received a considerable amount of benefit therefrom. The bulbs, when I saw them, were ripening off beautifully, and no difficulty would have been experienced in securing three or four dozen bulbs fit for the show table of either of the varieties. This bed, like the rest of the vegetable garden, is a credit to Lord Wantage's diligent gardener, Mr. W. Fyfe.—VISITOR.

—— EMIGRANTS' INFORMATION OFFICE.—The October Circulars of the Emigrants' Information Office and the annual penny Handbooks show the present prospects of emigration. There is no demand for anyone in Canada at this season of the year. There is no demand for more labour in New South Wales. The drought has been terribly severe in nearly all parts, except those watered by the coastal rains; the Riverina district has perhaps suffered worst of all. Though there has been a more general fall of rain recently, the heavy losses of stock, and the consequent decrease in the output of wool, must seriously affect for some time the demand for labour. The drought in Victoria also has been exceptionally severe, and there is no demand for more labour. The carrying on of the Mildura Irrigation Colony is now practically assured, and the Government will bring in a Bill to authorise a guarantee of money for five years. In all the farming districts of Queensland a good demand exists for competent ploughmen and farm labourers. In Western Australia the demand for mechanics, farm and general labourers, miners, and female domestic servants continues. In Tasmania there is no actual demand for labour. During the next few months there will be a demand in New Zealand for good men accustomed to all kinds of farm labour. Further information may be had from the Emigrants' Information Office, 31, Broadway, Westminster, S.W.

—— GARDENING APPOINTMENT.—Mr. W. Simmons, gardener for the late K. R. Murchison, Esq., Brockhurst, East Grinstead, Sussex, has been appointed gardener to C. Page, Esq., Woodside, Burstow, near Horley, Surrey.

—— ASTERS AT MORTLAKE.—Travellers on the South-Western Railway, between Mortlake and Richmond, will doubtless have noticed the large beds of Asters on the nursery ground by the line side. This was an extensive trial, that has been conducted by Messrs. Jas. Carter & Co., High Holborn, and some beautiful colours could readily be perceived. The recent rain storms have, however, played havoc with the blooms, whose beauty has now departed.

—— POISONOUS PROPERTIES OF DAVALLIAS.—In reply to your correspondent, "Journeyman," page 313, respecting the poisonous properties of Davallia fijiensis, I may mention that several varieties of that beautiful Fern possess the peculiarity of which he speaks. D. Mooreana is far the worst variety I have had experience with. We have a large plant in our collection; each time we have occasion to move we experience an unpleasant sensation, similar to that described by "Journeyman." In my case the acute smarting is accompanied with itching and sneezing. The young men are affected in much the same way. We attribute it to the spores, which, being released from their cases through the shaking of the fronds, settle upon the skin and cause the irritation.—T. L.

—— KEI APPLE AS A HEDGE PLANT.—I was pleased to read the paragraph referring to the Kei Apple on page 266. There are certain good points which make one wish for a better acquaintance with this evidently useful hedge plant. The fact that it is an evergreen will recommend it to many; again, its 6-inch thorns are suggestive of its being much preferred to Thorns for field hedges. Have any of your readers any experience of this plant in Great Britain? I should much like to give it a trial, but am at a loss to know where to look for a supply.—T. D. S. [The paragraph was taken from one of the excellent Bulletins that are issued by the Kew authorities. Perhaps if you wrote to the Director, Royal Gardens, Kew, he would be able to assist you with information.]

—— DAHLIAS AT KINGSTON.—Through the kindness of Mr. S. Mortimer of Farnham, who is undoubtedly now one of the champion Dahlia growers and exhibitors, I was enabled on Saturday evening last, on the occasion of giving the first of our fourteenth session of Winter Saturday Popular Entertainments in Kingston, to show the people a really splendid display of Dahlias, such as had never before been seen in the town. The spectators literally opened their eyes in astonishment at the wonderful size and form of the Shows, the beauty of the Pompons, and the singularly lovely Cactuses. The group was 30 feet long, and comprised some 170 Show varieties, and about 30 of Cactuses and Pompons, backing the boxes. Whilst the Shows included every good class variety, the Cactuses comprised A. Deal, the new scarlet; Starfish, Cycle, Lady Penzance, Miss A. Nightingale, J. A. Frewer, Harry Stredwick, Harmony, and others; and the Pompons included Winifred, E. J. Trucker, Gipsy, Vivid, Arthur West, Lady Blanche, Tommy Keith, and Little Julia. Announcement of the Dahlia display helped to cram the Great Hall of St. James to its very utmost, scores being unable to obtain admission. Kingston district has no summer flower show, and many beautiful popular flowers are here in consequence seldom seen. —A. D.

—— DEVON AND EXETER GARDENERS' ASSOCIATION.—The annual meeting of this Association was held last week in the Council-room of the Guildhall, Exeter, under the chairmanship of the President, Mr. E. A. Sanders, J.P. There was a numerous attendance, including the Right Worshipful the Mayor of Exeter (Mr. Alderman R. Pople), Mr. P. C. M. Veitch, J.P., and others. After the adoption of the report Mr. Sanders was re-elected President, Mr. Andrew Hope Secretary, and Mr. W. Mackay Hon. Treasurer. The following Committee of Management was also elected, on the motion of Mr. R. J. Mills, seconded by Mr. G. Anning:—Messrs. J. Abrams, W. Andrews, J. Baker, W. R. Baker, W. Charley, G. C. Crabbe, J. Lacon, J. Luxton, J. Rogers, W. Rowland, S. Radley, and J. Weeks. All the elections were unanimous. Mr. P. C. M. Veitch said he felt sure all the members present would like to thank the Mayor for the encouragement he had given the Association during the time he had held that office, and for his kindness in granting them the use of the Guildhall for their assembly. Mr. G. B. Carlile seconded the vote of thanks, which was carried unanimously. The Mayor observed that it gave him a great deal of pleasure to grant the loan of the Guildhall, and he had taken upon himself to grant them the use of it for another year.

—— The Royal Horticultural Society. — We are informed that Mr. J. Weathers has resigned his position as Assistant Secretary to the Society. He was appointed to the post about eight years ago.

—— Russellia juncea.—Though not one of the showiest of our greenhouse plants, this is certainly worthy of a place in every collection. It is specially serviceable where hanging plants are required, and owing to its pendulous habit it can only be shown to advantage in this way. The flowers, which are trumpet-shaped, about 1 inch long, and of a brilliant scarlet colour, are freely produced nearly all the year through. The numerous long, rush-like, branching stems are clothed with small linear or lanceolate leaves. It is a plant of comparatively easy culture; it can be grown either in pots or baskets, and delights in a light, moderately enriched soil. A house, where a night temperature of 55° to 60° is maintained during the winter months, will suit this plant well. The most convenient method of propagation is, says a writer in the "Garden and Forest," by cuttings made from the little branchlets taken off with a heel. These root readily in sand or sandy soil in a propagating case with gentle bottom heat.

—— New Recreation Ground for Richmond.—We hear that the negotiations between the Town Council and the Crown authorities for the purchase of a large portion of the famous Old Deer Park as a public recreation ground are almost completed, and the hope is expressed that the "new lung for Greater London" will be ready for public opening on the 10th October. The Town Council will acquire nearly 90 acres of the park, and a deputation from the Council will this week wait upon the Chief Commissioner of Works in order to settle the final agreement. The new ground will meet a long-felt want of the local cricket and football clubs, in addition to affording one of the most picturesque open spaces on the banks of the Thames. During the week a meeting of the representatives of the local athletic clubs will be held for the purpose of forming a ground committee to assist the Town Council in regulating the park, and it is hoped it will be possible to secure a member of the Royal Family to perform the opening ceremony.—("Garden.")

—— Dahlias at Rothesay.—Messrs. Dobbie & Co. of Rothesay have this season at their famous nurseries 3 acres of Dahlias, with 15,000 plants in magnificent bloom. Every autumn I am becoming more enamoured of the Dahlia. Though it has not the fragrance of the Lily, the Carnation, or the Rose, for floral impressiveness, when planted with a view to artistic effect, its qualifications are supreme. I like it even better than the early flowering Chrysanthemum, and that is saying much. In my own garden the only varieties of the Dahlia much cultivated are the Single and the Single Cactus, which do not attract earwigs quite so much as their stouter sisters; and while they have also a much more graceful and refined appearance, are considerably less disturbed by the somewhat trying visitations of the equinoctial blasts, which generally make havoc of our gardens unless very strongly sheltered, at this period of the year. It is very unfortunate for these and other fine autumnal flowers, such as the Hollyhock, the Speciosum Lily, and the early Chrysanthemum, that they should, just when they reach the culmination of their beauty, be treated by Nature so very unmercifully.—David R. Williamson.

—— Potato Crop.—This year the crop of Potatoes in Great Britain has had devoted to it 352,365 acres in England, 32,609 acres in Wales, and 119,940 acres in Scotland, the total for Great Britain being 504,914 acres, consequently England possesses 69·8 per cent. of the tuber area, Wales 6·5 per cent., and Scotland 23·7 per cent. The total decrease on the year amounts to 58,827 acres, consisting of 47,739 acres in England, 1239 acres in Wales, and 9849 acres in Scotland. Each of the English counties participated in the diminution except Devon and Rutland, which gained 100 and 11 acres respectively. The decline in Lincoln is 7641 acres, which more than balances the increase of 5754 acres in that county in the preceding year. Other noteworthy declines, according to a contemporary, are those of 3448 acres in the West Riding of Yorkshire, 3179 acres in Essex, 2951 acres in Kent, 2533 acres in Lancaster, 2505 acres in Cambridge, 2295 acres in Bedford, and 2180 acres in Chester. The largest county areas under Potatoes in England are 50,197 acres in Lincoln, 37,053 acres in Lancaster, 23,252 acres in Chester, 23,152 acres in the West Riding, and 19,847 acres in Cambridge. The area under Potatoes shows a decline in all the counties of Wales except Montgomery and Radnor, in which the increases are 60 acres and 2 acres respectively. The largest county area under Potatoes in Wales is 5936 acres in Cardigan. Except Nairn, which has the small increase of 11 acres, all the Scottish counties show decreases. The highest county areas of Potatoes are 13,326 acres in Fife, 11,429 acres in Forfar, 11,416 acres in Perth, and 7343 in Ross and Cromarty.

—— Sussex Rainfall in September.—The total rainfall for the past month at Haywards Heath was 2·82 inches, being 0·31 inch below the average. The heaviest fall was 0·54 inch on the 5th. Rain fell on thirteen days. Total for the nine months 23·23 inches, 2·96 above the average. The maximum temperature was 71° on the 29th, the minimum 36° on the 19th. Mean maximum, 64·15°; mean minimum, 47·03°; mean temperature, 55·59°, a little above the average.—R. I.

—— September Weather at Driffield.—Mean temperature at 9 A.M. (corrected) 54·74°. Wet bulb 52·42°. Mean maximum 60·57°; mean minimum 45·08°. Highest, 66·8° on the 24th; lowest, 36·6° on the 12th. Mean of maxima and minima 52·82°. Mean radiation temperature on the grass 41·22°; lowest, 30·5 on the 4th. Rainfall 2·780 inches. Number of rainy days, fifteen. Greatest amount on one day, 0·710 on the 1st.—W. E. Lovell, *Observer, York Road, Driffield.*

—— September Weather at Hodsock Priory.—Mean temperature, 53·5°. Maximum in the screen, 67·9° on the 13th; minimum in the screen, 34·5° on the 19th; minimum on the grass, 26° on the 19th. Frosts in the shade, 0; on the grass, 10. Sunshine, 115 hours, or 31 per cent. of possible duration. Rainfall, 2·02 inches. Rain fell on twelve days. Maximum fall, 0·47 inches on the 1st. Rainfall from January is 17·54 inches. Difference from average – 0·77. A cool but otherwise normal month. After some rain on the first few days dry weather set in.—J. Mallender, *Worksop.*

—— South Wales Weather.—The following is a summary of the weather here for the past month:—Mean maximum temperature, 66°. Highest reading, 85° on the 12th; mean minimum, 40·4°; minimum 29° on the 9th. Total rainfall, 5·79 inches. Greatest fall, 1·27 inch on the 29th. Rain fell on eighteen days. There were six sunless days. The wind was in the S.W. and W. on eleven days, and in the N.W. on eight days. The last sixteen days of August and the first five days of September rain fell every day, making a total for the twenty-one days of 7·43 inches. The early part of the month the wind was very strong, but for the latter part the wind was quiet. Total rainfall up to date, 41·61 inches, which has fallen on 164 days.—Wm. Mabbott, *Dowlais.*

—— The Weather Last Month.—September gave us a period of nine fine days in succession—5th–14th. The remainder of the month was wet. No frost occurred during the month. The wind was in a westerly direction twenty days. Total rainfall amounted to 2·13 inches, which is 0·19 inch below the average for the month. This fell on nineteen days, the greatest daily fall being 0·48 inch on the 5th. Barometer (corrected and reduced) highest reading 30·533 inches on the 13th at 9 P.M.; lowest, 29·273 inches on the 1st at 9 P.M. Thermometers—Highest in the shade 67° on the 26th; lowest, 34° on the 10th. Mean of daily maxima, 61·30°; mean of daily minima, 45·10°. Mean temperature of the month, 53·20°; lowest on the grass, 30° on the 10th; highest in sun, 127° on the 9th and 11th. Mean of the earth at 3 feet, 55·96°. Total sunshine, 135 hrs. 35 mins. There were three sunless days.—W. H. Divers, *Belvoir Castle Gardens, Grantham.*

—— Coal Ashes for Mulching Fruit.—An exchange says that coal ashes from both hard and soft coal have been tried as a mulch for Gooseberries and Currants with excellent results. We have used them around Peach and Pear trees, and thought it a considerable benefit to the fruit and the tree, retaining moisture as well as adding to the fertility. But, says an American contemporary, we selected the ashes made in summer, when about as much wood was burned as coal, the latter being used during the times when there was washing, ironing, or baking to be done, and only wood used for preparing the light meals of the day. Perhaps that was better than the ashes made in winter, when no wood was used, as the fires did not go out for weeks at a time.

—— Darlington Park.—Mr. Morrison, the Darlington Park Superintendent, has been the recipient of a gratifying communication from her Majesty the Queen in connection with the commemorative devices which have formed such an attractive feature of the Darlington Park during the Jubilee year. It will be remembered, says the "Northern Echo," that Mr. Morrison, whose devices in carpet bedding have earned for him a more than local notoriety, determined this year—the sixtieth of her Majesty's remarkable reign—to surpass his former efforts, and in this he succeeded in a remarkable degree. The central device is a large representation of the Royal arms of England, with the proper heraldic colouring, and on either side are medallion portraits of her Majesty, one as a young girl of eighteen, with the date "1837" below; and the other representing her at the present time, with the date "1897."

CAMASSIA ESCULENTA.

CAMASSIA ESCULENTA (fig. 52) is not a very widely known plant, but it has some claims to recognition which it may be well to advance. In the first place, when it has pushed up several stout stems surmounted by racemes of bright blue flowers in summer it is an object which most persons admire, and in the second place it is no delicate or tender plant, requiring careful nurture to bring it to perfection, but it is vigorous, hardy, and accommodating. To these recommendations it may be added that the bulbs are cheap and very easily grown. We first made the acquaintance of this plant in the garden of a great flower lover, an amateur whose love of gardening had concentrated itself in an intense passion for hardy flowers. He thought very highly of it, finding it not only extremely decorative in the garden but of considerable value for cutting. We also admired it greatly, and returned thanks for the promise of a few bulbs in the autumn, but which promise was not kept. They are to be bought from the majority of seedsmen in autumn, and could no doubt be had now from most advertisers of bulbs. They should be planted at once towards the middle of the border, as they grow about 18 inches high, well working the soil previous to inserting them, and covering them 2 inches deep. They may also be grown in pots, placing them half an inch below the surface, employing rich porous soil, and plunging in cocoa-nut fibre refuse for a few weeks prior to placing in the greenhouse. On looking up the habitat of Camassia esculenta we find it is a native of North America, and the bulbs are said to be eaten by the Indians, hence, presumably, its specific name. The tastes of the Red Man are not, however, such as we care to copy, and we can very well content ourselves with growing the Camassia for the sake of its flowers, which, as the engraving will indicate, are extremely attractive.

NOTES ON BULBS.

HYACINTHS.

WHEN the last instalment of these notes came to a conclusion on page 288, we had brought the bulbs to that stage where feeding was commenced as they advanced to the flowering stage, and we would now take up the line from there. Opinions vary very considerably on the question of staking, which is in almost all cases an absolute necessity, for the spikes when well grown are too top-heavy to stand in an upright position. Some growers use pieces of stout wire cut to the desired length, but for my own part I prefer neat wooden stakes, either green or white. Whether painted or not, it is obvious that they must be put as closely to the spike as possible, or they will become unsightly. To obviate this the sticks should be very sharp-pointed, when they may be forced into the bulb itself and will not do it any material injury, provided they are not pushed in too far. For tying, of course the thinnest pieces of raffia ought to be used, and these can with patience be so hidden by the bells as to be absolutely imperceptible. If the plants are to be exhibited their good appearance is enhanced by placing the pot containing the bulb within a larger one, surrounding it with damp moss and surfacing the whole with natural furnishing moss. This acts admirably as a foil for the flowers, and the colour effect is considerably heightened.

Let us now pass for a moment to the varieties, of which there are scores of all colours amongst the singles, and lesser numbers though still plenty for selection of the doubles. Some growers go in for the greatest possible number of distinct, or so-called distinct, varieties, but this has never been my practice, as I am strongly of the opinion that with a reasonably limited selection the best results can be achieved. I have one or two prime favourites of red, white, blue, and yellow, and of these I grow several bulbs, while of others not so popular the stock is restricted to two or three of each, these being desirable for the sake of change. For example, of La Grandesse we always have two or three dozen and the same of La Franchise, and thus insure a number of pure and tinted whites of the first quality. Similarly Grand Maître and King of the Blues receive good attention amongst the blues, while reds are represented by the charming Von Schiller and the brilliant Vuurbaak. As the yellows of the best quality are much scarcer the only one grown in quantity is Ida, which if older than many is certainly one of the most useful. Doubles we are not very much entranced with, as the majority of them produce spikes that are somewhat loose, but below will be found a brief selection of the best that we have tried of this section. As few growers will confine themselves to half a dozen varieties we purpose now naming several others that can be recommended strongly for their excellent properties, if sound bulbs are procured from a reliable source.

Giving precedence to the blues as being alphabetically first on the list, we shall find abundance of material from which to choose. Let us not omit to insert here Grand Maître and King of the Blues, to which we will add ten to give a dozen, as this will be more than enough for the majority of people. Czar Peter, usually described as porcelain blue, is a first-rate variety, as is Grand Lilas, which can go as a companion to King of the Blues, this latter being Oxford and the former Cambridge blue. For a rich purple we have not found one superior to Souvenir de J. H. Veen, though several have been more recently introduced. King of the Blacks needs no descriptive word. Blondin is old, but undoubtedly good, its greyish blue flowers with their silvery sheen being very beautiful. The white-edged bright blue bells of Lord Palmerston are always admired, as are the handsome light blue spikes of Leonidas. The veteran William the First is still worthy of inclusion amongst the dark, as is the equally aged Charles Dickens, which is blue shaded with purple. This bring us to eleven, and as a twelfth we will add Lord Derby, which when seen in good form is quite equal to any of the foregoing.

In making a selection of a similar number of reds we would add to the two already named Queen of Hyacinths, carmine in colour and very pretty; Belle Quirine, bright rose with lighter stripes; Cavaignac, a soft pleasing salmon; and Countess of Rosebery, dark red, to make the first half dozen. Then we would follow with King of the Belgians. This is a very good variety, the colour being bright red and the bells well set on the spike. The large trusses of Fabiola would be missed if omitted, as would the delicate pink-hued flowers of Gigantea, which is one of the closest in the truss that we have grown. Linnæus, deep carmine, and Macaulay, carmine striped, are both worthy of inclusion, while to exclude Diebitz Sabalkansky, scarlet, would be an error.

There can be no necessity to grow as many as a dozen varieties of white varieties, so the number named will be restricted to eight, and we will make up the dozen with four yellows. Madame Van der Hoop, though really a pure white, shows traces of a slight tint occasionally; but this rather adds to than detracts from its beauty. Another, with large bells, is Mont Blanc, and the same may be said of Alba Maxima. Very charming too are Grandeur à Merveille and Leviathan, which are both blush in colour, and these, with Alba superbissima, and the two already noted, will give us our selection of eight. Of yellows we should add to Ida, Bird of Paradise, King of Holland, and La Pluie d'Or, each of which is very good in its way. The violet and mauve varieties we do not touch, as they are not popular in our establishment, and mention has only been made of those of which we have had personal experience.

Our collection of doubles is always limited to one dozen varieties, allotted in the following manner:—Four each red and white, three blue, and one yellow; and though we do not grow exactly the same each year, the best results have been achieved with the undermentioned. Still giving the blues the premier place, we commend to all Laurens Koster, rich purple; Blocksberg, light blue; and Charles Dickens, blue with a shade of purple, as forming a good trio. First of the whites must be La Tour d'Auvergne, which is early and excellent for forcing, while to it we would add Princess Alice, Bouquet Royal, and Lord Anson, the first two being pure white, and the latter pair tinted. Of reds we always grow Koh-i-Noor, and usually Noble par Mérite. For two others try Grootvorst, blush, and Louis Napoleon, bright red. The double yellow with which we have had the most persistent success is Jaune Supreme. With these the list may be closed, and we think that well-grown plants will be certain to give satisfaction. It will be observed that no very expensive varieties are included; this is because our annual allowance for bulbs will not permit of the purchase of those which cost 2s. or 3s. apiece. Like many others, we have to cut according to our cloth.

In the issue of the *Journal of Horticulture* for August 19th, page 171, there appeared over the initial of "S." an excellent article on the culture of Roman Hyacinths, so that it will be superfluous for us to give details here. Suffice it to say the treatment there recommended has been proved to be in all its details good. Our earliest Romans are making good growths, but it is not until Christmas and the New Year that we experience any particular demand for them, though they are much appreciated earlier.—H. ROSE.

(To be continued.)

THE PLEASURES OF FRUIT GROWING.

(*Concluded from page* 306.)

THE other example is of a different character, but not less interesting. A farmer determined to test for himself the possibilities of hardy fruit culture, and commenced the investigation cautiously but judiciously. He had experienced the difficulties of ordinary farming, and possessing the freehold of some 20 acres of land, he thought that planting a portion of this with fruit would furnish him with change and recreation, while it might yield his family some return in after years. The result has been that in about a dozen years he relinquished his original occupation, and now devotes himself entirely to fruit growing, with manifest satisfaction to himself from every point of view. The employment was a pleasurable study to him at first, and it now combines both pleasure and profit, the latter in a degree that had not been anticipated.

The soil is heavy and difficult to work, but fertile, and the situation is well elevated, and for this reason escapes the spring frosts experienced in low-lying districts. Planting was commenced with standard Apple and Pear trees, but these have given the least satisfaction up to the present time, though a few are now beginning to yield

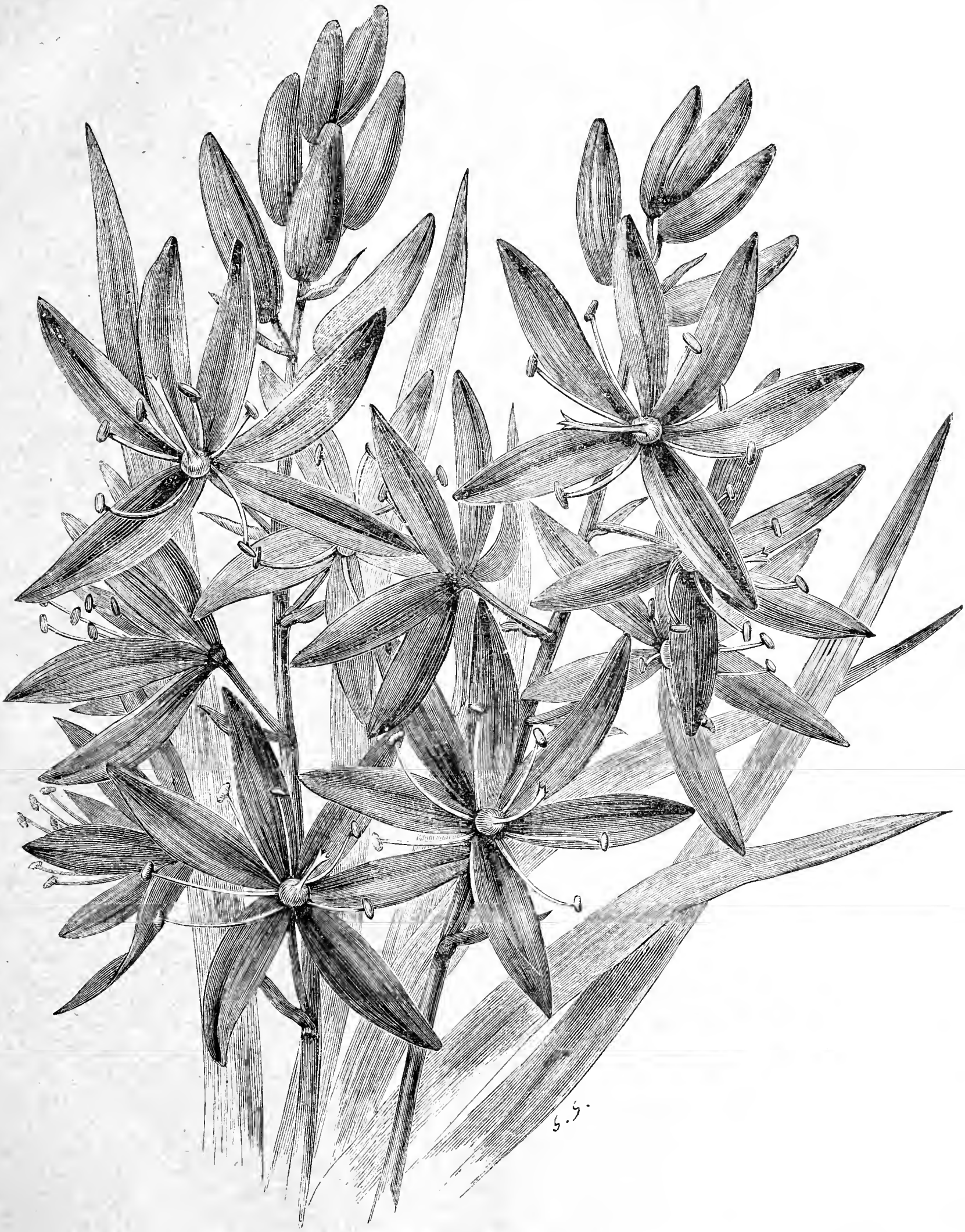

FIG. 52.—CAMASSIA ESCULENTA.

something like profitable crops. Dwarf Apples and Pears, with half-standard or bush Plums, have afforded by far the best returns, and the majority are now in excellent condition, yielding in fair seasons bountiful crops of clean well-developed fruits. For several years the owner regarded his fruit plantation as a hobby pure and simple, and in consequence indulged in many experiments, that would perhaps not have been otherwise undertaken. Yet to a man of close observation, a real student of Nature, these have yielded considerable interest, and proved of practical value also.

The result of some twelve years' experience may be summed up in a few words, and though all his conclusions may not be in accordance with the opinions of others, he has certainly had ample justification for them in his own practice.

First, as to the age of the trees to be planted, Mr. A. (as we may call him) is emphatically of the opinion that, allowing for the difference

in cost, maiden trees will give as good results in five years from the date of planting as will three-year-old trees. This in itself is an important subject, and requires careful consideration where a large area of land is to be planted. I have tried trees at different ages, and must confess to a decided preference for those three years of age, which have been subjected to careful preparation in a nursery until that time. These, when carefully planted and tended, are soon established, and a crop may be had in the second year, the chief point being to prevent free-cropping varieties bearing heavily enough to interfere with their after progress. Mr. A. contends, however, that the two years in the ground undisturbed, which brings the trees to the same age as the three-year-olds, is all in their favour as fruit bearers, and they are consequently able to bear larger crops and greater strain with safety. The subject is a wide one, and conclusions must be modified to some extent by differences of soil, situation, and varieties, but the bearing upon the prime cost of planting orchards is so great that it is worthy of close attention. Mr. A. has certainly succeeded with his maiden trees, and I do not question his results; but a careful comparison under similar conditions is needed to convince me that planting maiden trees is the most profitable, for my experience tends in an opposite direction, though if the question of decreasing the first outlay is the only consideration, the younger trees have the advantage.

Another point is in regard to planting, and here Mr. A. has formed a strong opinion founded on his own experience. He advocates and practises planting trees upon a firm base where the soil is heavy, not disturbing the soil below or digging holes, but simply heaping the soil over the roots and adding to this with weathered soil every year. Much can be said in favour of this treatment under similar conditions, for there is no doubt that digging holes in heavy clayey soil and planting in these is often productive of the worst results. In another respect it is contended that planting on the surface is beneficial; for example, it forces the roots to spread in a horizontal direction, and Mr. A. believes—and he points to many trees in proof of his observations—that this induces a corresponding spreading habit of growth in the branches, thus helping to keep the trees open and free from crowding.

Still a third matter demands notice respecting Mr. A.'s practice, and that is with regard to pruning. He maintains that young trees are cut far too often and too hard, and in many cases beyond the first shaping and subsequent thinning, or the removal of crossing branches, his trees have been free from the knife for some years. He directs attention in many cases to the fruit buds and spurs studding the lower parts of the branches and gradually extending upwards year by year, and contrasts these with others where continued pruning has resulted in increased but sterile growth.

In the matter of manures opinions have also been formed at variance with some accepted notions, but they are worthy of record because they have been proved by experience, in this case at least. Heavy soils are generally regarded as possessing abundance of potash, and theoretically it is unnecessary and wasteful to supply this as manure, yet on his heavy soil Mr. A. has found for many years that nothing gives such a good result as potash. Nitrogen in various forms he has tried and discarded for some time, and now relies exclusively upon superphosphate and potash in the proportion of 2 cwt. of the former to 1 cwt. of the latter, supplied as kainit. In the production of healthy but fruit-bearing growth this system of manuring has given the greatest satisfaction; no stable or farmyard manure is now employed, and only in a few instances of exceptional weakness has either sulphate of ammonia or nitrate of soda been used.

Such, in brief, are a few of the subjects of investigation which have yielded Mr. A. much pleasure in past years, and at the present time he has the satisfaction of reaping the results of his work in a more substantial way. At a future time something farther may be said in regard to this plantation, for it is full of interest in connection with the behaviour of certain varieties.—Observer.

DECORATIVE WORK.

(*Continued from page* 308.)

This paper, as premised in our last, pertains to what may be considered, from a gardener's point of view, the most important, as it is in various details the most comprehensive, phase of our subject—viz., the decoration of a private mansion upon some festive occasion. The decorator having received timely notice, and possibly some general outlines, which may be little more than the particular use to which certain reception or other rooms will be devoted to, will at once, even if months prior to the event, commence preparations in every available way. As no two houses are alike, no two men are alike in their methods, and season and circumstances vary considerably, it will, for our purpose, be sufficient to give one illustration which, though drawn from memory, will be as close to detail as possible. Very probably, too, the case in question may furnish ideas to a greater number of young workmen under our heading than any other, being as it was, and so often is, one of apparent difficulty by reason of a somewhat limited amount of choice material to draw upon, and the scene of intended operations necessitating a rigid economy of space. In this instance, some 300 guests were expected for the nonce to be comfortably accommodated within a pretty English home not palatial in size. Lest it should be inferred, however, that there was little to do it with and little to be done, it must be said that such was not the case—this case. Our head gardener was a man who veritably gloried in difficulties, each difficulty being his opportunity.

The preliminary operation consisted of a conference between mistress and man at an early date, with a general survey of the whole routine of operations; the latter taking notes upon the spot of those salient points where it was possible for a cunning hand to contrive an especially good effect. There was sufficient confidence placed in him as a man of resource; henceforward he had *carte blanche*, no further questions being asked or orders given. Coming to the eventful day when in a few hours all was transformed into what one distinguished guest was pleased to call "Fairyland," neither hurry nor confusion was apparent, and two hours were yet to the good when the host, after a critical survey of the completed work, said to our friend, "You have surpassed yourself!" Before going into details one thing must be impressed, obvious as it may be—viz., that the "head" had studied and planned every detail to the extent that all which worked so smoothly, and everything which seemed to fit so admirably into its place, was, in fact, as regards plans, the survival of the fittest, affording the best possible under the circumstances. It must also be added that his hands—his own hands—had fashioned considerable addenda to the general effect in the way of some amateur carpentering; but of this more anon.

At the entrance porch some room was afforded in one corner for a bold group of evergreen shrubs, sufficiently tall, and not crowded out of character. A younger hand at the work would possibly here have placed something more elaborate, if not more showy, yet less suited to the exposed position, and thus begin big at the beginning. To do so would be a mistake. It is always better to do as an old friend does in showing his houses, begin modestly, and lead up to the highest and best. In the entrance hall, a square space, and somewhat limited for room, two graceful groups were disposed in the facing angles, each consisting of a central plant of a light feathery Bamboo, springing from a cluster of Ferns, encushioned in moss, these Bamboos being sufficiently tall to arch over the folding doors. The inner hall and staircase from their greater importance were more lavishly treated. This hall, being heated by some half-dozen circular coils, enclosed in ornamental cases, with flat marble tops, they served admirably as pedestals for fine specimen Palms in tubs, throwing them well up into space. One such near the staircase foot was utilised as a vantage point for a noble Dicksonia antarctica, the plant in this position having an almost unique effect.

The tubs of these large specimens when stood upon the coils admitted of no other concealment than the virgin cork with which they were permanently covered; nor in fact did anything else appear necessary, although a few sprays of Ivy, secured by small tacks to the cork in a natural manner, was a pleasing adjunct. For brightness each available nook in this apartment contained within a circumscribed space a group of gay flowering plants, chiefly white and shades of red, all nicely fringed and interspersed with Ferns. The plan of keeping each variety of plants employed distinct in groups was commendable, giving a decided character tone, to which indiscriminate mixing is inimical. This apartment being for the occasion used as a promenade, seats and lounges were arranged to form a part of the general scheme. A turn on the staircase at right angles was not, as a vantage point, overlooked, and doubtless interested visitors wondered how such a marvellous specimen Bamboo grew in the high, narrow, cork-covered box, made to fit the angle. However, there are tricks in all trades, and a little making up at a pinch (including splicing) is quite justifiable on these occasions.

The more restricted space of a corridor leading to the principal rooms admitted the introduction on one side only of a single line of Rex Begonias banked in moss, the moss being retained in its place by two parallel lines of string which, when stretched tightly, was invisible, and prevented its being swept astray by ladies' dresses. A simple device which should be invariably employed for all floor groups where the contingency is likely to occur. Rising from the line of Begonias, at intervals some cork-covered stems were gracefully entwined with climbing Asparagus, and surmounted with a plaut of Nephrolepis exaltata, to hold which the cork had been left sufficiently high above the rustic stem. A dozen shields, cut from ¾-inch boards, and faced with red baize, hung upon the walls of this corridor at the eye level, and had a particularly good effect. These were outlined with a single row of Golden Holly leaves, each leaf partly overlapping its neighbour, thus hiding the tacks with which they were secured. In the centre of each shield a monogram had been neatly worked in the same material—Holly leaves. This, and other similar work, had been done at leisure intervals some days beforehand.

In the reception room proper, where the hostess received her guests, little extra to the usual drawing-room decoration was employed, cut flowers in vases and a few choice plants being the chief objects, with the exception of one table, upon which crimson and white Chinese Primulas were arranged *en masse*. From this the ball-room led, and here no grouping was permissible, although the ingenuity of our decorator had been requisitioned to hide a huge fireplace which had been called "particularly ugly." To fill it with plants would have been leaving it a fireplace still, not to speak of some encroachment upon space. The difficulty was overcome by improvising a screen to fill the whole space. This consisted of a skeleton frame, upon which wire netting was tightly stretched, the whole being closely interwoven with small sprays of common Yew, the same monogram previously noticed being worked out with similar sprays of the golden variety, and standing out in good relief on the dark background.

The margin is so narrow between success and failure in forming letters, monograms, or anything of this kind, that it must be here noted our artist was in this work *facile princeps*, and should any decorator doubt his power to execute similar designs, it is better not to attempt it. The head gardener in this case of decorating was, however, no mean draughtsman, and what is equally to the purpose, had acquired a trained eye which could not mislead him. Work of this kind is subjected to the highest criticism, and with those who would excel, mediocrity in the form of "amateurish" results is intolerable. Perhaps there was no more severe critic of his own work than himself, and he had, too, that rare gift of asking an opinion without seeking for praise. An improvised orchestra in the ball-room need not detain, it was suitably enclosed by a screen, such as that described in the decorations of a public hall. We have now two apartments to glance into, one the refreshment room, the other the supper room, and the former, in which the tables were laid as buffets, needs but brief mention. Pretty plants of Geonoma gracilis in vases, and finished off with Panicum variegatum, were disposed at intervals upon the tables, and home grown fruit was tastefully dished up with the foliage of an old Barbarossa Vine, glorious in its dying tints. These were the chief features, although an elegant centrepiece on a principal table, composed of Grapes with the wood and foliage attached, cut from the same old Vine, was worthy of notice.

In the supper room a contrast was provided to anything hitherto noticed by the use of one colour only. Candles, candle-shades, cut flowers, were all in harmony, yellow being the colour. This, of course, had been one of the arrangements made in the *pourparlers* 'twixt mistress and man, and the time and season allowed for a quantity of the common Daffodils being forced for the occasion. As centrepieces on the chief tables, and generously distributed in small vases with an ample supply of their own foliage, a bright, fresh, and pretty effect resulted, whilst the mirrors of a large overmantel were lightly and gracefully adorned with long pendent strings of Smilax. In the peaceful retreat of a conservatory near at hand, which had for the nonce been deprived of most of its larger plants, our decorating hand had been chiefly employed as an illuminating one; the remaining plants had been temporarily grouped to afford as much clear space as possible. Taken as a whole, nothing could have been better done, and the infinite variety and good taste in evidence left nothing to be desired.—DECORA.

(To be continued.)

WALL TREES AGAIN.

A SEARCH FOR GOOD SAMPLES.

THE self-complacent, semi-caustic, tone which "H. D." seems fit to adopt, and his fruitless, fishy superfluities on page 334, may exhibit a certain amount of controversial cleverness, and thus, perhaps, serve their purpose, but yet he seems to shudder at, and would teach a lesson on, the avoidance of "bad form!" A youthful gardener who poses as an Alexander of old and conqueror of all, crying for more victims—for "Traveller" and "Invicta," or whoever may have the temerity to come forth to be slain—will find, as he gets older, that this is not the "form" on which he will congratulate himself then, any more than others with matured minds will congratulate him now. It is evident he has not, as he vainly imagined, frightened a "Traveller" away, and even "Invicta" may possibly be heard of again. I, as one who commenced the training of fruit trees fifty years ago, and am training them still, cannot be supposed to know so much about the subject as one whose chief boast, so far, rests on his training (and what a confession it is) "Morello Cherries!"—planted and formed by somebody else. A great feat surely, is this, and even such as a garden boy of the olden time, if he were a little extra "pert,' might glory in.

But justice must be done even to one who has learned so much more in a short career than others have in a long one; for this short service man tells us that the training of some other trees, not named, stand as "monuments" of his skill. We hear something from time to time of the self-assertiveness, not to say vanity, of the "new woman," but the question is now opened whether new mannism is not the greater phenomenon of these modern days.

"Traveller," I had thought, was a little too severe in his pointed reference to "mutual admiration associations." That they exist is well known, but it had not occurred to me that there were many of them in the community of gardeners. But "H. D." has forced to the front the suspicion that there may possibly be even self-admiration societies, each composed of one member.

Not content with indulging in up-to-date cynicisms in one article, and feeling safety, probably, in the senility of an "old" gardener, the member of one of these societies gets on his bike, and on another page tells us he went in search of evidence in support of his contention of the present superiority of wall trees over those of the past. A society on a bike fishing for creditable wall trees is not a common occurrence. But why the necessity for this search? Were there no well-trained fruitful trees at home? If there were, why the "risky undertaking?" One thing seems clear—namely, that Mr. Kean has better trained and more productive trees than have been raised by a whole society. It is a great compliment to him. They are good trees, and possibly the daring biker has proved a little too much. He did not pause to think, in the exuberance of his spirits, that, notwithstanding his discovery, somebody else had been there before him, and is able to say emphatically that those trees do not represent the miserable mongrels that are now so common in gardens. They are among the exceptions which prove the rule of the prevalence of the jumble of crooked and crowded branches on what are called "trained trees" in hundreds of British gardens. Their discoverer (second hand) is compelled to admit he would have to go "a long way before finding their equals." Just so, that is precisely my point. Really good wall trees are, indeed, too few and far between; yet those cited are not above the average of examples which were grown in nearly all gardens during the period when as much thought, care, and skill were devoted to wall trees, root and branch, as are now applied to Chrysanthemums, table decorations, or other work that absorbs so much attention.

Nor is such fancy work as this, however well and creditably done, a valid excuse for the unsatisfactory state of so many garden walls at the present day. It is a mistake to suppose that all experts in one kind of work are either incompetent or negligent in other kinds. First-class Chrysanthemums and wall trees are to be found in gardens where decorations are also conducted on an extensive scale; indeed, there are far more examples of spoiled trees in gardens where Chrysanthemums are grown in third-rate style, and "decorations" are of the most moderate character, than where the exact reverse is the case in respect to the two last named features.

The fact is, if a man has the knowledge and the will to grow and train wall trees well, so that they will be the pride of the garden, he will not rest contented to neglect them, and beyond all question the better they are trained the less time is required to keep them in order. Every man who has had actual experience with both kinds—the straight equi-distant and properly distanced branches, and the crude jumble of shoots laid in on the anyhow plan—of trees which he has had to bring into the most presentable and best-bearing condition knows that the facts are as stated, and whoever disputes them does so either through perversity of mind at the moment or through the misfortune of not having been properly trained himself in the work in question.

It is in all respects as easy to have the branches of fruit trees straight, as it is to have the rods of Vines free from awkward twists and turns this way and that, with the terminals pointing anywhere; and if there are ten of these well guided Vine rods at the proper distances, instead of twenty bent and huddled in anyhow—obviously the ten not only require about half the time spending on them that the twenty do, but the lesser number bear the better crops. It is precisely the same with well-managed wall trees, simply because there cannot be any other result; and if the trees do not develop the best of blossom buds on the best of wood, that of itself is evidence of faulty management of branches or roots, or both. It is generally both; but this is not the fault of the managers, say the excusers of those who fail, but of the "decorations," or whatever may come in handy for the purpose.

The parrot cry of well-trained trees being the most costly to manage has gone on long enough. The idea is fallacious. It were as reasonable to say that more time is required to draw a straight drill than a crooked one. It may be to a novice or a bungler, but every good workman would laugh to scorn the very absurd proposition.

The object of not a few modern growers of fruit seems to be to rush up the branches to the top of walls and trellises in the shortest possible time, and they may gain in the fruit supply during the first year or two. It may even pay them to do this with Peaches, Pears, or Vines, and to uproot and replant every few years; but that is not the way to furnish garden walls as they used to be, and ought to be, furnished, for affording, not pleasure only to the trainer, but satisfactory yields of fruit over a long series of years.

Mr. Williams' Pears, above alluded to, were *not* "run up" in the rampant style with strong central branches reaching the top of the wall in "no time," and the lower ones dwindling away, leaving blanks to be filled up by Tomatoes, and calling it "making the most of the space." This may delude the frisky colts, and perhaps their young masters, but not the old "hunters" in gardening.

Having now stated facts which cannot be overturned by reformers and discoverers, however young they may be, and refined their taste, however great their self-sufficiency, or glib their pens, I retire and leave this particular one "H. D." to combat, as he longs to do, foemen more worthy of his steel, in "Traveller," "Invicta," or whoever may dare to meet him. It would, if they are also young, be a greater honour to vanquish them than the tottering rheumaticky old gardener who commenced work in the forties, and is shambling along yet, as well as he may, after his little "run."—MELTON.

TRAINING FRUIT TREES.

ON page 310 "S. B. O." has contributed some very seasonable and sensible remarks on the above subject. He does not record his vote in favour of my previous arguments; but that is a small matter. We want to arrive at the truth, even though the pet theories of some are roughly treated during the process. "S. B. O." is, however, labouring under two wrong impressions, which I think I can prove to be such.

In the first place, he does not think that increased floral decorations can have led to decadence in the training of fruit trees because the men entrusted with decorative work do not attend to the training of trees. That is just the point. At one time, in both large and small establishments, the young men in the houses used to turn out *en masse* during the winter time to prune and nail in fruit trees; now, in consequence of the time they are obliged to spend in floral arrangements at the mansion, they have a hard struggle to scramble through the work of the glass department. There is no time while daylight lasts for them to attend to outdoor trees.

In his concluding paragraph your correspondent asserts that good fruit is as much admired as any floral arrangement on the dinner table. "S. B. O." is evidently not up to date in this matter, for although—from a gardener's point of view—I much regret it, yet it is nevertheless a fact that in the "highest circles" fruit is seldom—in many cases, never—placed upon the table. The only opportunity guests have of admiring it is when it is handed round.—H. D.

PRIZES FOR WILD FLOWERS.

I THINK it is an important question, and one which demands the serious attention of all societies, as to whether prizes for wild flowers should be continued at shows. I have heard several botanists say these prizes do a great deal more harm than good. If prizes were given for botanical specimens properly named I could see some object in the prizes being offered. It is certain that wild flowers are getting more rare every year.—A SECRETARY.

[It is not from any fear of children who compete for the prizes offered for bouquets and collections of wild flowers at summer shows exterminating the wildings by cutting them that we object to the competitions which generally prevail. They do not take the roots. We object to the system in vogue because it teaches nothing, not even good taste in arranging flowers. The huge, closely packed bundles for which prizes are awarded are nothing less than floral monstrosities; and the thoughtless manner in which prizes are given for so many bundles, leads children to think the more flowers they can gather and pack together the better.

We have seen pleasing exhibitions of wild flowers of twelve distinct kinds, with names attached, one kind only in a bunch, and the bunches not too large for wineglasses if these were deep enough for holding them. We have also seen classes for the most tastefully made bouquets of wild flowers and Grasses, to be loosely disposed, not closely packed, and the bunches not more than 6 inches across, result in creditable competition. The gathering of wild flowers for showing on those lines becomes an educational exercise, and would be unlikely to result in their extermination.

Danger in that direction lies not in the plucking of stems of attractive spikes by children, but in the digging up of roots by searchers for and collectors of rare kinds. These "collectors," as was said not long ago in one of the daily papers, are apt to become deadly foes of the true lover of Nature, and an incident was cited as an example. One of these searchers, as likely as not wearing spectacles, was taken to see a solitary specimen of an uncommon plant growing in a meadow. He regarded it for a moment to make sure of its identity, then said, "I congratulate you, sir, on having such an interesting species in your district," and forthwith went down on his knees and—dug it up. Those kind of individuals are the real Vandals.

The present system of exhibiting wild flowers, and granting prizes for them, is in our opinion indefensible, but to afford the young in rural districts no inducements for studying the flowers of the field and the wayside, or for arranging them in a pleasing manner, would seem to be going to the other extreme. If judges or others interested in the subject have any proposals for amending the stereotyped bundling system they will, no doubt, be welcome to other secretaries of shows besides our correspondent.]

ROSE MAMAN COCHET.

HAVE any of your readers noticed a curious disease on the leaves of this Rose? A friend found it on his plants and asked me to examine mine, when I discovered it on all my plants. It seems peculiar (at least, in my friend's garden and my own) to Maman Cochet, and under the microscope looks like a sort of crystallised salt. Specimen enclosed.—J. T. STRANGE, *Aldermaston*.

[On close examination the white matter on the upper surface of the leaflets was found to be mainly oxalate of lime and potassium, confined to that side. This, for some reason, has passed from the organic into the mineral form, probably from an excess of acid in presence of lime with a deficiency of potash for its utilisation. The appearance is common on the leaves of the Dog Rose in some seasons, especially on calcareous soils. The lower side of the leaflets is quite green, the upper side discoloured and covered with salt-like minute dots and splashes. Some call it "silver leaf," but this is a spring and early summer, not a late summer affection. A supply of potash and iron gives good results, of course, along with phosphate. We used three parts dissolved bones, two parts muriate of potash, one part sulphate of magnesia, and half a part sulphate of iron for a similar affection, applying 4 ozs. of the mixture per square yard in the autumn, pointing it in lightly.]

IS GARDENING DECAYING?

"TRAVELLER" has re-appeared upon the scene in the "nick" of time, for while one writer was wondering what had become of him he seems to have been penning his jubilant note. He writes in a style which many might consider carried conviction with it, but I am not sure that he has really convinced himself of the soundness of his despondent theories; they seem to me to be advanced as so much good-humoured "chaff." If "the men who are heard at the shows loudly glorifying their productions" are not taking up the matter in the way "Traveller" would like, it is not because their side of the case is the weaker one, but because they think they are doing something more to their advantage.

Is gardening decaying? Certainly not; it is only changing in form, as it has ever been changing. It is also greatly expanding in various directions. Grand plants in small pots are now grown by the thousands where formerly they were only produced by units. For a very moderate outlay, the dwellers in our large towns can now purchase such splendidly grown plants as only came within the reach of the affluent many years ago. A keen love of gardening is abroad among the masses; it is in innumerable instances making them contented and happy, it is bringing brightness into countless homes, where nothing but drudgery and want prevailed in the "good old times."

Can a "Traveller" point to any period in his long and, I think, useful career, during which Apples, Pears, and Peaches were better grown than they are to-day? Can he point to a time when perfectly coloured handsome bunches of Grapes were more numerous than they have been during the last ten years? Old exhibitors know well enough that the quality of the Grapes which used to win them first prizes would have to be considerably improved to win a third prize now at many provincial shows. Do not be too jubilant, "Traveller;" your "shell" has alarmed no one, and the only damage it seems to have done is to have stirred up the dust—which you show will not "help us to see daylight."

I see that special objection is taken to the remarks of one writer, who advances the increase of decorative work as the reason why in some places the fruit trees do not get the attention they used to. I can fully endorse that writer's remarks, for it once fell to my lot to manage a garden in which decorations on a gigantic scale were continually being carried out, and this had to be accomplished with only a slight temporary addition to the staff employed in the "old earl's time," when very little decoration was wanted. Can any reasonable man call this a "lame excuse" for the neglect of some other department of gardening? It matters not how much "delicate furnishing" there is to be done so long as the staff employed is proportionate to the work required. The order of the day in many establishments has been to reduce the labour and increase the ornamental and unproductive part of gardens. This has been the cause of the serious deterioration of real gardening in many places.

The truth is that gardeners do not now grow plants and crops for their own hobbies; they are obliged to cultivate such things as their employers require. Gigantic Heaths and stove plants used to be popular, few owners of gardens care for them now, as they cannot turn them to account for house decorations; they have, therefore, in obedience to that great natural law, "the survival of the fittest," to a great extent dropped out of cultivation. Orchids, on account of their rich beauty, are in many places the rage. Their culture is so thoroughly understood, that it is now as common to see splendidly grown plants as formerly to meet with miserable starvelings. Talk about the decadence of gardening, let any employer express the wish to have certain plants and crops grown in a superior manner, and he will find plenty of gardeners ready and able to carry out his wishes if the requisite means are forthcoming.

The splendid progress made in the culture of that lovely flower called rightly the "Queen of Autumn" is evidently a thorn in the flesh of "Traveller." The advance has been made by leaps and bounds, and Chrysanthemum men are in consequence justly proud of their achievements. If there is one class of gardeners who love their work more than another, it is those who take special interest in Chrysanthemums. They will work any amount of extra hours to give their plants the attention they require; in fact, the special attention given to Chrysanthemums is invariably done after the ordinary hours of labour. Certainly I have not yet seen a good gardener neglect other things for them; on the contrary, it is usual to find that where these favoured flowers are well grown, other plants and crops are well done too.

The chilly days of autumn are upon us, and we want something to infuse a little brightness into our daily lives. It is to be hoped, therefore, that "Traveller" will carry out the Editorial suggestion, and visit the November show of the National Chrysanthemum Society; he will there find the specialists engaged in "mutual admiration" rather than in "squabbling." If he will quietly fringe the circle, and then disclose his identity, I fancy he will meet with a warm reception, one not the less sincere because of his crushing blows.—CHRYSANTHEMUM LOVER.

RANUNCULUS AMPLEXICAULIS.

THIS is a very distinct and handsome plant, usually growing about 12 inches high. The leaves are greyish. The flowers are pure white, in some varieties stained with yellow towards the base. It flowers in April and May, and is a native of the Alps of Europe. The woodcut represents a spray from a plant of this species whose large white flowers are very freely produced, and are very attractive. They are also useful for cutting, as they remain in good condition for a much longer period than the majority of single-flowered Ranunculuses, and wherever simple flowers are appreciated the plant should be grown. It is a border plant of very easy culture, thriving well without attention in ordinary garden soil.

HYDRANGEA CULTURE.

IT would be difficult to name any hardy flowering shrubs more suitable for growing in pots for the many forms of decoration for which flowering plants are required than Hydrangeas. They are comparatively easy to grow, and amateurs with a frame or a few hand-lights and a greenhouse may grow them to the same excellence as the professional gardener with more glass structures and greater accommodation. The latter by a judicious system of treatment and forcing, can produce them in succession over a period of several months, but with the former this can only be accomplished in a very small degree, and the amateur can succeed in bringing two or three batches into flower at different times so as to form a succession.

In order to grow Hydrangeas well in small pots it is necessary to have a few good plants of two or three varieties placed out in fertile garden soil in an open sunny position. This is the best system for the amateur, while those who want to force the plants into flower early in the season should keep a few stock plants in pots. These should have the protection of a cold frame until the weather is sufficiently genial to turn them outside without injury to the foliage made; in fact, prior to turning them out they must be carefully hardened so that they are not checked in their growth. Those grown in pots will yield cuttings in suitable condition for rooting before those are sufficiently ripe on plants growing outside, which can be rooted a few weeks later, and thus form capital successions to those taken from plants in pots.

PROPAGATION.

Cuttings from plants that have been grown in pots should be taken without further delay, for growth has ceased and flower buds are formed. If left too long the shoots become woody and too hard to root freely; in fact, they are a long time rooting in that condition, and many may fail to form roots; but when taken as soon as growth ceases and the formation of the flower buds has commenced, the wood is moderately soft and will root quickly and freely. The cuttings should be 2 or 3 inches in length, and cut clean below a pair of leaves with a sharp knife. The two lower leaves need not be removed, but inserted with the cuttings into the soil. The cuttings root equally as well without the leaves as when retained, but they assist in the development of the flower bud already formed. They should be inserted into 2-inch pots in a compost of good loam and a little sand; a little of the latter may be used for the base of the cuttings to rest upon. After insertion a good watering should be given, and the cuttings placed under hand-lights where a temperature of 60° to 70° is maintained. The hand-lights should be made air-tight and kept perfectly close and shaded from the sun until the cuttings are rooted. It is possible to root the cuttings by this method without exciting them into fresh growth. I have tried various ways of rooting them without pushing them into growth, and the system devised has answered as well as any. If the plants are left in heat after they are rooted they frequently start into growth, but this must be avoided by gradually hardening them to the conditions of cold frame. If this is carefully done, and the young plants are given cool treatment as early as possible after they are rooted, they will not fail to perfect and ripen their buds and stems.

PREPARING FOR FORCING.

The young plants when rooted should be grown in a cool place until the approach of frost, when they can be placed in a frame where frost can be excluded. Earliest plants usually occupy a position in a vinery at rest until the commencement of the year, the later plants being kept in cold frames, and protected with mats if occasion require. These plants are hardy enough and will bear frost, but it does them no good, and therefore should be avoided, for it frequently ends in the destruction of their foliage, which I endeavour to preserve.

Another, and a very reliable system of preparation for early forcing, is accomplished by rooting a good number of cuttings in the spring. The cuttings are perfectly soft, and thinned out from the plants in cold frames after they have made sufficient growth for the purpose, that are intended to supply cuttings in late summer. These are rooted in brisk heat, either in the propagating frame or under hand-lights in a warm house,

FIG. 53.—RANUNCULUS AMPLEXICAULIS.

Each cutting is inserted singly in a small pot, and directly they are rooted they are gradually hardened and placed in cold frames, giving them abundance of air until the weather is sufficiently genial for turning them outside. When the small pots are well crammed with roots, which is generally the case by the time the plants are placed outside, they are transferred into others 4 inches in diameter. The soil, which consists of good fibrous loam, sand, and one-seventh of decayed manure, is pressed as firmly as possible into the pots to insure a dwarf sturdy growth.

After potting, the plants are arranged in an open sunny position. Sometimes they are plunged to save labour in watering, but when this is done care is taken not to allow them to root outside their pots. The plants remain in this position until autumn, when they are placed under cover and treated the same as those rooted at this season of the year. These are only potted once during the season, and the result is plants with large foliage and stout thick stems not more than 6 inches high by the time they are housed. Plants prepared by this method are certain to produce early in the season enormous heads of their beautiful flowers. —B. T.

H. PANICULATA GRANDIFLORA.

IS this grand hardy shrub as extensively grown as it ought to be? It is certainly one of the most valuable additions that have been made to our shrubberies of recent years. Its huge heads of flowers are at the present time (September) most imposing, and arrest the attention of all who see them. Its hardiness, too, has been proved for several winters, which it has passed through unscathed in the southern counties; but in a garden in a cold district in the north it was injured, and as it looked

rather unsightly, was cut down by the owner under the impression that he would secure stronger growth from the base. He has secured such growth, and also, what he did not expect, grander heads than the plant ever produced before. This he regards as a lesson, and he is so convinced of its value that he intends cutting the plant down again, as he is certain this is the best method of managing it, or, in other words, growing it as an herbaceous plant.

There are now many plants of this distinct and fine Hydrangea grown in different counties, and it would be well if some of them could be cut down by way of experiment. There can be little to lose and may be much to gain, for certainly the heads of flowers alluded to are extraordinarily fine. Grown on the cutting-down system, and in richer soil than is usually found in shrubbery borders, it is fair to suppose that the heads would be still larger, and large beds of this plant with a background of shrubs would form a striking feature at this period of the year in any garden.

The plant is readily propagated by cuttings of half-ripened wood taken from the plant after flowering, and inserted under hand-lights placed on the shady side of a wall or hedge. Younger growths can also be employed for cuttings, and these will root quickly if inserted either singly in pots or a number together (the first method being preferable), and placed under hand-lights or in a close frame until they are rooted. If propagated in heat, give a good watering after insertion, and keep the cuttings close and well shaded afterwards until they are rooted; cuttings possessing two joints—one to be in the ground and the other just above the soil—will suffice.

The chief secret of flowering it well in a pot is the thorough maturation of the wood. After flowering, the plant should be hardened and placed outside, then in autumn or early spring should be closely pruned back; if one pair of eyes is left on the new wood that will be ample.—R.

TRAVELLER'S TALES.

EVER and anon some simple subject brings in its train a host of arguments; good enough in one way, valuable in another, provided that the chief object is kept well in view and no descent is made into petty personalities. This in allusion to the controversy anent the decadence of wall tree culture in particular, and gardening in general. To the latter phase I have ventured to repeat the query which is appended to the heading of the article on page 308. From the intense interest that "Traveller" presumably takes in the matter, one must try to suppose that his primary object is the welfare of the cause—of gardening and of gardeners; hence we will endeavour, like "The Autocrat of the Breakfast Table," "to love him none the less for anything he has told us."

Whether his mode of attack is the best means to that end is another matter, and one open to question. "Methinks the gentleman doth protest too much." What would he have when, in flinging down the gauntlet from "the rock bed of unassailed accuracy?" Has he not judged—prejudged the whole community, and found them wanting? If this is admitted, *cui bono?*

I am fully aware that "Traveller's" indictment offers temptation to engage with him in wordy warfare, and that he has baited his hook with such choice morsels that some at least may bite to their cost, for I doubt not but he will land his prey somewhere upon that solitary "rock." It scarcely appears possible to face this question, "Is gardening decaying?" without drifting into some of those side issues the travelled one apparently dreads, because to get at the truth analysis is necessary, and to analyse brings us to details. However, 'tis as well sometimes to see ourselves as others see us, but in this case what a spectacle 'tis, surely!

Should "Traveller" return to his tale of woe, one hopes he may be able to point the way to better things. Who among the whole "fraternity," young or old, is not willing to learn, and is learning daily by experience; and seeking, too, the light of knowledge from others who may have it to impart? So far our "trenchant 'Traveller,' who has suddenly appeared to sparkle over a degenerate world," dazzles but to "lead astray;" and at present appears to have enveloped himself in conviction-proof armour, forged upon the anvil of imagination.—VESPA.

INFLUENCE OF FORESTS ON FARMING.—In a recent article, in which reference is made to the influence of forests on farming, the "Boston Transcript" says that soil, moisture, and heat are the three servants of the farmer. The soil he can regulate by culture and fertilisers, but moisture and heat seem out of his control. These are not out of the control of the woods, however, and the farmer by judicious management of his tree-lot can bend them to his ends. He can prevent or temper the effects of atmospheric changes, he can avoid the disasters of excessive rainfall, and he can manage the water to his own benefit. It is explained that the snows of winter are conserved by the shade of the trees, and do not rush away at the earliest moment of sunshine to swell the spring freshets; the loose soil of the woods, not hardened by the impact of the raindrops, holds the water and lets it percolate to the springs below; the tree-covered area catches more of the snow, and the shaded surface does not give up its moisture in evaporation; there is more water there, and means are present to prevent its waste, so that the subsoil distribution is better and stronger, and it is the subsoil waters that are the farmer's standby in ease of need.—("Garden and Forest.")

FOREIGN CHRYSANTHEMUM SHOWS.

THE interest in the Chrysanthemum on the Continent is shown by a list of exhibitions to be held, which appears in the current number of "Le Chrysanthème." Those whose dates are already fixed are given as follows:—In France, 4th November, Bourges; 4th to 9th November, Montpellier; 6th to 10th November, Orleans; 10th to 14th November, Paris; 13th to 15th November, Havre; 17th to 21st November, Dijon. In Belgium, 6th to 8th November, Brussels; 14th and 15th November, Namur. In Switzerland, 17th November, Geneva. In Germany, 13th to 16th November, Carlsruhe; 14th to 16th November, Munich. Other shows, the dates of which are not fixed, will be held at Chambéry, Frankfort-on-the-Main, and Strasbourg.—P.

WELSH CHRYSANTHEMUMS.

I READ with interest your weekly notes on Chrysanthemums, and, living so far from any grower, I should be very glad of your opinion of the enclosed leaves in comparison with those of growers in more favoured situations. I have not had the pleasure of seeing any other plants this year. With regard to the variety Baron Ad. Rothschild, which is mentioned by your Irish correspondent, it does not lose its bottom leaves here any more than do the other varieties, but it goes spotted all up the plant, as you will notice by the enclosed. During the six years I have been here I have never seen an earwig on any of the plants, and mildew is almost at vanishing point every season. The Japanese this year are much dwarfer on the whole, while some of the incurved are a trifle taller.—WM. MABBOTT, *Dowlais.*

[Our correspondent has sent us fifty-four leaves of distinct varieties, and as each one is named their foliage characteristics can be seen at a glance. In texture the leaves are perfect, while the substance is no less inferior, as may be judged from the fact that five leaves weigh 2¼ ozs., the heaviest one turning the scale at just over half an ounce. They are most creditable, and we shall be pleased if Mr. Mabbott will send us half a dozen blooms to see if they are commensurate with the exceptional excellence of the leafage.]

PREVENTION OF THE CHRYSANTHEMUM LEAF MINER.

IT is now nearly a year since I sent you some leaves of Chrysanthemums and Cinerarias very badly infested with the Chrysanthemum leaf-mining maggot (Tryptera Artimisæ) and asked your advice for preventing the same this season. Amongst the preventives you gave me was one I determined to try—namely, putting pieces of cardboard coated with Myocum gum in split sticks, and place among the plants for the purpose of catching the fly. I am glad to testify to the excellence of this plan. Our plants are mostly grown for large blooms, and in their summer quarters were trained to a wire trellis. On the wires I hung the gummed cardboard the second week in June, and I have kept them well coated with gum until we housed the plants this week. We succeeded in catching many flies, and the very few maggots that did get into the leaves were soon settled with the thumb and finger. Other collections in the neighbourhood are, as usual, literally infested with them. I send you a few leaves for your inspection, picked at random from the plants, which are (in spite of the very wet season we have had) fairly well ripened. I advise all growers who are troubled with the leaf miner to try the plan above mentioned. I also adopted it with the Cinerarias, and up to the present there has not been a single maggot in the leaves.—J. C., *Lancashire.*

[The leaves sent were clean, fresh, and with no sign of insect or other pests on them.]

CHRYSANTHEMUMS AT OVERCLIFFE, GRAVESEND.

ONE of the most promising collections of Chrysanthemums I have seen in the neighbourhood of Gravesend is under the management of a very promising and industrious young gardener—namely, Mr. H. Carpenter, gardener to Captain Marsden, Overcliffe. His plants are well grown, strong, and healthy examples, promising to produce exceptionally good blooms. They are of medium height in every case, as the whole of the collection was cut down in May and early June. Fairly dwarf plants are, in his case, almost a necessity, owing to the inconvenience of housing very tall plants.

Having been grown throughout the summer in an open, sunny position, without any shade for the greater part of the day, has undoubtedly proved of great assistance in the building up of the stout growths, with their bold, leathery, deep green leaves, furnishing the plants well down to the pots. The wood is becoming thoroughly ripened, the best buds have been secured, whether crown or terminal. In most cases the crown bud, or the first bud showing after the cutting down, has been selected.

Mr. Carpenter confines his selection of varieties chiefly to the Japanese section. About 100 plants is the number grown, all varieties of proved excellence. Those varieties having the most forward buds included Mutual Friend, Mons. Freeman, W. Seward, Miss Watson, Mrs. C. H. Payne, Etoile de Lyon, Duke of York, W. H. Myers, Beauty of Exmouth, Lady Saunders, W. H. Lincoln, Henri Jacotot Fils (this variety and

Mr. H. Broomhead had the lightest-coloured foliage in the collection, and the latter will be rather late in blooming), Van den Heede, Chas. Davis, E. Molyneux, J. Shrimpton, Viviand Morel, and President Borel. —E. D. S.

The Chrysanthemum Era.

Has "Traveller" (page 308) had a bad journey? Can it be that because modern gardeners did not respond liberally to his blandishments he penned that finely rounded sentence for the information of his "House":—"They are imbued with one impression, that the universe was designed specially for Chrysanthemum growers, and will revolve round them to the end of time." A fine burst of eloquence, truly. So well rounded, indeed, as to have no point.

This puerile tilting at the Chrysanthemum has been indulged in ever since the modern gardener discovered that by its aid the conservatory is the brightest at the season of the year when it was the dullest and dreariest in the good old times. The modern gardener is enabled, also, to keep the supply of cut flowers to the highest pitch of abundance, and this notwithstanding the fact that the demand now, at the lowest estimate, is in the proportion of twenty-five to one of that in former times. There are very few nurseries where the Chrysanthemum is not largely grown and its merits duly appreciated. "Traveller's" condemnation of it can only be ascribed to the fact that in the gardener's hand a sufficient home stock is raised without troubling the order seeker. In that case the sensible course would be a change in methods, for the Chrysanthemum is gathering strength as it goes along in its brilliant career.

"Traveller's" attempt to attribute Chrysanthemum culture as a cause of his alleged decadence (forsooth!) of gardening is a trifle amusing. He does not seem to know that successful Chrysanthemum culture necessitates the highest cultural knowledge. The gardener who succeeds in producing high-class flowers need have no fear of his abilities failing him in dealing with other subjects. A single day's drive to the different growers in well-known Chrysanthemum centres similar to Hessle or Liverpool will easily convince all who know good work when they see it, that the most successful Chrysanthemum growers pay no less attention to all the other important branches of gardening which they practise with equal success. These men will show as perfectly finished crops of Muscat and late Grapes, as sensibly managed Peach and other fruit trees, as good collections of decorative plants, and as useful supplies of vegetables, as any coming within a similar area to which "Traveller" may be able to refer to in times previous to the advent of his special *bête noir*, the Chrysanthemum.

Perhaps it would be well to remind this "new star" that a declaration of war on his part involves the possibility of an invasion of his own territories. Like himself, I can remember the time when there were fewer "Travellers" than there are at present, and some of them may be unable to get the usual "line." In spite of all the advantages to be derived from and by these "gentlemen of the road," we draw the line at lectures on our incompetence, and beg to remind "Traveller" that times, tastes, and requirements have changed in a wide degree from those of the past; also that he will not find himself equal to stopping the clock, nor even set the hands back a minute, as it marks time in the progress of gardening, including Chrysanthemums.—Cedo Nulli.

WATERPROOF AQUATIC PLANTS.

This may perhaps seem an anomalous title, for few people comparatively are aware that the numerous forms of vegetation seen floating on the surface of lakes, rivers, and streams, or whose green form is visible below the water, are clothed in waterproof garments. This, though, is certainly the case, and it is altogether a great mistake to suppose that floating or even submerged plants are soaking with water. The surfaces of aqueous plants are covered with a thin cuticle or film of the nature of a super-glaucous bloom over the ordinary epidermis or porous skin, which effectually prevents them absorbing the wet, acting, in fact, as a perfect waterproof, so that the watery element they inhabit does not enter their tissues save and only when required by their organism, and in accordance with the same laws which regulate the absorption of water by land plants.

Any persons desirous of verifying this interesting fact, can do so by examining the water plants in their neighbourhood. Take, for instance, the Water Lily; they will find the upper surface of the leaves is covered with this cuticle or varnish, and that water poured thereon collects into silvery globules, and rolls off without actually wetting them. The existence of this cuticle on the epidermis of water plants, as a perfectly distinct slight membrane, was first discovered by the eminent botanist, De Saussure, nearly a century and a half ago. Subsequently this discovery was confirmed by Hedgwiz in 1793, and, later on, in 1834, by Brongniart, who alludes to it in his most interesting article on the structure of leaves. The exclusion of superfluous water from the inside of aquatic plants is further promoted by the numerous air cells in their interior, for these are more abundant than in land plants.

This can easily be demonstrated by cutting the stem across of one of the former and examining the section with the aid of a small microscope. It is thought that in certain cases the formation of these air cells is accidental, the result of a slight rupture of the interior tissues; but generally they are due to the ordinary operation of a general law, and they assume in cases a very beautiful appearance. There appear firstly triangular openings between the adjacent polyhedral cellules, these then enlarge at the expense of the area enclosed by their walls until they take the form of a six-rayed star. This is easily seen by taking a section of the pith of a common Rush, which, examined through the microscope, reveals a very beautiful object. It is in this way the large air receptacles in the interior of most water plants are formed.

So much, then, for the anatomy of the subject; as to their physiology, most of us know that the leaves of ordinary plants are a sort of filte through which the impure air is filtered of its carbonic acid and rendered again fit for respiration—that is, aërial leaves remove carbonic acid from the atmosphere. All plants do this, from the forest tree to the smallest blade of grass. Even poisonous species in this respect are public benefactors, transforming the pestilent air into a pure vivifying atmosphere. The same law prevails in aquatic vegetation. All animals which inhabit the waters are ever poisoning the element in which they live with carbonic gas; and all aquatic plants, from their queen, the noble Victoria Regia, floating on the majestic Amazon or in a lake or tank here, down to the smallest and most insignificant weed in a stagnant pool with its scum-like vegetation, are engaged in the grand work of absorbing the carbonic acid, and then oxygenating their native element, thus restoring its pristine purity and rendering it wholesome.

This is especially the function of those plants which grow wholly under water, for it is apparent that a great deal of the oxygen of floating vegetation passes at once into the atmosphere without producing much effect on the water. With submerged plants the case is different. Water always contains a certain amount of carbonic acid in solution, which of course enters the submerged tissues. Under the influence of light this carbonic acid decomposes—the carbon is left in the parts which grow green, and the oxygen is exhaled. This exhalation from the leaves of aquatic plants is beautifully seen in those submerged species cultivated in aquariums in order to preserve the health of the denizen fish. The oxygen collects on the leaves in the form of air bells, and a continuous succession of them may be seen to rise by the observer through the water and burst on arriving at its surface. These keep the water pure, and show that the chemistry of Nature is at work, and the carbon of the carbonic acid is being assimilated by the plants.

It is thus aquatic plants purify the water, removing its objectionable poisonous element. Air in the interior of these plants not only excludes the water, but gives them the buoyancy they require. When, therefore, observing the different forms of aquatic vegetation in the pond, stream, or lake, whether floating or wholly submerged, my readers should bear in mind how wisely and well the organisation of these water plants is constructed, both without and within, so that the water in which they live shall be kept out of them, being admitted only in proportion as necessary to carry on the changes connected with the progress of their existence and development to maturity.—Wm. Norman Brown.

THE YOUNG GARDENERS' DOMAIN.

Schizanthus.

These plants can be thoroughly recommended to anyone requiring an effective display of bloom with little trouble or expenditure. For the conservatory, dwelling house, or greenhouse they are extremely effective. It can also be used for vases and the decoration of the dining-room table with admirable effect. For ordinary purposes we find sowing the seed in 6-inch pots the best method. The seeds should be sown very thinly and covered with fine sand. Germination is rapid, and when large enough the young plants must be thinned, leaving five or six to a pot. Any ordinary soil will suffice to grow them in, although the best results we find are obtained by using two parts of good loam and one of leaf soil, with road grit or sand. Do not fill the pots half full of crocks, one large piece sufficing, over which place a good handful of half-decayed cow or horse manure. The soil should be made moderately firm, leaving ample room for watering, as they require copious supplies when growing, which should be given alternately with some kind of manure water.

Red spiders are very troublesome to Schizanthus in the summer months, and if not destroyed soon spoil the plants; but if grown in partial shade and kept well syringed they are comparatively free from these pests. They can be had in flower nearly the whole year by frequent sowings, but are more serviceable in the spring and autumn, as the flowers last longer then. The tall varieties—viz., pinnatus, p. roseus, p. candidissimus, appear to be the best adapted for pot culture, and are more effective if mixed when sown. Being half-hardy annuals plenty of air should be given on all favourable occasions.—J. L. G.

Asparagus Culture.

Plants belonging to this genus have during late years attracted considerable attention, and this, no doubt, is due to their usefulness. The graceful foliage is admirably adapted for cutting and mixing with flowers in glasses, for making streamers for bouquets, and for laying on the dining table. The dwarf varieties make elegant table plants, being just what is required to relieve such specimens as Crotons and Dracænas of their sometimes too bright appearance when placed on the table. They are very useful for the embellishment of the stove, greenhouse, or conservatory, whilst the tall-growing varieties are useful as climbing plants for covering pillars and bare walls.

Propagation may be effected by the aid of seeds or division of the root. Sow the seeds in January or February in pans of light sandy soil, and cover over with a piece of glass. Remove the glass as soon as the seedlings appear, and when large enough to handle, pot into 60's, using a compost of fibrous loam, peat, and silver sand in equal parts. Place as near the glass as possible in a moist atmosphere, where there is a temperature ranging about 70°. When these pots are full of roots transfer them into 5 or 6-inch, using a compost of two parts fibrous loam,

one part peat broken into lumps, one part sand, charcoal, and potsherds broken small, with an addition of artificial manure, and place back in the same temperature until they are well established, when a cooler temperature will suffice.

Plenty of water must be given them, and they are benefited by occasional waterings with liquid manure. They require shading from the bright sun, also abundant syringings amongst the pots, but only lightly on the foliage. Two good climbing varieties are plumosus and tenuissimus. Deflexus is very useful for hanging baskets, as also is Sprengeri. The growths of the latter when young hold themselves erect, and gradually arch over as they grow older, until they are straight down. It is also the best variety for cutting, as it preserves its vitality a great deal longer than the others. Two good dwarf varieties are plumosus nanus and albanense.

Mealy bug is the worst enemy, and may be removed by occasional dippings in the case of the dwarf varieties, and syringing the tall with a weak paraffin insecticide, as the small pinnules will not stand a strong dose.—ELVEDEN.

CARNATIONS IN BEDS.

CARNATIONS are now recognised by many growers as the most useful plants for either beds or borders, as with a good collection abundance of flowers may be had for a long period. Where cut flowers are in demand Carnations are of great value for either house or table decoration when tastefully arranged with their own grass and made to look as light as possible.

It is advisable where possible to devote a special bed to their culture, as far better results are obtained than when planted in a mixed border. If, however, this system is necessary a good compost ought to be prepared for them. Autumn planting is the best in most cases, as it saves the trouble of wintering in pots, and is undoubtedly advantageous to the plants, which become established and start growing much better than those wintered in pots. The beds may be made large enough for from four to six rows of plants, with a path on each side.

As regards the mixture of soil, no rule can be specially given. The cultivator must examine the natural staple, and should this be of a light sandy nature it will be found suitable after a top-dressing of wood ashes, lime, and soot, which should be thoroughly mixed with the surface soil when dug. If the soil is found to be stiff and clayey apply a top-dressing of sandy loam and lime rubbish in addition to the above. As soon as the layers are sufficiently rooted they may be carefully separated from the old plants, placed in boxes, and be firmly planted in rows 18 inches apart each way. Always keep the beds free from weeds, and apply a mulching of half-decayed manure, which will help to protect the roots in winter and prevent the surface from becoming too dry in the summer.

As soon as the flower buds appear an occasional application of liquid manure and soot water will be found beneficial. The flower stems will also require staking, so as to display the flowers and prevent them getting soiled.—J. F. D.

[By all means send the notes on Carnations in pots, as if thoroughly practical they will be of service to many young growers.]

HARDY FRUIT GARDEN.

Gathering and Storing Fruit.—The gathering of Apples and Pears should be continued as the various varieties become ready. Most of them are sufficiently matured when the pips are of a dark brown or black colour. Any fruits that are not easily detached from the spurs may remain on the trees longer. It is seldom that every fruit on a tree is ready at one time. In gathering avoid bruising the fruits as much as possible. Store in single layers on clean boards or slates in a dark cool room or proper fruit room. Windfalls ought not to be placed with sound fruit, or indeed in the same compartment. Damaged fruits decay quickly, sooner or later emitting odours which may prove inimical to sound fruits, especially those approaching ripeness.

Plums.—The later varieties of dessert Plums may now be gathered, wrapped in tissue paper, and stored in a dry place where they will keep for some time. The varieties thus treated include Coe's Golden Drop, Ickworth Impératrice, Blue Impératrice, and Reine Claude de Bavay.

Filberts and Cob Nuts.—Nuts must be gathered in the driest weather, preferably after several days of wind and sun, so that the husks may be dry. After gathering lay out the nuts thinly in an airy structure to dry out every particle of moisture, and then store in jars, pressing the nuts closely together, excluding air with tightly fitting lids.

Strawberries.—Strawberries may still be planted, but the plants inserted ought to be those which have been well prepared, either in small nursery beds, or allowed sufficient space to develop good crowns and abundant roots between the rows of established plants. Plenty of strong plants are now obtainable where a liberal clearance of superfluous runners and the rooting out of weeds were carried out before any were crowded. Only the strongest plants should be employed now for permanent planting. The smallest may be inserted 6 inches apart in beds for the winter, planting finally in spring. Well cultivated and liberally manured ground should be selected for Strawberries.

Trimming Old Beds.—From force of circumstances or, it may be, neglect, Strawberry beds are occasionally left until this late period before runners are cut away and weeds removed. From such beds, owing to the rank growth, there will be few young plants of any value. Therefore, with a sharp knife, sever all attachment with the old plants. There is then a clear course for hoeing up the weeds and runners. This is a rough-and-ready method, applicable to the special conditions, but inferior to an earlier clearance of superfluous growths between the rows.

Mulching.—A liberal dressing of well decayed manure spread between the plants will prove of substantial service in affording nutriment for the roots, and assisting the plumping up of bold crowns for the next season's crop. It is not desirable to mulch young plants at this season, inasmuch as they are able to find adequate support in the soil.

Young Plantations.—A final clearance of runners may be given to recently planted beds, after that a Dutch hoeing will be beneficial.

Apricots, Peaches, Nectarines.—In order that the wood of these choice stone fruit trees may attain to a well ripened condition, the whole of the bearing wood which has produced the fruit this season ought to be carefully pruned out. Sun and air are then permitted to reach the growths from their point of origination to their extremities. Weakly or worn-out branches may also be removed. If at any point the retained or succession shoots appear to be crowded, and room cannot be found for the whole of them, cut out the ill-placed, crooked, or otherwise irregular growths. It is not necessary to prune now in a full and complete manner, but only so far as to admit sun and air freely. Branches and shoots crowded in one part and not in another may be temporarily regulated, finally overhauling and pruning away all that is necessary previous to the late winter tying-in or nailing.

Thinning out Wall Tree Branches.—The mistake is frequently made of allowing the main branches of wall trees to remain arranged too closely together. Now that the foliage is present is an excellent opportunity to rectify such an error. It may, in the case of horizontally trained trees, be necessary to remove every other branch, even at the risk of leaving the remainder rather wider apart than is essential. A foot distance asunder for the branches is suitable, and few trees do well and bear freely when the branches are at a less distance. Fan-trained trees, too, are frequently crowded. Some of the weakest and partially exhausted branches may, in their case, be removed, regulating the remaining at proper distances.

FRUIT FORCING.

Cherry House.—A structure devoted to Cherries is not common, but no fruit proves more useful for dessert in the spring. The house for Cherries should be light, well ventilated top and bottom, and efficiently heated; a lean-to or three-quarter span facing south for early forcing, or a span roof with the ends north and south for affording fruit in May and June. The trees may be trained to a trellis fixed 12 inches from the glass, border inside, and not made all at once. A 4 to 6 feet width of border, according to the size of the trees, is sufficient to commence with, draining it with rubble 9 inches deep, and on that a 3 inch thickness of old mortar rubbish. From 20 to 24 inches depth of soil is ample, but deeper at first to allow for settling. Good turfy loam, preferably rather strong lime rubbish from an old building one-fifth, and a sixth of road scrapings, form a suitable compost. The trees may be planted as soon as the leaves fall. Those trained to walls four to six years, and in a fruitful healthy state, also recently lifted so as bear removal safely and without check, are the most suitable. The border being put together compactly and the trees firmly planted, following with a good watering, and mulching with a little stable manure, will give a fair crop the first season. The most suitable varieties are Early Rivers, Governor Wood, and Black Tartarian. The roof-lights should be taken off and remain so till the beginning of next year.

Cherries are readily forced in pots, and give a long succession of fruit. The house may be heated for forcing, or a cool one, well ventilated, and as the trees ripen their crops, they can be placed outdoors. The trees should be secured at once, and if they require a shift into larger pots, attend to it without delay, disentangling the roots at the sides of the ball, and cutting back any straggling and thick ones. Provide good drainage, and ram the soil firmly. Trees that are in as large pots as desired need only have the drainage rectified and the surface dressed; or the drainage may be cleared away, a few inches from the base removed, the roots shortened back, and fresh soil given as advised for borders, with a fifth of well-decayed manure, removing also the loose surface material and supplying rich compost. For forcing in pots, Early Rivers, Belle d'Orleans, Empress Eugénie, Governor Wood, Black Tartarian, Black Eagle, Elton, and Mammoth are good. For a cool house, Belle d'Orleans, Early Rivers, Early Red Bigarreau, Empress Eugénie, Bigarreau de Schreken, Governor Wood, May Duke, Black Eagle, Archduke, Nouvelle Royale, Florence, and Late Duke. Those are compact growers, and the following large growers: Early Jaboulay, Black Tartarian, Bohemian Black Bigarreau, Elton, Reine Hortense, Bigarreau, Bigarreau de Mezel, Mammoth, Duchesse de Palluau, Bigarreau Napoleon, Belle Magnifique, and Tradescant's Heart.

Cucumbers.—The latest plants which are to afford a supply of fruit about the new year should be placed out on ridges or hillocks, training with a single stem to the trellis, up which they may be allowed to advance two-thirds, when pinch off the lead. Those not having the convenience of a Cucumber house may secure fair supplies of winter fruit by growing the plants in pots or boxes, training the growths near the glass over the paths in stoves, fruiting Pine houses, or other well-heated structures.

Plants in bearing should not be overcropped, or the fruit allowed to remain longer than it is fit to cut, removing all deformed fruit in a young state. Maintain a night temperature of 70°, 5° less in the morning, 75° by day, up to 85° or 90° with sun, admitting a little air at the top of the house at every favourable opportunity, and keeping the evaporation troughs eharged with liquid manure, floors damped with water about 8 A.M. and 4 P.M., dispensing with the syringe over the plants. Reduee the supply of water at roots, but not so much so as to cause flagging. A little sweetened manure sprinkled on the beds oeeasionally will benefit the plants through the waterings, washing their elements into the soil and the ammonia given off, but this must not be excessive, or the foliage will be injured. Keep the foliage thin and the glass elean, so as to seeure thoroughly solidified growths.

Melons.—The end of the Melon season, as regards those grown in frames and pits heated with fermenting materials, is approaching, though fairly good fruit may be had up to November, especially of kinds that will keep some time. Any fruits approaehing ripeness should be eut with a good portion of stem, and placed in a house with a gentle warmth, where they will ripen, and be weleome additions to the dessert.

From houses a supply of fruit will be kept up some time longer, the latest fruits only swelling now. Suffieient moisture will be secured to this crop by damping in the morning, and again early in the afternoon, affording water to the roots moderately ; a supply once a week will in most eases be suffieient. All superfluous laterals should be cut out, so as to afford the prineipal foliage the benefit of the autumn sun. Plants with fruit approaching ripeness should be kept dry, and a brisk heat maintained with rather free ventilation, the temperature being kept at 65° at night, 70° to 75° by day, rising to 85° or 90° from sun heat, affording a little air at the upper part of the roof whenever the weather is favourable.

Peaches and Nectarines.—*Earliest House.*—The trees are at rest, bright and promising in appearance, the buds not too large or over-developed, and likely to retain their hold on the trees. Where the roof-lights have been removed the borders will have been thoroughly moistened, and this, with the invigoration eonsequent on exposure, is the best safeguard against the buds falling. The trees must be pruned and dressed with an inseetieide, thoroughly washing the woodwork with soap and water, the glass with clear water, and the walls with limewash. Tie the trees to the trellis, everything being forwarded so that a start can be made without delay at the proper time. Let the lights remain off until the time of elosing the house. If the lights are fixed the inside border must not laek moisture, and air must be given to the fullest extent, insuring thereby as complete rest as practicable under the eireumstances.

Second Early House.—The trees have shed the leaves. Trees that have strong wood, which takes more time to mature than the moderately vigorous, must not be exposed until the growths and foliage are well matured. The exposure of the trees has an invigorating effeet, insures perfeet rest, and the rains do mueh to free them of insects, besides properly moistening the borders. When the foliage is all down the neeessary pruning, dressing the trees with an insecticide, and cleansing the house should be proceeded with, removing the loose surface soil down to the roots, and adding fresh material, but not eovering the roots deeper than 2 or 3 inches. In the ease of fixed roof-lights watering may be neeessary ; under no eireumstances must the trees be allowed to become dry at the roots.

Midseason Houses.—If the trees are in a satisfactory condition the border will be sound, but when indifferent in fertility it may be necessary to have reeourse to lifting, the wood being firm and the foliage beginning to fall. It must be done with dispateh, all the materials being in readiness. Provide effieient drainage, shorten strong roots, and bring any that are deep near the surfaee, employing the compost moderately firm. Good loam, rather strong, with an admixture of a sixth of old mortar rubbish, will grow Peaehes perfectly. If the soil be light add a fourth of elay marl, and if very heavy, a similar quantity of road scrapings. If the soil is deficient of calcareous matter add a sixth of old mortar rubbish. Avoid manure, except at the surface. Give a good watering, and the roots will soon get established in the fresh compost. Trees judiciously treated at the roots whilst they have foliage seldom fail to set and stone the fruit satisfaetorily.

Borders that have the surfaee a soapy mass, and it is not possible to remove it, may have a good dressing of quieklime quite an ineh thick, mixing it with the surface soil as deeply as the roots allow without much disturbanee, supplying quiekly acting top-dressings in the spring.

Late Houses.—Oetober Peaehes are quite as much valued as those of May, as they are fine in appearanee, and when properly supplied with moisture and nutriment during the growing season juicy and well flavoured. Sea Eagle is one of the best—large, showy, good flavoured, with a juicy flesh, free of the stringiness and mealiness too prevalent in some late Peaches. As the wood in many late unheated houses is not too ripe, the house may be kept almost elosed by day so as to secure a good heat, admitting sufficient air to insure a circulation, eontinuing the ventilation at night. Any trees that have too gross wood should have a trench taken out as deep as the roots and about one-third the distance from the stem the trees eover of trellis, and left open for a fortnight, then filled in again firmly.

Pines.—*Plants Showing Fruit.*—These will be valuable when fruit is searce and dear, therefore afford such plants the best positions in the fruiting department. Maintain a temperature of 70° at night, 75° artificially by day, up to 85° to 90° with sun, closing at 85°, sprinkling the paths when their surfaees beeome dry, and oeeasionally the plants on fine afternoons. Keep the bottom heat steady at 85° to 90°. Examine the plants onee a week for watering, and if any require it afford a supply of clear liquid manure at about the same temperature as that of the beds. Care must be taken not to overwater the fruiters, as that has a tendeney to eause the fruit when eut to be blaek at the centre.

Plants to Fruit Early.—Queens are best for this purpose, but there is not always a certainty of their doing so unless they are given a period of comparative rest after making good growth. Plants intended for starting at the new year should be kept in a temperature of about 65° in the daytime by artifieial means, 60° at night, ventilating at 70°, closing at that, and allowing the bottom heat to fall to 70° to 75°. Water the plants only when necessary, but do not allow them to become so dry as to cause the foliage to become limp.

Young Plants.—All young stock should now be arranged so as to obtain the fullest benefit of light and air. As the sun diminishes a eorresponding diminution of temperature must take place at night, until it reaches the winter standard of 55° to 60° at night, and 65° in the daytime. Ventilate freely whenever conditions are favourable, paying particular attention to watering. Examine plants about once a week, and whenever one needs water give it eopiously at about the same temperature as the bed.

PLANT HOUSES.

Chrysanthemums.—These should be housed without delay, or injury from frost may result. After the plants are placed under glass syringe them freely, or their foliage will be liable to suffer by the dry atmosphere of the structure. Slugs are frequently carried into the houses with these plants. It is a good plan to look over the pots carefully with a light several nights in suecession to remove any that show themselves. Slugs may destroy some of the best blooms, while they prey injuriously upon the cuttings at a later date. If aphides are prevalent fumigate the house with tobaceo smoke. They are much easier destroyed at the present time than when the plants are in full bloom. Once the flowers are infested with these pests they are soon spoiled, and rendered useless for any purpose. Late kinds that are grown for cutting purposes only may be kept outside; but they should be placed where slight protection can be given them in case of frost. If these plants are to keep their foliage healthy the roots must be kept at work near the surfaee, and then those grown for large blooms will develop flowers of the best quality. This can be accomplished by applying stimulants in a weak state, and artificial manure in small quantities to the surfaee soil oeeasionally. Flat blooms that are both void of colour and substanee are frequently the result of overfeeding, whieh destroys the roots ; unless the latter are thoroughly active until the last well-finished blooms cannot be expected. Earwigs are often numerous, and they must be carefully watched for, as they soon devour the petals and destroy the blooms. Give abundance of air to plants plaeed under glass, so that the flower buds are not unduly hurried forward. It is also the best means of preventing damping in those expanding.

Calceolarias.—The earliest of these may be placed into 3 or 4-inch pots, according to their size. Grow these plants in a cold frame, but watch for slugs, which are particularly fond of them. Later plants may be pricked into pans and boxes according to the quantity grown. These may now have a light airy frame, and will do better than if kept in one with a northern aspect.

Cinerarias. The earliest plants of these will be coming into flower and will be useful in the conservatory. Later plants that need more root room should be repotted at onee. It is useless to repot those that are already showing their flower stems. Those for flowering in spring should be well cared for, beeause they are invaluable when the majority of bulbous plants are over. These plants will do for some time in cold frames. Give them abundance of air daily, and leave a little on the frames all night when mild. The watering of these plants should now be done in the morning. To those in their flowering pots that are well filled with roots weak stimulants may be given. Soot water in a clear state is very beneficial to them. Watch for aphides and destroy them direetly they make their appearanee.

Lilium Harrisi.—This is a useful decorative plant when in bloom, and ought to be grown in quantity. Medium sized bulbs should be placed in 6-inch pots that are well drained. The eompost may consist of fibry loam three parts, the remaining part being composed of leaf mould and sand ; to this may be added one-seventh of decayed manure. In potting the bulbs must be just covered. If the soil is moderately moist no water should be given. Stand the pots in a cold frame and fill the spaces between them with cocoa-nut fibre refuse, covering the surface with about 2 inehes of the same material. Failing this fine ashes will answer the same purpose. When subjected to this treatment evaporation is prevented and the bulbs soon commenee to root and grow. As soon as they show through the plunging material remove the plants to the greenhouse and apply water. If grown in quantity a low cool airy house will suit them well, or they may be plaeed on shelves moderately close to the glass. From one potting a long suecession of bloom may be obtained if proper treatment is given.

Callas.—If these are still in the open they should be lifted without delay, well watered, and stood behind a north wall until root aetion has commenced, when plaee in their winter quarters. Solanums, Bouvardias, Salvias, and other plants that are outside should be lifted and treated in the same way until they are established. If there is any appearance of frost while the plants are outside protect them by covering with mats.

Ivy-leaved Pelargoniums.—Plants that have been well ripened will, if placed under glass where a night temperature of 55° to 60° can be maintained, soon come into flower. If the plants have been standing outside they should have cool airy treatment for a week or two and then gradually kept close. Those well ripened under glass and reeently potted will in gentle warmth soon come into flower. Those for spring flowering

in 5-inch pots may be pinched and placed on a shelf where the temperature will not fall below 45° during the next three months.

Zonal Pelargoniums.—All plants grown for autumn and winter flowering should be under cover. Heavy rains and dull sunless weather are very liable to start them into a soft growth, and if this takes place the plants will not flower satisfactorily. Those placed in a suitable house if gradually kept close and finally subjected to a temperature of 55° to 60° will be in full bloom during the early part of November, a time when they are specially useful. Those not needed so early may have the protection of cold frames for a time. Give them abundance of air when favourable, throw off the lights during fine days, but protect them from frost and heavy rains.

French and Fancy Pelargoniums.—For early flowering these plants are best in 5-inch pots. For this purpose cuttings are rooted early, placed in 3-inch pots, and the point pinched out, or, better still, taken out when the cuttings are inserted. If this is done the plants start into growth with three or four shoots, and are established in 3-inch pots. From this size they should be placed into 5-inch pots, using a compost of loam and sand, with one-seventh of decayed manure. The soil must be pressed firmly into the pots to induce a slow sturdy growth. The plants should not be pinched again, but when potted stood on a shelf where the temperature during the winter will average about 40°. If the plants prepared for this purpose are too large pinch the remainder, give them the same treatment, and finally place them into 7-inch pots. Young stocks are preferable to old plants. The earliest of these should be given similar treatment to that advised for the young stock; the second earlies ought to be shaken out and repotted in smaller pots. Keep these close for a few days until they have commenced to root, when place on a shelf in any cool house. Cuttings that have been dibbled in outside and are rooted may be potted and placed on a shelf in a cool house. Late plants are often as important as early ones.

Fuchsias.—Cuttings that are just rooted may be potted singly into 3-inch pots. Stand these on a shelf close to the glass, where the temperature does not fall below 50°, until they are established, finally placing them where they can be kept at 45°. In this temperature they will grow slowly during the winter, and make excellent decorative plants early in the season.

THE BEE-KEEPER.

Seasonable Notes.

The fine weather of the past month has been beneficial to the bees, in marked contrast to that experienced a year ago. Bees have been daily on the wing, and those coming from colonies that are headed by young fertile queens have returned loaded with pollen, showing that breeding was going on apace. Stocks that were worked during the past summer for honey production, the queens of which were bred during the summer of 1896, were much quieter, and a less number of bees were observed on the wing than in the former case. This, at first sight, may appear strange, as the hives are crowded with bees, but the reason is the queens, having been worked at high pressure throughout the season, are now enjoying their well-earned rest.

Early in January, or at least six weeks earlier should the weather be mild, they will again commence their maternal duties, which will be continued throughout another season, or until they are replaced by young queens. In all probability those stocks which have queens of the current year, and according to present appearances are not as strong in bees as the older colonies, will be equally good, and in many instances better next spring, as the majority of bees hatched during the months of June and July will die off during the autumn.

More dead bees than usual were observed near their hives last August, owing to the excessively hot weather experienced. In some districts the honey flow was over at that date, and the bees remained at home, gaining an entrance to a weak unprotected colony, and making short work of their stores. Many complaints of robbing, and inquiries how to stop it, were made. When this takes place bees do not die of hard work, but owing to being in conflict with their neighbours.

Examining Stocks.

Before finally placing on the extra winter coverings it will be advisable to examine all stocks, so as to be certain they are in good condition for wintering. It will not be necessary to lift the frames out of the hive unless there is a special reason for doing so. A little practice will enable the bee-keeper to tell at a glance whether there is a queen in the hive, and if they have ample stores to tide over the winter. Choose the middle of a fine day for the operation. Remove the coverings and partly lift the quilt, look down between the combs, and if several of them have sealed stores the whole length of the frame which is visible from the top, they may at once be covered up without disturbing the bees.

If there is the least doubt in the matter, lift out two or three of the outside frames, and if these are not in a satisfactory condition the stock should be marked, and be at once fed with warm syrup, according to the recipe given in previous notes. If the majority of the hives in an apiary are of the same size and similar pattern, it is not often necessary to lift the quilt to find out if they are short of stores. The plan I usually adopt in my apiary, when I have a doubt in the matter, is to lift the back of the hive, and with a little practice any bee keeper may form a pretty correct estimate as to the amount of stores contained in each hive.

Queenlessness.

Owing to various causes stocks are sometimes found queenless at this season. Not an autumn passes, and the present one has not been an exception, but I have my attention called to this subject. It may be to a colony in which a young queen has been reared, and known to have commenced laying, but more often it has been to an old stock in which there was a queen of unknown age. In the former case it is difficult to know why a young queen should suddenly collapse. I have, however, had numerous instances of this. It has rarely happened, though, with a queen hatched in June or early in July. Queens hatched late in the season will often die in this mysterious manner. It, however, ought not to happen in an apiary where bees are kept in the modern frame hive. This will only take place when bees are left to take their chance and there is no system in their management.

If all the hives are numbered and a list kept of each, the age of the various queens, how obtained, when hatched, and other items of interest being placed under the number of each colony, all this may be entered in a small book which can be carried in the waistcoat pocket, and would be always at hand. It is not nearly so much trouble as one would imagine who had not tried it, and if the plan is carried out and a system of rearing young queens annually, there need be no danger of having worn out old queens in an apiary.

Drones Still in Hives.

A sure sign of queenlessness at this season is when drones are still observed in the hive. They may usually be seen on the wing when the sun is shining brightly during the middle of the day. If it is dull they will not leave the hive, and if the hive is queenless, or the colony is headed by an old decrepit queen (which is sometimes the case), the bees will not kill off the drones. If by chance only a solitary drone is observed to enter a hive it should at once be examined, and in all probability will be found queenless. It is useless leaving them with a view to introducing a queen next spring. If it is a strong colony it is not too late to introduce another queen. But the plan I prefer at this season is to unite them to one of the weaker stocks in the apiary. This must be carefully done, or fighting will take place. If the bees are brushed from the combs of each stock into an empty skep, and sprinkled with flour, both colonies being shaken together, and thrown down on a sheet in front of the frame hive in which they are to remain, a puff or two of smoke will cause them to run in together without the loss of a single bee.—An English Bee-keeper.

TO CORRESPONDENTS

*** All correspondence relating to editorial matters should, until further notice, be directed to "The Editor," **8, Rose Hill Road, Wandsworth, London, S.W.**, and **NOT** to Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Seedling Clove Carnations (*J. C. A.*).—The flowers sent are rich in colour, double, serrated, and fragrant. The fact that the seed you obtained from a pod of the old Clove, and which was sown in February, producing plants which have flowered so well and so soon, suggests fertilisation with pollen of the Margaret Carnations, though you do not mention having these in the garden. The plum-coloured variety is particularly attractive.

Asparagus "Fern" (*A. F. G.*).—There is usually a good demand for what is known as "Asparagus Fern," in Covent Garden and other flower markets, and those who have a considerable supply no doubt find the culture profitable. Your 7 acres is not the right kind for producing what is required in decorations, the species the most in demand for the purpose being Asparagus plumosus nanus, a native of South Africa, and grown under glass in this country. It would do no particular harm to cut some of the slender tops off your plants now, but as we fear they would realise a very small amount of money it might be as well to leave them where they are.

Do Tomtits attack Peas? (*E. H. O.*).—Yes, occasionally, instances of which have been from time to time recorded in our columns, and we have verified the statements by observing the habits of the birds. Commonly, however, sparrows are the chief delinquents. Hawfinches occasionally clear the Peas off wholesale, and so also do jays, but these are seldom seen at work, as they feed very early, and we have known wood pigeons clear off the entire crop of late Peas. There are two effective plans of preserving the Peas—namely, killing the birds and netting the rows so that no small birds can enter. Pilchard netting is required for excluding tomtits. We have used petroleum emulsion with good effect, as a solution of it makes the pods distasteful to the birds, the plants being syringed on a fine day so as to get the stuff to dry on the pods. This repeated occasionally proved effective.

Leather-jacket Grubs (*Evesham Gardener*).—We are unable to say, in the absence of specimen, what your man discovered. The female Tipula oleracea lays small black shining eggs, always in little heaps on or just within the soil, commonly about this time of the year, and the larvæ appear from them in the course of a few days if the eggs are laid early in the autumn, but commonly they do not appear until spring, at the earliest about February, generally at the beginning of May. The grubs feed during the summer, usually ending in late June to the beginning of August, but some much later, then pass into chrysalis or pupa form, and appear as daddy longlegs in late summer and autumn. The grubs are found from experience to be best acted upon by nitrate of soda, 2½ cwt. per acre, 1¾ lb. per rod. It stupefies them, and they ultimately die, whilst the crop thus relieved is accelerated in growth.

Diseased Chrysanthemum Shoot (*A. G.*).—The bud "taken" in the shoot you sent is "deaf,' and the upper leaves blackened, and to some extent clammy. On making a vertical section of the bud we found the interior quite hollow, brown, and dead, and under the microscope came first upon an egg, and then a (so-called perfect) four-legged creature, the Chrysanthemum bud gall mite (Phytoptus chrysanthemi, *Abbey*), discovered in 1893, which was for the first time illustrated and described in the *Journal of Horticulture*, September 28th, 1893, page 291. There was also the complete animal, but in skin form only, but it is the one named that devours the heart of the Chrysanthemum bud and causes it to be "deaf" or "blind.' In the leaves, where black and covered with sticky substance, eelworm (Tylenchus devastratrix) was found, and may be a consequence of the attack by the mite. Burn such shoots, and another season dust occasionally with tobacco powder, or spray with petroleum emulsion solution at intervals.

Plantains on a Lawn (*H. G. A.*).—The surest method of exterminating Plantains is to dig them up with small forks that are made for the purpose, obtainable from nurserymen and horticultural sundriesmen. Another way is by applying oil of vitriol from a stone blacking bottle, with wire round the neck for carrying it in one hand, having in the other a stick, with several notches cut round the end to the extent of an inch or so. By plunging this stick in the vitriol the notches hold enough for killing a plant or two by pressing the point of the stick exactly in the centre of each. It must not touch boots, clothes, hands, or be drawn along the grass, as the vitriol will burn everything it touches. In a few days after doctoring the withered Plantains may be swept up, and if the "stuff" has been properly applied the roots will be burnt out. Relative to the books you had better mention about the cost you do not wish to exceed, sending a stamped directed envelope for reply. You give no information as to the particular kind of information needed, but only ask for the "best" books, and these would cost several pounds. Please repeat the subjects, as your letter, now it is answered, cannot be preserved.

Names of Fruits.—*Notice.*—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. *In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing.* The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. *They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state.* (*E. H.*).—Your Apple has been compared with a few thousand others at the Crystal Palace Show, and examined by all the leading fruit experts who assembled there. It is regarded as a local seedling, and never had a generally recognised name, and is not thought worthy of a very good one. (*T. R. B.*).—1, Marie Louise; 2, Braddick's Nonpareil; 3, New Hawthornden. (*Amateur*).—The Apple is a local seedling, which probably has never had a name. The Pear is Catillac. (*A. G.*).—1, Gansel's Bergamot; 2, Souvenir du Congrès; 3, Duchesse d'Angoulême; 4, Beurré de Capiaumont. (*F. B.*).—1, Mère de Ménage; 2, Gloria Mundi; 3, Lord Derby; 4, Sandringham; 5, The Queen, 6, Warner's King. (*B. N. N.*).—1, Comte de Lamy; 2, Seckle; 3, Wadhurst Pippin; 4, Gascoyne's Scarlet Seedling. (*J. B.*).—Possibly an abnormal fruit of Tower of Glamis. (*J. R.*).—The smaller specimen is a typical Warner's King, and the larger, though differing, is probably the same variety. (*M. E.*).—1, Beurré de Capiaumont; 2, Souvenir du Congrès; 3, Beurré Superfin; 4, Williams' Bon Chrêtien; 5, Pitmaston Duchess.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*R. F.*).—The plant appears to be the Virginian Poke Weed (Phytolacca decandra), which is found in several gardens, and no doubt birds distribute the seeds. (*M. M.*).—1, Aster amellus bessarabicus; 2, A. acris; 3, A. cricoides. (*R. P. J.*).—1, Chrysanthemum latifolium; 2, Pyrethrum uliginosum; 3, Chrysanthemum maximum; 4, Helianthus rigidus. (*B. P.*).—1, Rudbeckia nitida; 2, Helenium autumnale. (*M. A.*).—All your specimens were quite dead through being in the post over Sunday. (*J. G.*). Through packing in wood wool all the nature had been drawn from the specimens, and they could not be named. The Pear is not recognised.

COVENT GARDEN MARKET.—Oct. 6th.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	1 0	to 3 0	Grapes, lb....	0 8	to 2 0
Cobs	20 0	22 6	Lemons, case	11 0	14 0
Filberts, 100 lbs.	0 0	0 0	St. Michael's Pines, each	3 0	8 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, ½ sieve	0 0	0 0	Onions, bushel	3 6	4 0
Beet, Red, doz.	1 0	0 0	Parsley, doz. bnchs.... ...	2 0	3 0
Carrots, bunch	0 3	0 4	Parsnips, doz.	1 0	0 0
Cauliflowers, doz.	2 0	3 0	Potatoes, cwt.	2 0	4 0
Celery, bundle	1 0	0 0	Salsafy, bundle...	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Seakale, basket	1 6	1 9
Cucumbers	0 4	0 8	Scorzonera, bundle	1 6	0 0
Endive, doz.	1 3	1 6	Shallots, lb.	0 3	0 4
Herbs, bunch	0 3	0 0	Spinach, pad	0 0	0 0
Leeks, bunch	0 2	0 0	Sprouts, ½ sieve...	1 6	1 9
Lettuce, doz.	1 3	0 0	Tomatoes, lb.	0 4	0 0
Mushrooms, lb.	0 6	0 8	Turnips, bunch	0 3	0 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6 0	to 36 0	Ficus elastica, each... ...	1 0	to 7 0
Aspidistra, doz.	18 0	36 0	Foliage plants, var., each	1 0	5 0
Aspidistra, specimen ...	5 0	10 6	Fuchsias, doz.	3 0	5 0
Chrysanthemums, doz. ...	4 0	9 0	Heliotropes, doz.	3 0	5 0
,, ,, single plants	1 6	2 0	Lilium Harrisi, doz.... ...	12 0	18 0
Coleus, doz.	2 6	4 0	Lycopodiums, doz.	3 0	4 0
Dracæna, var., doz.... ...	12 0	30 0	Marguerite Daisy, doz. ...	4 0	9 0
Dracæna viridis, doz. ...	9 0	18 0	Mignonette, doz.	4 0	6 0
Euonymus, var., doz. ...	6 0	18 0	Myrtles, doz.	6 0	9 0
Evergreeens, var., doz. ...	4 0	18 0	Palms, in var., each... ...	1 0	15 0
Ferns, var., doz.	4 0	18 0	,, specimens	21 0	63 0
Ferns, small, 100	4 0	6 0	Pelargoniums, scarlet, doz.	2 0	4 0

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms ...	3 0	to 5 0	Lily of the Valley, 12 sprays	1 0	to 2 0
Asparagus Fern, bunch ...	1 0	2 6	Marguerites, doz. bnchs....	2 0	3 0
Asters, bunch	0 2	0 6	Maidenhair Fern, doz. bnchs.	4 0	8 0
Bouvardias, bunch	0 6	0 8	Mignonette, doz. bnchs....	2 0	4 0
Carnations, 12 blooms ...	1 0	3 0	Orchids, var., doz. blooms	1 6	12 0
,, doz. bnchs. ...	3 0	6 0	Pelargoniums, doz. bnchs.	4 0	6 0
Chrysanthemums, 12 bnchs.	4 0	6 0	Pyrethrum, doz. bnchs. ...	1 6	4 0
,, ,, 12 blooms	0 6	2 6	Roses (indoor), doz.... ...	0 6	1 0
Cornflower, doz. bnchs. ...	1 0	2 0	,, Tea, white, doz. ...	1 0	2 0
Dahlias, doz. bnchs.... ...	2 6	6 0	,, Yellow, doz. (Niels)	1 6	4 0
Eucharis, doz.	2 0	3 0	,, Red, doz. blooms ...	0 9	1 0
Gardenias, doz.	1 6	2 0	,, Safrano (English)doz.	1 0	2 0
Geranium, scarlet, doz. bnchs.	3 0	4 0	,, Pink, doz.	1 0	2 6
Gladioli, doz. bnchs. ...	6 0	21 0	,, outdoor, doz. bnchs.	3 0	6 0
Lilium lancifolium, bnch.	1 6	2 0	Smilax, bunch	1 6	2 6
Lilium lancifolium, short, per 12 blooms	1 0	1 6	Sunflowers (various) ...	2 0	4 0
Lilium longiflorum, 12 blooms	3 0	4 0	Tuberoses, 12 blooms ...	0 3	0 4
			Violets, doz. bnchs.	1 6	2 0

OUR FRIEND IN VELVET.

How does the dictionary classify or describe "vermin?" "All sorts of small animals or insects which are destructive to grain or other produce; noxious persons." Now, this is clear and definite at any rate, and it remains with us to look closely at evidence before us ere we can truly designate our little friend the mole as vermin.

Set a report afloat, and see how difficult it is to stop that report; nay, indeed, how impossible it is to prevent its being magnified, distorted, and twisted till at length little of the original matter remains. The old proverb about the dog and his bad name and ultimate end is as true to-day as in the days of Æsop. Once let the idea get thoroughly established in men's minds that a certain animal or plant is obnoxious or detrimental to their welfare in the smallest degree, not the most circumstantial evidence will convince them to the contrary. So few people cultivate habits of close observance—we are so ready to take all on trust, and ready to swear by (not on) the printed book. We have a beautiful faith, but it is the faith of ignorance, not assurance.

It is almost a wonder that among an agricultural population we do not find more students of natural history or science—perhaps there are these students, but modesty keeps them from lifting up their voice in the street, or at the corners of the market place. The agriculturist has the grandest of opportunities, he is for ever out and about with Nature in all her moods, and might, if he had the observant eye, daily learn some lesson of her gracious teaching.

We have looked through much evidence with regard to the manners and habits of the mole, and the conclusion we have arrived at is this—that the harm they do is so infinitesimal as to be quite overbalanced by their good properties, and to our mind there is a very great question as to whether they do any harm at all. The indictment against them is that in grass or freshly tilled land they throw up unsightly hillocks. These hillocks consist of fine earth, and on grass they cannot but be productive of much good, the earth, if spread with a spade, forming a most excellent natural top-dressing.

Now about the freshly sown field. Possibly a few seeds are displaced (not eaten); and displaced, why? Because the mole was in pursuit of some insect or grub which might have been injurious to the growing crop. On land where moles are found exists a most capital system of surface drainage. The mole constructs its runs for nothing; no other drainer works for us on the same terms.

This little mammal is furnished with most wonderful digging and excavating tools. The forepaws or hands are furnished with long and strong claws; the bones of the forearm are short, and the muscles most powerful. When the mole is not in a hurry it flattens and compresses the superfluous earth worked out of its passages; it is only when in active pursuit of prey that it forms the well-known molehills. Now as to its food supply. It is not a big animal, and yet it requires a large amount of food. Then, too, its family has to be provided for, and five or six young moles do not live upon air.

Dr. Jessop, writing from a part of Norfolk where the mole has been practically exterminated, draws a sad picture of the destruction of vegetation by myriads of beetles, which have practically destroyed the Strawberry beds. Earthworms appear to be its common food, and a gentleman who kept a mole in confinement is of opinion that it could eat its own weight of worms in a day. Not only will it do this, but it has been ascertained that before the beginning of winter the mole prepares a larder by making a cavity in a bed of clay and filling this cavity with worms, evidently considering the time when frost will have made the earth too hard for tunnelling.

Here is the bill of fare for three days of a mole kept in confinement:—"Three or four dozen earthworms, a large frog, a quantity of raw beef, the body of one turkey poult and part of another, and a big black slug or two." Another naturalist, Macgillivray, states that the mole devours quantities of grubs, and Frank Buckland records the fact that in Hampshire where the moles had been on grass land, that land was after much more luxuriant, and that when all the grubs were eaten in one part, the moles then migrated to fresh fields and pastures new.

Then again, as every seed time comes round we hear of the ravages of the wireworm, and the papers teem with practical suggestions for getting rid of this plague. We have destroyed the balance of Nature, and now have to provide costly measures to remedy the evil. The mole is only too ready and willing to devour wireworms if they can get the chance, and they will do it much more effectually than we can.

Mr. Trevor Ballye gives us some interesting notes on the habits of moles, especially in July and August, when these industrious little creatures come above ground to search for white slugs and the larvæ of the crane fly (daddy longlegs); these larvæ are perhaps better known by the name of "leather jackets." In another place he speaks of moles making a raid on the larvæ of the cockchafer, which are particularly destructive to the roots of vegetation.

Sir Herbert Maxwell records a case in Somersetshire where on some grass land moles had been exterminated, and where, in consequence, the fields were simply covered by craneflies, the larvæ of which feed on the young grass roots. The larval stage of these insects lasts for three years, so it does not require a great stretch of imagination to picture the actual harm done. See a molehill among young growing Turnips, it is a sure sign not of malicious damage by the mole, but of the certain presence of wireworm, and if the only thing in favour of mole was this fancy for wireworm, this fact alone should save its life.

[Ought not there, then, to be the best of crops where moles are prevalent? Is it so?]

WORK ON THE HOME FARM.

If proper use is being made of the fine autumn weather we are enjoying, there should be little work left amongst fallows for next summer. We never knew a better time for autumn work, and trust we may have a continuance until all the Potatoes are stored; we have lively recollections, and not very pleasant ones, of last year's muddy fields.

The second early Potatoes are all marketed, and supplies are now being drawn from later kinds. Few of the latter are ready to take up, and there is so much second growth, that the quality can hardly be anything but second class; what they require is fine weather to ripen them off slowly and naturally. At any rate we cannot hurry them out of the land, except for immediate consumption, for it is very doubtful whether they would keep.

There is plenty of work for every spare hand at this season; watercourses are still low, and many large ditches have little water in them, so there would be a good opportunity for cleansing or deepening. In cleaning ditches or making new ones, it should always be remembered to make the bottom narrow enough, with the sides shelving to the desired width; they will then keep themselves clear for a much longer period than with a flat bottom, on the same principle as does a sanitary pipe.

We have lately had the opportunity of inspecting the farming of two neighbouring counties. Harvest was all gathered in, but the stackyards are not very full; pastures green, but very short. Turnips are in every case deficient, and we never saw a decent crop; some fields have hardly a root in them. This is a serious state of things, and must have an effect on prices of store stock.

Since commencing these notes rain has begun to fall heavily: this is disappointing for autumn work; nothing will benefit except Turnips, which require rain frequently in their present unhealthy condition.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

DATE.	9 A.M.					IN THE DAY.				
1897. September and October.	Barometer at 32°, and Sea Level.	Hygrometer.		Direction of Wind.	Temp of soil at 1 foot.	Shade Temperature.		Radiation Temperature.		Rain.
		Dry.	Wet.			Max.	Min.	In Sun.	On Grass.	
	Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Inchs
Sunday 26	30·138	61·8	58·9	N.	57·0	68·4	57·6	112·1	53·0	—
Monday 27	30·360	51·6	51·0	N.	56·4	61·7	45·6	70·4	40·0	—
Tuesday 28	30·129	58·2	55·8	N.	55·8	62·6	51·8	81·8	42·9	0·043
Wednesday.. 29	29·986	59·3	58·7	N.E.	56·0	70·6	50·9	87·9	44·9	0·683
Thursday.... 30	29·775	51·3	50·6	N.	57·2	57·3	50·1	70·4	46·3	—
Friday 1	29·991	52·7	50·9	N.	55·6	61·1	48·2	95·6	44·4	—
Saturday 2	30·215	51·7	50·2	E.	55·3	62·4	46·1	93·8	41·0	0·102
	30·076	55·2	53·7		56·2	63·4	50·0	87 4	44·6	0·829

REMARKS.

26th.—Overcast till 10 a.m.; bright sunshine after, and clear night.
27th.—Thick fog early; the sun shining through from 9 a.m., but slight fog or haze all day.
28th.—Overcast early; rainy from 9 a.m. to 10.30, followed by faint sunshine; overcast afternoon.
29th.—Foggy early, with spots of rain; fair morning; sunny afternoon; heavy thunderstorm with much lightning from 7.30 to 10 p.m.
30th.—Fair day, with faint sunshine in morning.
1st.—Overcast till 11 a.m., then sun, and cloudy afternoon.
2nd.—Fair early; generally sunny from 10 a.m. to 2 p.m., and cloudy after.
Temperature much the same, but the nights warmer.—G. J. SYMONS.

Journal of Horticulture.

THURSDAY, OCTOBER 14, 1897.

THE JOURNAL OF HORTICULTURE *can be obtained from the Office,* 171, *Fleet St., London, post free for a Quarter,* 3/9. **Editorial communications must be addressed to 8, Rose Hill Rd., Wandsworth, S.W.**

ROSE ANALYSIS, 1886-1897.

THE arrival of the Rose catalogues from the nurseries reminds me that the time has arrived when this analysis should be issued, for any information bearing on the selection of varieties ought to be in the hands of the selectors as early in October as possible, so that their orders for new plants may be forwarded in good time. The advantage of sending in early orders is twofold—the likelihood of securing better plants, and the certainty of their being despatched directly they are ready for removal from their quarters in the nurseries. The latter consideration is one of the greatest importance, as it allows of Roses being planted under the most favourable conditions, and particularly will this be the case should November happen to prove mild, and the soil be in good working condition. A few days lost at this important season through delay in ordering the plants will often have considerable influence on their next year's growth. Besides this, in a seasonable autumn the soil becomes gradually colder and colder as November advances, and when December has been reached one never knows how soon a frost may come, which will suspend all planting operations for weeks together.

Before proceeding to consider the relative positions of the Roses mentioned in the tables, it may be advisable to say a word or two, as usual, respecting the last exhibition of the National Rose Society, and the character of the past Rose season, both of which have more or less influence upon the tabulated results for the present year. The Crystal Palace Show was held this year on July 2nd, which is one of the earliest dates possible for that exhibition, at all events, as these dates are at present arranged. It was a very extensive show, indeed the largest the Society has ever held, the number of "exhibition" Roses amounting to 7200. The flowering season at the time the exhibition took place was, as in the preceding year, remarkably early as compared with that in an average year. The weather at the end of June had been unusually hot, but the Show day itself proved only moderately warm, and as there was an absence of sunshine the flowers retained their freshness throughout the exhibition.

It is remarkable to notice in scanning the performances of the different H.P.'s, as set out in a table I have drawn up for this and other purposes of comparison, how certain seasons favour, in a more or less marked degree, certain varieties. Some sorts are much more affected in this way than others—for instance, Mrs. John Laing has consistently taken the lead of all the other Hybrid Perpetuals at

HYBRID PERPETUALS AND HYBRID TEAS.

Position in Present Analysis.	Average Number of Times Shown.	No. of Times Shown in 1897 in True Relative Proportion to the Average.	Name.	Date of Introduction.	Raiser's or Introducer's Name.	Colour.
1	49·7	56	Mrs. John Laing	1887	Bennett	Rosy pink
2	35·9	43	Ulrich Brunner	1881	Levet	Cherry red
3	34·2	24	Madame Gabriel Luizet	1877	Liabaud	Light silvery pink
4	34·1	30	La France (H.T.)	1867	Guillot	Silvery rose, shaded lilac
5	33·9	39	A. K. Williams	1877	Schwartz	Bright carmine red
6	30·3	23	Marie Baumann	1863	Baumann	Soft carmine red
7	29·6	36	Her Majesty	1885	Bennett	Pale rose
8	28·2	34	Susanne M. Rodocanachi	1883	Lévêque	Glowing rose
9	27·0	26	Marchioness of Londonderry	1893	A. Dickson & Sons	Ivory white
10	25·1	19	Alfred Colomb	1865	Lacharme	Bright carmine red
11	24·4	26	Gustave Piganeau	1889	Pernet and Ducher	Shaded carmine
12	24·0*	24	Mrs. R. G. Sharman-Crawford	1894	A. Dickson & Sons	Clear rosy pink
13	23·0	14	Charles Lefebvre	1861	Lacharme	Purplish crimson
14	22·6	8	Merveille de Lyon	1882	Pernet	White
15	20·4	32	Horace Vernet	1866	Guillot	Scarlet crimson, dark shaded
16	20·0	15	Etienne Levet	1871	Levet	Carmine rose
17	19·5	21	Earl of Dufferin	1887	A. Dickson & Sons	Dark crimson, shaded maroon
18	18·9	4	Baroness Rothschild	1867	Pernet	Light pink
19	18·5	18	Dupuy Jamain	1868	Jamain	Bright cerise
19	18·5	28	Kaiserin Augusta Victoria (H.T.)	1891	Lambert & Reiter	Cream, shaded lemon
21	18·3	24	François Michelon	1871	Levet	Deep rose, reverse silvery
21	18·3	18	Louis Van Houtte	1869	Lacharme	Deep crimson, shaded maroon
23	18·2	22	Prince Arthur	1875	B. R. Cant	Bright crimson
24	17·4	18	Fisher Holmes	1865	E. Verdier	Shaded crimson scarlet
25	16·8	28	Caroline Testout (H.T.)	1890	Pernet & Ducher	Light salmon pink
26	16·0*	16	Marchioness of Downshire	1894	A. Dickson & Sons	Light pink, shaded rose
27	15·8	15	Duke of Wellington	1864	Granger	Bright shaded crimson
28	15·0	16	Captain Hayward	1893	Bennett	Scarlet crimson
28	15·0	15	Mrs. W. J. Grant (H.T.)	1895	A. Dickson & Sons	Bright rosy pink
30	14·6	19	Victor Hugo	1884	Schwartz	Dazzling crimson, shaded
31	14·5	4	Ferdinand de Lesseps	1869	E. Verdier	Shaded crimson
32	14·2	8	Marie Verdier	1877	E. Verdier	Pure rose
33	14·0*	14	Helen Keller	1895	A. Dickson & Sons	Rosy cerise
33	14·0	20	Margaret Dickson	1891	A. Dickson & Sons	Ivory white
35	13·9	9	Général Jacqueminot	1853	Rousselet	Bright scarlet crimson
36	13·7	10	Camille Bernardin	1865	Gautreau	Light crimson
36	13·7	11	Dr. Andry	1864	E. Verdier	Bright crimson
38	13·5	8	Heinrich Schultheis	1882	Bennett	Pinkish rose
39	13·4	7	E. Y. Teas	1874	E. Verdier	Bright red
40	13·3	7	Comtesse d'Oxford	1869	Guillot	Carmine violet
40	13·3	15	Marchioness of Dufferin	1891	A. Dickson & Sons	Pink
42	13·2	10	Duke of Edinburgh	1868	Paul & Son	Scarlet crimson
43	12·8	13	Lady Mary Fitzwilliam (H.T.)	1882	Bennett	Rosy flesh
44	12·0*	12	Marquise Litta (H.T.)	1893	Pernet & Ducher	Carmine rose, brighter centre
45	11·4	5	Le Havre	1871	Eude	Vermilion red
46	10·9	16	Comte Raimbaud	1867	Rolland	Clear crimson
46	10·9	14	Xavier Olibo	1864	Lacharme	Dark velvety crimson
48	10·2	8	Duke of Teck	1880	Paul & Son	Light crimson scarlet
49	10·0	7	Jeannie Dickson	1890	A. Dickson & Sons	Soft silvery rose
50	9·8	11	Beauty of Waltham	1862	W. Paul & Son	Rosy crimson
50	9·8	8	Duchess of Bedford	1879	Postans	Light scarlet crimson
50	9·8	12	Madame Eugène Verdier	1878	E. Verdier	Silvery rose
53	9·7	8	Abel Carriere	1875	E. Verdier	Crimson maroon, shaded purple
54	9·6	11	Pride of Waltham	1881	W. Paul & Son	Light salmon pink, shaded violet
55	9·3	7	Captain Christy (H.T.)	1873	Lacharme	Delicate flesh
55	9·3	4	Duke of Fife	1892	Coeker	Deep crimson scarlet
57	9·1	2	Reynolds Hole	1873	Paul & Son	Deep scarlet maroon
58	9·0	1	Prince Camille de Rohan	1861	E. Verdier	Crimson maroon
59	8·9	5	Marie Finger	1873	Raimbaud	Light salmon rose
59	8·9	7	Star of Waltham	1875	W. Paul & Son	Carmine, shaded violet
61	8·5	10	Duchesse de Morny	1863	E. Verdier	Silvery rose
62	8·1	2	Charles Darwin	1879	Laxton	Brownish crimson
63	8·0	5	Madame Victor Verdier	1863	E. Verdier	Clear light crimson
64	7·9	3	Countess of Rosebery	1879	Postans	Cherry carmine rose
65	7·5	1	Marquise de Castellane	1869	Pernet	Clear cherry rose
65	7·5	10	White Lady (H.T.)	1890	W. Paul & Son	Creamy white
67	7·1	4	Marie Rady	1865	Fontaine	Brilliant red
68	6·2	1	Violette Bouyer	1881	Lacharme	Tinted white
69	5·8	2	Auguste Rigotard	1871	Schwartz	Light carmine
70	5·7	5	Duke of Connaught	1876	Paul & Son	Bright velvety crimson
71	5·6	8	Sir Rowland Hill	1888	Mack	Deep velvety plum
72	5·5	2	Viscountess Folkestone (H.T.)	1886	Bennett	Creamy white, shaded flesh
73	5·4	4	Sénateur Vaisse	1859	Guillot	Bright crimson

* New varieties, the positions of which are dependent on their records for the 1897 show only.

every one of the last six exhibitions, whereas the number of Charles Lefebvres has varied considerably during the same period. Nevertheless, the fact remains that all Roses have their particular seasons or record years. For example, at the exhibition of 1892 the following varieties were more numerously staged than at any of the other eleven shows. The numbers after the names of the Roses show the maximum number of times that each of the varieties mentioned was staged in the prize stands at any exhibition. La France (49), A. K. Williams (40), Charles Lefebvre (32), Etienne Levet (34), Ferdinand de Lesseps (21), and Le Havre (20). In 1893 records were established for Alfred Colomb (42), Earl of Dufferin (28), Dupuy Jamain (24), Fisher Holmes (24), Duke of Wellington (24), Camille Bernardin (28), and Reynolds Hole (19). In 1894 Marie Baumann (40), Merveille de Lyon (36), Baroness Rothschild (28), and Jeannie Dickson (14). In 1895 Her Majesty (41), Heinrich Schultheis (23), Duchess of Bedford (17), Duchesse de Morny (16), and Charles Darwin (13). In 1896 Gustave Piganeau (29) was the only prominent Rose which thus distinguished itself. Coming now to our last National Show, we find Mrs. John Laing (56), which for the fifth year in succession heads the list of H.P.'s, was oftener staged than on any previous occasion. In fact, out of nearly seventy prize stands at that exhibition open to Hybrid Perpetuals, there were only eleven which had not in them a specimen of this remarkable Rose. It was also a record year for Susanne Marie Rodocanachi (34), Horace Vernet (32), and Victor Hugo (19)—three Roses unrivalled in their respective colours; and Prince Arthur (22). Among other established kinds which were also unusually well shown in 1897 may be mentioned Ulrich Brunner, A. K. Williams (which has only twice before been as often exhibited), Her Majesty, Gustave Piganeau, François Michelon, Margaret Dickson, Marchioness of Dufferin, and Xavier Olibo. On the contrary, either the season, or the date of the show in respect to it, proved disastrous to such prime favourites as Madame G. Luizet, Marie Baumann, Alfred Colomb, Charles Lefebvre, Merveille de Lyon, Etienne Levet, Baroness Rothschild, and many others.

New Roses, those sent out less than six years ago, were not greatly in evidence at the last exhibition, as compared with the number to be seen at the preceding show. It is, however, gratifying to notice that out of the eight new kinds represented six occupy better positions than in the previous analysis. To begin with Duke of Fife, the only 1892 variety, a bright but somewhat thin sport from Etienne Levet. It is needless to say that this is not one of the aspiring varieties referred to, as it has fallen since last year from No. 40 to No. 55. 1893 is credited with Marchioness of Londonderry, Captain Hayward, and Marquise Litta. Of these the first named continues to hold the forward place accorded to it in the previous analysis, and stands at the head of all the white, or nearly white, H.P.'s. Captain Hayward, notwithstanding the warmth of the summer, has risen from No. 30 to No. 28. Marquise Litta (No. 44), unlike all the other new Roses mentioned here, is of foreign origin, and no doubt on this account for the first time appears in the table at all. Last year it was shown in only three prize stands, this year it was set up in twelve. It is such a good grower, so distinct in colour, and in other respects so promising, that it is likely to be much more frequently staged another season. Mrs. R. G. Sharman-Crawford (No. 12), which came out first in 1894, gains two places, an excellent performance considering the high position it previously occupied. Marchioness of Downshire, of the same year, rises from No. 51 to No. 26. The season of 1895 is credited with two new sorts. The first of these, Mrs. W. J. Grant, is a superb Rose, which in the last analysis was to be found only at No. 63, but now with one grand stride rises to No. 28, and is pretty certain when more largely grown to occupy one of the leading places in the table. The other 1895 variety, Helen Keller, has also made capital progress, rising from No. 51 to No. 33.

As rosarians are never tired of discussing the relative merits and

TEAS AND NOISETTES.

Position in Present Analysis.	Average Number of Times Shown.	No. of Times Shown in 1897 in True Relative Proportion to the Average.	Name.	Date of Introduction.	Raiser's or Introducer's Name.	Colour.
1	41·4	41	Catherine Mermet	1869	Guillot	Light rosy flesh
2	39·6	42	The Bride	1885	May	White, tinged lemon
3	36·7	36	Innocente Pirola	1878	Madame Ducher	Creamy white
4	36·6	26	Comtesse de Nadaillac	1871	Guillot	Peach, shaded apricot
5	29·5	29	Maman Cochet	1893	Cochet	Deep flesh, suffused bright rose
6	28·4	18	Marie Van Houtte	1871	Ducher	Lemon yellow, edged rose
7	28·2	26	Souvenir d'un Ami	1846	Belot Defougère	Pale rose
8	27·7	18	Souvenir d'Elise Vardon	1854	Marest	Cream, tinted rose
9	26·6	43	Madame Cusin	1881	Guillot	Violet rose, yellow base
9	26·6	31	Madame Hoste	1887	Guillot	Pale lemon yellow
11	26·2	23	Souvenir de S. A. Prince	1889	Prince	Pure white
12	25·4	17	Ernest Metz	1888	Guillot	Salmon, tinted rose
13	24·9	28	Madame de Watteville	1883	Guillot	Cream, bordered rose
14	24·7	10	Niphetos	1844	Bougère	White
15	21·8	14	Maréchal Niel (N.)	1864	Pradel	Deep bright golden yellow
16	21·2	14	Honourable Edith Gifford	1882	Guillot	White, centre flesh
17	20 8	20	Caroline Kuster (N.)	1872	Pernet	Lemon yellow
18	20·2	12	Francisca Krüger	1879	Nabonnand	Coppery yellow, shaded peach
19	20·0	16	Ethel Brownlow	1887	A. Dickson & Sons	Rosy flesh, shaded yellow
20	17·7	19	Jean Ducher	1874	Madame Ducher	Salmon yellow, shaded peach
21	16·1	13	Anna Olivier	1872	Ducher	Pale buff, flushed
22	15·7	13	Madame Bravy	1848	Guillot	White, flushed pale pink
23	14·3	19	Princess of Wales	1882	Bennett	Rosy yellow
24	11·7	25	Medea	1891	W. Paul & Son	Lemon yellow
25	11·3	4	Rubens	1859	Robert	White, shaded creamy rose
26	10·3	9	Etoile de Lyon	1881	Guillot	Deep lemon
27	9·0	2	Madame Lambard	1877	Lacharme	Salmon, shaded rose
28	8·8	8	Cleopatra	1889	Bennett	Creamy flesh, shaded rose
29	8·5	9	Bridesmaid	1893	May	Bright pink
30	7·0*	7	Muriel Grahame	1896	A. Dickson & Sons	Pale cream, flushed rose
31	5·8	3	Devoniensis	1838	Foster	Creamy white, blush centre
32	5·0	5	Comtesse Panisse	1877	Nabonnand	Flesh, tinted coppery rose

* A new variety, the position of which is dependent on its record for the 1897 show only.

demerits of different varieties, it may be of interest if I continue the remarks I made last year on some of the more prominent Roses in the table of H.P.'s. These remarks, it may be remembered, were principally based upon the performances of the various established kinds as revealed in the table of comparative results for the twelve years previously referred to. The first Rose to notice is that grand dark crimson H.P. Horace Vernet. Although more than thirty years old, it has never before been as popular with exhibitors as at the present time. In fact, where five blooms of it were on an average staged at the first six exhibitions of the period covered by the analysis, more than seven were set up at the last six. It is generally stated to be a Rose of but very moderate growth as a cut-back, but in my own garden it makes a taller and more vigorous plant than most of the other Hybrid Perpetuals growing under precisely the same conditions. That sturdy variety, Etienne Levet, retains its position well, and would stand higher in the list were it a little more constant. Mr. Foster Melliar, in his "Book of the Rose," aptly describes the willowy Earl of Dufferin as "a Rose for exhibition but not for garden culture." It is decidedly late in flowering, and very dependable in forward summers, its records for the last five shows being remarkably good and consistent. The variety which follows is also late flowering, and one of the oldest in the table. Considering how many pink Roses have appeared since Baroness Rothschild was sent out in 1867, it is surprising to see how well it still holds its own. In fact, in none other of the twelve years was it as numerously shown as in 1894 and 1896. Dupuy Jamain, another old favourite, which although at no individual show largely staged, still retains a good place, owing to its wonderful consisteney.

We next come to a Rose of very distinct growth, François Michelon. This year it appeared in something like its old form, but is evidently declining in favour. Louis Van Houtte, which follows, is a fine dark H.P., but unlike its rival, Horace Vernet, it has been rather less frequently shown in recent years than formerly. Prince Arthur, the next on the list, has proved itself singularly constant, its records for eleven of the twelve exhibitions ranging only between sixteen and twenty-two. Fisher Holmes, a very old variety, appears to be in greater request than ever, having been staged nearly half as often again in the latter as in the former half of the twelve years. Although small for an exhibition Rose, Duke of Wellington also maintains its position remarkably well. Victor Hugo, another small Rose, but indispensable on account of its glowing crimson tints, was very slow in making its mark; indeed, only at the last five exhibitions has it obtained anything like a footing. Ferdinand de Lesseps, with which is included Maurice Bernardin, has been less frequently shown at the last four exhibitions than previously. Marie Verdier, although so distinct in colour from any other Rose in this section, is decidedly less popular than formerly. I will only now refer to one other variety, and that the oldest on the list, our old friend Général Jacqueminot. It requires a cool season, and consequently its records are somewhat erratic. Nevertheless, considering its thinness and antiquity, it may be said to hold a surprisingly good position at No. 35.

Catherine Mermet still remains the champion Tea. The Bride gains ground upon it a little year by year, but at the present rate of increase it will be a very long time before it reaches the highest rung of the T. and N. ladder. Innocente Pirola has succeeded in passing Comtesse de Nadaillac, while Souvenir d'un Ami takes the place of Souvenir d'Elise Vardon. The most remarkable advance is, however, that shown by Madame Cusin, which rises from No. 13 to No. 9. At no previous show has this fine variety been as numerously represented as it was this year. In fact, it appeared in more stands than any other Rose in this section. Madame de Watteville was also unusually well shown, and gains two places in consequence.

On the other hand, those two beautiful Teas, Comtesse de Nadaillac and Souvenir d'Elise Vardon, have, as previously indicated, each fallen a step. The latter variety has never before been as sparsely shown as at the last three exhibitions. The snow-white Niphetos is another Rose which appeared in comparatively few stands this year, while Ernest Metz falls from No. 9 to No. 12.

The only Tea Roses on the table less than seven years old are Maman Cochet, Medea, Bridesmaid, and Muriel Grahame. All are valuable additions to this section, and curiously enough two of them sports from the leading flower—Catherine Mermet. Medea, although first sent out in 1891, has, as it were, sprung suddenly into notoriety, for at none of the previous shows was it staged in prize stands more than six times, whereas this year there were only nine other Teas more frequently exhibited. Of the two 1893 varieties, Maman Cochet still retains the prominent position it secured last year at No. 5, while Bridesmaid remains as before, near the bottom of the list. Muriel Grahame, although only distributed in 1896, was shown this year in seven different stands, and gained the silver medal for the best bloom of any Tea exhibited by an amateur, not only at the Crystal Palace, but also at the N.R.S. Show at Norwich.

I have again to express my best thanks to those brother rosarians who so kindly assisted me in taking down the names of the Roses in the prize stands at the last Crystal Palace Exhibition.

The Newer Roses Audit.

For those new Roses whose places in the analysis depend so much upon the character of one or two seasons, whether favourable or unfavourable to their respective requirements, this audit has been instituted. Each of the following voters were requested to place a mark against the six varieties they considered best in the list of H.P.'s and H.T.'s on the circular sent them, and a similar mark against the best three of the five Teas. *Amateurs.*—Mr. J. Bateman, Mr. W. Boyes, Dr. S. P. Budd, Mr. P. G. C. Burnand, Rev. F. R. Burnside, Rev. A. Foster-Melliar, Mr. C. J. Grahame, Mr. H. P. Landon, Mr. R. H. Langton, Mr. E. B. Lindsell, Mr. H. V. Machin, Mr. O. G. Orpen, Rev. J. H. Pemberton, Mr. A. Slaughter, and Mr. A. Tate. *Nurserymen.*—Messrs. G. Burch, J. Burrell, C. E. Cant, Frank Cant, W. F. Cooling, A. Dickson, R. Harkness, W. J. Jefferies, H. Merrywcather, G. Mount, G. Paul, A. Piper, A. E. Prince, W. D. Prior, and A. Turner.

Hybrid Perpetuals and Hybrid Teas.

Position in Audit.		Total No. of Votes.	Votes by Amateurs.	Votes by Nurserymen.
1	Mrs. R. G. Sharman-Crawford ...	27	14	13
1	Mrs. W. J. Grant (H.T.)	27	13	14
3	Captain Hayward	22	10	12
4	Marchioness of Londonderry	20	9	11
5	Helen Keller	19	8	11
6	Marquise Litta (H.T.)	16	7	9
7	Duke of Fife	7	4	3
7	Marchioness of Downshire	7	6	1
7	Tom Wood	7	3	4
10	Clio	6	1	5
11	Charlotte Gillemot (H.T.).....	5	4	1
12	Marjorie (H.T.)	2	0	2
13	Mrs. Harkness ..... / Paul's Early Blush	2	1	1
	Teas.			
1	Maman Cochet	29	15	14
2	Muriel Grahame	25	12	13
3	Bridesmaid	21	11	10
4	Medea	10	7	3
5	Golden Gate	5	0	5

Another year, if the voters can be prevailed upon, as some have this year on their own account done, to place the new Roses in the two sections in their order of merit, much more satisfactory and valuable results would be obtained. But even as at present arranged, the voting is so consistent that there will be little difficulty in picking out the varieties considered the best.

Roses for General Cultivation.

The following select lists have been revised with the usual care, but the alterations made from year to year are necessarily slight. As in the previous selection, all the established sorts named in each list have been placed in what I regard as their order of merit, considering the purposes for which they are intended. This arrangement is intended to assist those who require only a moderate number of varieties or

plants. The sorts marked with an asterisk are of recent introduction, and are arranged alphabetically.

EXHIBITION ROSES. — HYBRID PERPETUALS. — *Light Coloured Varieties.*—Mrs. John Laing, Madame Gabriel Luizet, Marie Finger, Merveille de Lyon, Baroness Rothschild, *Clio, *Marchioness of Londonderry, and *Mrs. R. G. Sharman-Crawford. *Medium Reds*—Ulrich Brunner, Dupuy Jamain, Comtesse d'Oxford, Susanne Marie Rodocanachi, Camille Bernardin, Heinrich Schultheis, and *Helen Keller. *Reds.*—Fisher Holmes, Général Jacqueminot, Marie Baumann, Alfred Colomb, Mauriee Bernardin, Dr. Andry, Duke of Edinburgh, Earl of Pembroke, Victor Hugo, and *Captain Hayward. *Dark Varieties*—Prince Arthur, Charles Lefebvre, Duke of Wellington, Prince Camille de Rohan, Earl of Dufferin, Louis Van Houtte, and Duke of Connaught.

HYBRID TEAS.—La France, Viscountess Folkestone, Captain Christy, Caroline Testout, Grace Darling, Kaiserin Augusta Victoria, White Lady, *Marquise Litta, and *Mrs. W. J. Grant.

TEAS AND NOISETTES.—Marie Van Houtte, Madame Lambard, Hon. Edith Gifford, Caroline Kuster, Scuvenir de S. A. Prince, Souvenir d'un Ami, Innocente Pirola, Anna Olivier, Madame Hoste, Rubens, Francisca Krüger, Jules Finger, *Corinna, and *Maman Cochet.

BOURBON.—Mrs. Paul.

GARDEN ROSES.—SUMMER FLOWERING.—*Provence.*—Common or Cabbage. *Moss.*—Common or Old. *Damask.*—Rosa Mundi. *Hybrid China.*—Charles Lawson (climbing). *Austrian Briar.*—Austrian Copper. *Hybrid Sweet Briars.*—Janet's Pride, *Jeannie Deans, and *Lady Penzance. *Ayrshire.*—Bennett's Seedling or Thoresbyana (climbing). *Evergreen.* — Félicité Perpétue (climbing). *Climbing Polyantha.* — Claire Jacquier, Grandiflora, and *Turner's Crimson Rambler. AUTUMN FLOWERING.—*Hybrid Teas.*—Augustine Guinoisseau, Bardou Job, Camoens, Gloire Lyonnaise, Gustave Regis, and *Madame Abel Chatenay. *China.*—Old Blush or Common Monthly, Laurette Messimy, *Madame Eugène Resal, and *Queen Mab. *Teas and Noisettes.*—Gloire de Dijon (climbing), W. A. Richardson (climbing), L'Idéal, Rêve d'Or (climbing), *Beauté Inconstante, *Madame Pierre Cochet, *Souvenir de Catherine Guillot, and *Souvenir de Madame Eugène Verdier. *Bourbon.*—Souvenir de la Malmaison. *Polyantha.*—Madame Anna Maria de Montravel, Gloire des Polyantha, Perle d'Or, and *Georges Pernet. *Japanese.*—Alba, Madame Georges Bruant, and *Fimbriata. *Perpetual Scotch.*—Stanwell Perpetual. Two new climbing Roses should be also included, *Alister Stella Gray (N.) and *Paul's Carmine Pillar (single flowered).—E. M., *Berkhamsted.*

A WELSH VINEYARD.

WE are sending you to-day by parcel post a box containing three bunches of Grapes picked from the Vines at Swanbridge. They are typical samples of the crop there this year, which is very great—greater than any previous year. As you see, the berries are remarkably well coloured, but not nearly so sweet or palatable as they usually are in good seasons, the reason of which is undoubtedly the protracted cold weather during August and the early part of September. You will notice they are exceedingly juicy, and are in excellent condition for wine-making, and my father is sanguine of a vintage of twenty-five or thirty hogsheads this year of a wine that will not depreciate the high reputation already acquired by the Welsh wines.

The vineyard at Swanbridge has been a veritable picture for the last fortnight. The rows and rows of Vines in long unbroken lines, with their strong, healthy green foliage here and there relieved with high colours of autumn tints, and each set off with thick clusters of jet black Grapes, has created a scenic effect, the uniqueness of which in these parts has been exemplified by the numbers of people who have taken advantage of the fine autumn weather we are now experiencing to visit it, and see for themselves a real vineyard. To cyclists of both sexes it has proved a great attraction.

"La vendange" commenced on the 8th inst., and the first Grapes were put through the égrappoir in the afternoon, one large vat being already full of fermenting viniferous matter. It will be Wednesday or Thursday next before all the Grapes are gathered in. Unfortunately, though Castel Coch promised well in the beginning of the season, the mildew completely reversed the state of things, and the result is nearly a failure. During the last few years mildew seems to have claimed this vineyard peculiarly as "its own," for notwithstanding frequent periodical applications of the Bordeaux mixture and up-to-date continental usages for combatting it, it still remains the unconquered foe of the Castel Coch Vines. The old Vines are the worst afflicted, the younger ones appearing able to throw off the malady. Happily the vineyard at Swanbridge is exempt from this evil.

I am desired to send you these short notes, as there is so much upon the subject at present in the daily papers, and father is inundated with questions from persons all over the country who are interested in horticulture requesting information upon the present year's results, which will be known in due time.—HUGH A. PETTIGREW.

[The bunches received are small, densely packed clusters, about half a pound in weight, of Grapes as black as Sloes, and ⅝ inch in diameter. They would not take a prize for flavour, but are capable of making excellent wine. The variety is presumably the Gammi Noir.]

HARDY FLOWER NOTES.

ONE of the charms of a well-furnished garden of hardy flowers is the variety it presents as the year goes on. Sameness and monotony there need not be. From the dawn of spring until frost sets its seal upon the earth a constant succession of flowers will come to give joy to their owner. Thus it is that as October breaks upon us we are still in possession of many flowers. Spring Leucoiums may yet be long of coming, but their fairy-like sister the Autumn Snowflake still hangs its pendent bells from its chocolate coloured stalks. The grandeur of the spring Crocuses is as yet hidden 'neath black earth, but those which are yielded by the shortening day have equal if less voluptuous charms. The Tulip has yet to wait awhile before it opens its cup to the sunshine of May, but the statelier Gladiolus has not yet deserted us, and still gives us more than passing pleasure. There are yet many flowers in bloom ready to smile upon us until bitter winds come to steal away our treasures for a time. Of some of these it is our duty now to tell.

One of the most satisfactory of the autumn flowers is that distinct-looking Helenium which is, unhappily, under a cloud so far as its nomenclature is concerned. This is the one first called H. grandicephalum striatum, and which the Rev. C. Wolley-Dod considers may be H. nudiflorum. I am still inclined to think that it may be as well until we learn more about it to retain another name —*i.e.*, H. autumnale striatum. This is, however, by the way, and my purpose now is not to elaborate this point, but again, as has been done before, to draw attention to the plant's distinctness and decorative value. It is now fairly well known to many, but would find more acceptance did it always present the deeper colouring it assumes in some gardens. Although the size of the flowers is to some extent reduced, I am of opinion that the colour of this Helenium is intensified by being grown on a comparatively poor soil instead of a richer one. The same treatment has also the effect of reducing the height of the plant—a decided advantage in many gardens.

Still effective are the Kniphofias, and they are all the more so from the distinct appearance they present in the garden, where there are at this season Composites in great profusion. As I have remarked before, beautiful as are some of the newer yellow-flowered hybrids, we have less of these this season than of the scarlet varieties. The beauty of some of these yellow varieties, such as Lachesis, can hardly be gainsaid, but we do not desire to see the garden overwhelmed with this colour at any time. To some it is no recommendation to a plant to say that it comes into flower early and blooms on for a long season. They say they prefer something of more short lived beauty, which will not pall upon them before it ceases to bloom for the season.

To these—and they are comparatively few—Kniphofia Rooperi cannot be recommended, but to those who like a plant which will yield them a long succession of flowers it will be found worthy of its room in the garden. There are some with larger and more brilliantly coloured spikes, but there is none of more prolonged blooming habit. It comes into bloom often in June and continues until frost comes. In mild localities, such as some parts of Ireland, I am told that this Torch Lily is rarely out of bloom. With the usual precautions K. Rooperi is hardy, and it will not be long until we have to take these. Tying the leaves together to form a cone so as to throw the rain off the crown will be found beneficial, and this ought to be supplemented with a little broken or dry litter. K. Rooperi has been introduced for more than forty years. It comes from British Caffraria. Although it is said to grow only 2 feet high it really considerably exceeds that height.

Last year in going through a nursery having an almost unique collection of hardy flowers, I saw among the Asters one bearing the name of "F. W. Burbidge." I observed to my guide "that this should be a good one." His reply was, "and it *is* a good one." The result was that a plant was booked, and this is now in bloom. It is

not always that our gardening friends have their names attached to plants whose merits entitle them to this distinction—and one so distinguished as the curator of Trinity College Gardens deserves that his name should be given to no mediocre flower. One would like to say that this Michaelmas Daisy does full justice to the name it bears. That were hard to do; but it is, notwithstanding, a plant of exceptional merit, large as is the number of superior Starworts. The catalogue description is—"the best of all; colour soft rosy blue; flowers very large, produced in the utmost profusion—A1." Without committing oneself to the opinion that it is "the best of all," one may with safety say that Aster F. W. Burbidge is a beautiful and useful variety. The bright colour of the unopened flowers is a noticeable feature of the plant, while its habit is excellent, being graceful and of medium height.

Among the other flowers still in bloom the Crocuses, as usual at this season, must come in for notice. The pretty C. iridiflorus, the effective C. speciosus, the pleasing C. zonatus, with C. pulchellus, and others, are in bloom. I do not know why it is, but C. zonatus seems to possess a special attraction for the slugs, which crop off the flowers almost as they appear, although frequent search is made for the destroyers. On the other hand C. speciosus is left almost severely alone. Of the autumn flowering Croci none of the white forms is better than those of C. cancellatus. This is a variable species in regard to colouring, as it varies from white to light purple. In its more Western habitats it is generally white, the Eastern forms being blue or purple. For convenience bulb dealers appear to recognise the white form with purple at the base as being the typical one, and for purposes of convenience this may be accepted for gardening purposes. This white form of C. cancellatus is of good substance with flowers of a fair size, although coming short in this respect of the white Dutch Crocuses so familiar in our gardens in spring. It is truly a pretty little flower, deserving a sunny and sheltered place where the autumn sunshine, cool though it is, may strike full upon its flowers. There are several varieties, and any may be safely grown so far as their beauty is concerned.

With flowers such as these, even when October has come, we find much to admire, and others bear them company still. Modest little Cyclamens rise only a little above the earth, which before long will be hidden from sight by the pretty, marbled leaves of this Neapolitan Sowbread. Charming little flowers are these, yearly growing finer here, and never losing favour in our eyes. There are yet dwarf Campanulas, too, mostly in flower for the second time. C. Portenschlagiana is one of these, and it gives a bright tone to the places in which it grows. Nowhere does it look better than hiding some crevice in the rock garden, where its purple-blue flowers and fresh, green leaves seem in keeping with their surroundings. Late as is the season, one might particularise for long. When Sunflowers, Heleniums, Michaelmas Daisies, St. John's Worts, Meadow Saffrons are still with us there is no want of a text on which to found a homily. Their glory is dimmed but not obliterated. It shines still to give us cheer as the garden's year fast runs its course.—S. Arnott.

THE TRUTH ABOUT FRUIT TREES.

I think there has been enough of word-chopping over this subject, and as my literary opponent appears to think so too, we agree with each other on one point at least, if not on more, and doubtless several readers will agree with us both. Let us come to practical points. We neither want a mass of crowded shoots on the one hand, nor gaunt scraggy branches, however straight, on the other. Those are the two extremes, of which there are too many examples, and the truth lies, as usual, between the two.

In the cultivation of trained trees we have, or ought to have, two objects in view—1, the uniform covering of desired space; and 2, the production of fruit. The first condition means that there must be just sufficient branches, the leaves of which can develop fully for covering the space and no more; the second condition means that the wood must be of the most fruitful character. Neither exhausted wood on the one hand, nor young shoots or branches too closely crowded in on the other, can possibly be the most fruitful; but give the young wood a chance, then will it far surpass much that is old, too old, on many trees in the production of fruit. This I have proved over and over again, and most observant gardeners of equal or longer experience must of necessity know the truth about the matter as well as I do.

When I see this truth exemplified, no matter where, of space uniformly covered with productive branches, the sight not only affords me pleasure, but I am apt to think a narration of it, however brief, may be suggestive and instructive, because there are always men who err, regardless of age, in one or the other of the two extremes aforementioned. Besides, I think really good work, by whomsoever accomplished, is worthy of recognition. I was therefore, for those reasons, glad to be able to fulfil a long-standing promise to visit Mr. Kean. In the fine trees he has produced (page 311) I found confirmation of what I believe to be the truth, namely, that the too long and rigid adherence to a particular system of pruning and training, after that system, no matter how satisfactory it was once, has ceased to be so, is a mistake, and that intelligent departures are followed by better results.

Let me cite an instructive case. On page 333 appears an excellent portrait of that accomplished fruit grower, Mr. George Woodward. I happen to be able to tell something of the trees which produce the grand fruit he exhibits—I knew them well when I was a garden lad. The gardens at Barham Court were then a noted home for fruit trees trained in almost every conceivable form, and in no place have I seen trees trained with greater accuracy. I visited the gardens again little more than a year ago. What did I find? The old order had passed away. Many of the trained trees, as such, had reached the limit of their productiveness, and Mr. Woodward, like the practical man he is, perceived it and changed his methods.

Horizontal cordons which had formerly been trained to look so neat beside the edges of the walks had been allowed to grow more in the form of an elongated bush than a cordon. Apples and Pears growing on arches, instead of being spurred in closely each year as in the old days, had short-jointed shoots extending above and around the trellis in all directions, and these were weighted down by grand fruits. I was interested in the trees, and inquired closely about them. Then Mr. Woodward willingly informed me that the fruit obtained under the close pruning system was not abundant enough to be satisfactory, hence the change in their management and the grand results. Special attention was given to keeping the shoots thinly disposed.

The truth about fruit trees is that years ago, and even yet, many trees were, and still are, prevented from bearing a good crop of fruit by over-pruning and training. Observant men began to see the mistake of adhering to the custom of cutting all summer growths back to wood that could not bear, while some of that removed, if rationally treated, would have produced good crops of excellent fruit. This in practice was found to be so. The benefits resulting from the change were made known in conference room, lecture hall, and through the press, and things began to improve. May still further progress be made in the important work of fruit production is the wish and object of—H. D.

[A most commendable wish and desire; and when controversy draws forth such an excellent article as this, from one of the best of gardeners, it cannot be said to be a failure. Not only mere "word-chopping," but much of the thoughtless knife-hacking of many fruit trees might with advantage cease.]

VEGETABLES FOR HOME AND EXHIBITION.

Leeks and Celery.

Not only is the Leek amongst the most useful of vegetables, but it is peculiarly interesting, inasmuch as it is to Wales what the Rose is to England, the Thistle to Scotland, and the Shamrock to the Emerald Isle. Striking by contrast, therefore, are the parts it plays on the one hand as the popular emblem of a country teeming with history, on the other as an important attribute to the contents of a kitchen garden; and though the latter may appear to be less romantic, it is from this standpoint of utility that gardeners have to look at it. For exhibition only the best samples are suitable, and as these can generally be obtained through careful attention to detail in cultivation, the returns given are well worth the trouble expended.

Where the vegetable is required in quantity successional sowings are advised, the first to take place in March and the second in the following month. Though Leeks will flourish fairly well in almost any soil and locality a rich rooting medium is conducive to size, and for whatever purpose they are required, large, sound, silvery-stemmed specimens are always appreciated. A great mistake often made is that of leaving the young plants too long in the seed bed before transplanting, with the result that they become drawn and spindling, with the roots all matted together. As soon as the seedlings are about 6 inches high they should be carefully transplanted in well prepared ground, allowing 10 inches apart if large stems are required, and about 6 inches if this is not the chief consideration. A dibbler is the best implement for planting, and the roots should be inserted as deep as the base of the leaves, only lightly placing the soil in round them. Some growers always plant in trenches the same as Celery, and on light soil the method is a good one; but where the medium is of a retentive nature this is not necessary if a little earth is drawn up to the stems as they increase in size. Water must be liberally applied in dry weather, and the surface soil kept constantly stirred with a hoe.

It is not advisable to leave the best roots out during the winter,

but, on the other hand, to take them up on the appearance of severe weather and store them in moist sand as recommended for tap-rooted vegetables, under which treatment they will keep for some time. Though large roots are in requisition for exhibition purposes, those of moderate size are better for keeping, and therefore careful management in thinning and transplanting is necessary. In this operation lies the only secret in successful Leek culture; weak, half-starved looking specimens are the result of neglect, and sound healthy white stems, prized alike in the kitchen and on the exhibition table, are the reward of prompt and careful attention. Variety among Leeks is somewhat limited, and there is perhaps none to surpass the Lyon for exhibition.

If Celery is not grown well it is better not to attempt its cultivation at all, as the result is disappointing in all respects. The best samples that can be obtained for home use are also the best for exhibition, though, unfortunately, one often sees the first prize card placed on gigantic sticks which have only size to recommend them, as in flavour they are invariably tough, and with very little of that sweet nutty taste which makes Celery palatable. Sound, well blanched sticks of moderate size are always the best to eat, and this is the end that all cultivators should aim at. Thousands of miserable specimens are sold in London every year bearing the name of Celery. The name, however, is a libel, as they will not bear comparison with the well-grown produce that is produced in many gentlemen's gardens. Generally speaking, the metropolis is supplied with excellent vegetables, but Celery is an exception, and it is questionable whether hundreds of people who are in the habit of purchasing so-called Celery every week, know what the real article is like. Quantity seems to be the aim with most market growers, and for some reason or other the crop does not get that close attention to detail that is absolutely necessary to produce really wholesome and thoroughly palatable produce.

To produce good Celery a few simple rules should be rigidly followed. In the first place there must be no check in the growth, or this causes the plants to "bolt" or run into flower, and the result is uselessness. The plants must be kept free from suckers or side growths, or the nourishment requisite to full development is divided into the various channels, and no heart is formed. Then, again, it is a mistake to sow too early, as planting is then often delayed till that check has taken place, which the cultivator should endeavour to avoid. In most gardens early Celery is required either for table use or the summer exhibitions, and for this purpose seeds should be sown of an early white variety at the end of February or the beginning of March. Sow thinly in a propagating box in a temperature ranging from 60° to 65°. When the seedlings are large enough for removal they may be pricked off into other boxes and grown close to the glass in a moist atmosphere or else be transplanted in a hotbed frame. With the advent of genial weather, the plants must be gradually hardened by leaving off the lights, and if finally transplanted in well-prepared trenches an early and useful supply may be obtained.

The middle of March is early enough for sowing for the main supply, and it is a good plan to prick out a portion of the seedlings in a frame that has been used for raising early vegetables, where they can be kept close if necessary, and the remainder will come on for finally planting a little later if pricked out in sheltered position outdoors. If a little manure from a spent Mushroom bed is worked beneath the surface of the soil when pricking out, it will be found that the plants will lift with excellent balls, and suffer little from the removal. It is well when pricking out the tiny plants to imagine what they will be like by the time they have to be removed to the trench, and dispose them accordingly. If grown too closely together in the nursery bed the roots naturally get matted with each other, and a check at the time of planting through excessive damage to these fibres is the result.—GROWER AND JUDGE.

SAXIFRAGA BITERNATA.

DESPITE its utility and great beauty this species, which blooms in the spring, is seldom met with, though it cannot be considered a new plant. It belongs to the section Nephrophyllum, of which the best known representative is the common S. granulata. All the species composing this section are deciduous, and of a more or less bulbiferous habit. S. biternata has, as will be seen from the accompanying engraving (fig. 54), very distinct biternate leaves, which form fine tufts of bright green colour. The flowers are pure white, comparatively large, and are borne on short stalks. Like the other members of the section, S. biternata prefers a damp shady position in sandy peaty soil. It is a native of Spain and Algeria.

If "J. Harrison" desire more information relative to this or any plant we shall be pleased to give it to him, but he must address his letters to 8, Rose Hill Road, Wandsworth, as directed, and *not* to 171, Fleet Street, as formerly.

THE CONQUEST OF CANKER.

WHAT is canker that we should make so fearsome a bogey of it, as Mr. Abbey seems inclined to do? Is it some dread thing that has to be exorcised with yard-long lists of vile chemicals? Let me come honestly and promptly to one pregnant admission: it is the most destructive pest that our gardens and orchards know, and it is far from my intention to throw ridicule or contumely on the patient investigations which our good friend has made, doubtless at the cost of many an hour which others who have reached his years think well to spend in repose. True it is, beyond any reasonable doubt, that no

FIG. 54.—SAXIFRAGA BITERNATA.

other hand of the old practical school could have ferreted out such minuteness of detail, drawn such a series of admirable sketches, and then explained (on page 292) the whole thing in so clear a way that the veriest tyro could understand. But—for a big but there is—there is a tendency to elevate canker into a thing so formidable that only those who can put their hands on a whole laboratory of chemicals, *plus* magnifying power of first 10, then 40, and next a jump up to 400, can feel that they have a chance of coping with it.

We all know about the tablet which is going to sustain an army, but all of us do not know that as a result of some extraordinarily complete and sagacious calculations, a pilule was compounded which, going into one tiny corner of a soldier's knapsack, was yet enough to keep him in brisk marching order, and so full of fight, that the very sight of him was calculated to frighten off a whole regiment. Yes, it was tried, that pilule, the expectant inventor rubbing his hands as he watched its disappearance; but alas! Tommy Atkins was ravenously demanding a beafsteak within a quarter of an hour afterwards, and my Lords have, therefore, decided to keep for the present to the old style of fare.

There is nothing to prevent the amateur scientist from playing pranks with Nature if it please him to do so, and equally there is nothing to stand in the way of his devising a variety of strange and mysterious concoctions if it conduce to his amusement, but plain men who have made canker one of the studies of their lives will need no assurance that their case is not hopeless, even if the sulphates and the sulphides and the carbonates are beyond their reach. What you have got to do is first of all to recognise accomplished facts, and then you are in a fair way of being able to dispense with lens, microscope, and every "ate" and "ide" there is in the catalogue for conquering canker.

Our canker remedy never fails. I am going to pit it boldly against all the finicking or chemically imposing and memory torturing remedies which Mr. Abbey or anyone else can bring forward, and I am simply going to ask that it shall have a fair trial. It is based on Nature – on helping the tree to throw off the blighting influence which has fastened upon it in preference to attempting to destroy the blight itself. You may use barrels of wash, and squirt to your heart's content, or discontent, and you can never effect radical cures unless you do something else as well, and that is to take under your care the vital force for good which is working deep down in the heart of every plant and tree, ever striving to throw off evil, and rise to better things.

Mr. Abbey talks of the efforts made by the tree to drive out the intruder, resulting in the latter becoming firmly seated in the tissues until the tree becomes girdled "and then," he significantly adds, "comes the end." No, there is no such finality. I admit that if the girdling becomes complete the tree is doomed, but that is not because the efforts of the tree to force away the disease have resulted in the secure embedding of the latter. It does not matter how firmly and deeply embedded the diseased tissue may be, it is still possible for the tree to be brought back to perfect health. Why, so far is it from being true that the recuperative efforts of the tree have any hastening effect on its own end, that I know of trees which have woven a complete coating of new bark over huge masses of dead wood, and engulfed them for ever. There is no "end" to the tree; on the contrary, it enters on a new lease of life from the time its efforts at exclusion were so successful that it was able to bury the enemy in the pit itself had dug. I could show Mr. Abbey trees in almost every stage of this fierce life struggle, some with huge gaping wounds, over which the new rolls of bark are just beginning to run, others in which the conquering folds have half hidden the malignant or dead matter, and yet others, again, in which but a small slit remains to be seen, by peering through which the last vestiges of the useless wood may be discerned. There are pounds upon pounds of these hard and lifeless lumps within the internal economy of some of the larger trees, and the latter go on as placidly, as comfortably, as fruitfully, as if every ounce of them was wholesome, healthy, growing tissue.

And what is the secret? Just manure and tar. The former is not the miserable stuff which comes down from the London vestries; but rich invigorating matter from stable and cowhouse, where the animals have good food to eat and sweet air to breathe. The tar is plain Stockholm tar. The manure is put on in the form of a liberal coating, reaching out to the uttermost spread of the branches, and the tar is brushed on after as much as possible of the diseased parts have been cut away. It is a plain process from beginning to end, but commend me to it in preference to all the chemical washes which the wit of man could devise.

By attempting to kill fungi and insects we are engaged in thwarting Nature; by arming a tree against them we are working in harmony with her own beneficent designs.—W. Pea.

HARMFUL AND HARMLESS GARDEN MOTHS.—9.

About this time, when Ivy is putting forth its green bloom, the honey of which invites a crowd of insects both by day and night, those who are cutting its sprays for autumn decoration may come upon a caterpillar of dingy grey, looking like a little bit of stick, but marked on each side with a yellow line. It may have taken to the Ivy for food, but more probably it has sheltered there to await another spring, hybernating, as do several kindred species. We may have made its acquaintance in September, when the caterpillar now and then feeds on the leaves of Roses, and it has been found on Plum, Birch, and Oak, but is not an abundant insect. The moth emerges in June or July, and has been called the willow beauty, also Boarmia gemmaria, the popular name implying that it has been bred from Willow, and that somebody thought it handsome. The colours are not bright, certainly—black, brown, and grey; yet the markings are elegant if examined. Some specimens occur nearly black, as if in mourning. Another in the genus that I have seen about the gardens of Surrey is the mottled beauty (B. repandata), which has really a good title to its name, though a variable moth usually lighter in colour, the waved markings being upon a ground of grey and orange. We notice it on a summer evening, but I have observed it flying by day. During May the caterpillar, which is light yellow dotted with black, may be taken on Plum, Birch, or Hawthorn in gardens. On Wimbledon Common it eats the Bramble and Ling; about the North the Bilberry is frequently selected for food.

The waved umber (Hemmerophila abruptaria) we mostly see in a position of repose, spreading its wings on a paling or outside a house. It is a moth so distinctive with its pretty lines and spots, that, though the colours are not bright, we cannot well forget it when once recognised. There is nothing particularly "abrupt" about this insect, but it is a moth we associate with the arrival of spring. Later in the season its caterpillar is one of the many that are feeders upon the Rose; we know it by its being a "looper," dark brown, having a white ring behind the head, and I could hardly expect a gardener to spare its life, or dismiss it to seek other food. It is stated also to eat Privet and Lilac, and is a familiar species of London suburbs. Around the metropolitan district, but earlier on the wing than the preceding, the small engrailed moth (Tephrosia crepuscularia) visits on April evenings the flowers of beds and borders. It is found in most English counties, also in Ireland. The name was given because part of the pattern on the wings seemed to resemble what is called an engrailment in heraldry, wavy lines of black crossing the grey ground colour. A variety of food suits the brown caterpillars, Fir, Oak, Elm, Poplar, Birch, and other trees or shrubs. Some years there is a second brood of moths, succeeded by autumn caterpillars.

We have all seen some of the emerald moths about gardens, all of delicate texture, slight bodied, their green tints apt speedily to fade, hence their beauty is not exhibited in a cabinet of moths, and a rough wind often damages them soon after emergence. One of the smaller species is Geometra vernaria; the wings are of an exquisite green, crossed by two white lines, head and thorax rather a paler green. It is a July insect, at least so far as I have observed, though it would appear from its name to have been noticed in the spring. The caterpillar feeds on the wild Clematis and on the cultivated species. Like the moth in colour, the caterpillar resting on the leaves is not easily seen; its head is curiously notched on the crown. Another of the emeralds, common amongst the gardens of Middlesex and Surrey, where the caterpillar lives on the Hawthorn hedges, but is seldom seen, is Hemithea strigata, also a summer species. The wings are of a darker green, less liable to fade, and have the margins scalloped. Smallest of the emeralds is the little Iodis lactearia, greenish white, marked with white lines, which often flits past us in the June twilight; the caterpillar is slender and brownish, its food being the leaves of Birch.

The entomologist is familiar with the small group of moths that are called the "waves," of moderate size, most of them showing waved lines on the wings, and the gardener cannot fail to notice some of them from time to time, since they usually repose by day on walls, trunks of trees, and occasionally on leaves of plants, not being easily startled. None of the species is hurtful to cultivated plants, though a few may pass their lives within garden precincts. We may just pick out three that are to be met nearly everywhere. Of the diminutive species we have a good example in the pretty moth oddly named the small fan foot, or Acidalia bisetata, having a central black spot on each wing, and irregular dark brown lines upon greyish brown. Its caterpillar feeds low down amongst wayside or garden weeds, such as the Dandelion and the Knotgrass. Larger, and perhaps the most conspicuous of the wave moths, is the ribbon wave, a mid-summer species, abundant throughout Britain. Its appearance in gardens is accounted for by the fact that the caterpillar lives upon a variety of hedgerow plants, such as Avens, Bird's Foot Trefoil, Chickweed, also sometimes in the low shoots of Willow. This caterpillar is rough like shagreen, being covered with numerous tiny warts, and is dark brown. We at once recognise A. aversata in its winged form by the broad band or ribbon which crosses the middle of all the wings, and which is of an ochreous colour, the rest of the surface being a dull yellow. Then the common white wave, Cabera pusaria, we seldom fail to see every year in gardens near parks and shrubberies, for there seems to be a succession of these moths from June to August. In colour the caterpillar varies much, being grey, brown, or green. It rests on a twig generally, with the body pressed close, and the head also flattened, hence it is not easy to detect.

We pass now to a destructive species, which is the cause of annoyance and loss some seasons, the moth taking its English name from the Currant, but in Latin Abraxas grossulariata, and the Gooseberry, I think, is preferred to either the Red or Black Currant by the caterpillars; the ornamental species is seldom eaten by them. Probably its original food was the Blackthorn, and it has been taken on the Peach and Almond. All of us know the moth and caterpillar too well, both somewhat alike in their colour, if not exactly in markings. The moth has usually numerous black spots scattered over the whitish yellow surface, but very curious varieties occur, some almost entirely

dark, and others pale, with only a few black streaks. It is not a difficult moth to catch, and especially as it often flies by day, the females going from leaf to leaf, depositing but one egg on each. As the eggs cannot be easily found, some have recommended the removal of the leaves from the bushes about the beginning of September, these being burnt. Probably, however, before that date most of the young caterpillars would be hatched; still by this expedient many would be removed, but perhaps this stripping might be hurtful to the bushes. Certain it is that they do little mischief during the autumn; it is after hybernation they are voracious, especially damaging to Gooseberries. About their winter habits Newman remarks, "Each young caterpillar selects a Gooseberry leaf, and makes it fast to its twig by numerous silken cords, to prevent its falling when dehiscence takes place; in the cradle thus fabricated the caterpillar sleeps as the sailor does in his hammock, storms and winds are matters of indifference to him."

This is true so far, but part of the brood hide away amongst dead leaves on the ground, in empty flower-pots, and odd corners; during the winter months many of these caterpillars might be removed by a little search. In the spring they may be shaken off the twigs without difficulty, since when alarmed they swing down from their food, running out a thread of silk as they do so; the agitation given to the bushes should be gentle, otherwise the caterpillars are scattered about, and do not fall into the article held to receive them. Dusting the bushes early in the morning with any of the usual dressings while the dew is on them is effective, and syringing. But for my part, I have always felt there are several objections to the employment of washes containing Paris green or similar poisonous compounds. It is principally where pruning has been neglected that the Gooseberry caterpillar harbours.—ENTOMOLOGIST.

IMPROVING MUSCAT VINES.

I AM sending a bunch of Muscats, cut from a Vine thirty to forty years old. Six years since it was lifted. Previous to that it grew indifferently. It is now carrying at least 30 lbs. of Grapes, or thirteen bunches. Two years come January next we built a new house over the old Vines. Previously the borders were outside. I persuaded my employer to have a border inside as well, and to make the house 3 feet wider. This did away with the front wall, against which in passing through the Vine stems were injured.

We had then to throw 4 feet of soil back for the bricklayers to work. We picked the soil carefully from among the roots; still many got broken. They were matted up at first, but these soon had to be taken off, being in the way of the workmen. Practically the roots were exposed from the middle of January until the middle of March. The house is built on pillars, 4 feet apart. Plates are fixed on these, and screwed together for the house to rest on. In building the pillars some roots which we had managed to save had to be cut out of the way. The house is 90 feet long, with one division.

The inside border was concreted and well drained. The soil from the front was returned, and any mould that was lying about, a few loads of turf from a drain that was being cut, abundance of burnt earth and mortar rubbish were thrown in to compose the inside border. This was rammed as firmly as possible. Last year the Vines started very weakly, but gained strength by the autumn. We pruned to plump buds; they started strongly in the spring of this year, the berries were small till stoning, but swelled rapidly afterwards. The border inside had a slight sprinkling of Thomson's manure and a good dressing with the contents of earth closets (the soil used in these being taken from the burnt refuse heap) and watered in with liquid manure at pruning time, but only that part of the border containing the roots. In addition we gave two light mulchings with litter and another sprinkling with closet manure through the summer, always washing in with weak liquid manure from the home farm, or made from pigeon manure when the farm tank is low. The outside border was dressed with basic slag in February, otherwise it was treated the same as the inside one. I think there is plenty of iron in the soil; in lifting the fruit trees we had to use picks and crowbars to get through it. Next month we rake off all mulching, loosen the soil, and give a good dressing of lime, pointing it in. I have read the Journal since I started gardening, and well remember the article by "Single Handed," When, Why, and How We Manure Our Vines.—S. B. O.

[The Muscat Grapes improved by the methods above described, as well as a bunch of Black Hamburghs from forty-years-old Vines, also renovated, are in all respects—size, colour, and quality—fit for the table of a prince. There were none to equal them at the Crystal Palace Show. Some leaves sent are remarkable for substance and colour. The sound substantial literary fare of "S. B. O." is more satisfying than are columns of pen flourishings by ancient and modern controversialists.]

CATTLEYA DOWIANA.

THIS beautiful Cattleya is yearly becoming more popular, its richly tinted blossoms making it everywhere a favourite. In habit it does not differ much from the rest of the labiata section, but the flowers are quite distinct. In the variety aurea the lip is more highly coloured than that of the type, and this is perhaps the better known form, though there are several sub-varieties more or less distinct. C. Dowiana is a native of Costa Rica, and the first living plants of it that arrived in this country were brought by a Capt. Dow, to whom it was dedicated.

This was in or about 1864, but many years before this the Polish collector, M. Warscewicz, discovered it and sent it home, but the plants died either on the journey or soon after their arrival. The variety was found by Wallis, and since then has been imported very frequently by English and continental nurserymen. Its habitat is not the same as that of the type, but possibly both are found, as well as improved forms, in the same locality. At all events they turn up among the same consignments, so presumably the area is a fairly large one, and each exists in greater or less numbers in every part of it.

The cultivation of all of them is similar. They like plenty of warmth and light when the growth is active, and a decided resting period. It is, in fact, one of the easiest of all kinds to grow in a suitable house, but it is not always as free blooming as one might wish. The plants have the bad habit of starting into growth from the base almost as soon as the young pseudo-bulb is formed, and without the requisite rest the growth does not seem capable of producing a flower, though the pseudo-bulb preceding it was healthy and vigorous enough. To build up a strong, yet at the same time a hard and solid bulb, then, will be the grower's first care.

This he cannot do in a heavily shaded house, or in one always reeking with moisture, without the necessary ventilation, but given the latter in reason, so as to always provide a constant supply of air about the foliage and bulbs, then C. aurea can do with plenty of both heat and moisture. The plants should be suspended within a foot of the glass if possible, and in such a position that the drip from the rafters cannot find its way to the plant. The screw hooks so often fixed to these are about the worst possible arrangement; a brass or pointed iron rod, running the entire length of the house, and screwed to each rafter, being far preferable.

As to compost, good peat fibre and clean sphagnum moss will do admirably, and large pots are unnecessary. If these are large enough to show a margin of about a couple of inches around the plant they will do, or shallow teak baskets nearly filled with drainage suit the plants perfectly. C. Dowiana and its varieties are rather given to damping at various stages of growth, but especially when the pseudo-bulb is about half developed. In the earlier stages this is probably caused by cold water coming in contact with the tender growths, or a larger supply of moisture than is required.

But later on there is often a glutinous exudation from the plant that prevents the scales parting freely from the underlying stems, and this leads to mischief. The flower sheaths, too, are often quite stuck to the leaf with it, and need the application of the budding knife haft to separate them. It appears to be a provision of Nature against the insects that prey upon the plant, but is not required under cultivation, and should be removed by sponging with clean warm water. Newly imported plants, and others in their second or third year, appear to be more subject to it than older plants that have been a longer period under cultivation.

The plants usually arrive in fair condition, and are not difficult to establish. I have not infrequently potted these and C. gigas exactly as received, except that the plants were well examined for cockroaches and other insects, and afterwards thoroughly sponged. As a general rule, however, it is safe to lay them out for a while on a moist stage in the warmest house at command, and to sprinkle them occasionally with tepid water until they plump up a little. Then they may be potted in small pots and allowed a surfacing of moss only over clean, finely broken crocks.

The compost must be added as the plants begin to root, and they are soon for all practical purposes the same as established plants. Thus it will be seen that they do not differ much from the other labiatas in general requirement, but the advice given respecting their being kept dormant after flowering is important. Only last season I saw a fine collection of aurea that had bloomed profusely, the secondary growth notwithstanding, but this does not alter the fact that they are more satisfactory the other way. During winter 55° is a good minimum temperature for the species, with just sufficient moisture at the root to prevent shrivelling.—H. R. R.

Notes & Gleanings

Weather in London.—During the past week several mornings and evenings have brought indications of the approach of winter. On one occasion six degrees of frost were registered, and has severely crippled Dahlias and other tender plants. On Friday evening it rained heavily for a time, but otherwise the weather has been very pleasant and seasonable.

—— Gardening Appointments. — Mr. William Swan, senior foreman at Drumlanrig, has been appointed gardener and estate manager to Robert Gordon, Esq., Chipstead Place, Sevenoaks, Kent. Mr. Joseph Stoney, for the past fourteen years head gardener to Sir Thomas Earle, Bart., Allerton Tower, Woolton, Lancashire, has been appointed head gardener to the Hon. Frederick G. Wynn, Glynllifon Park, Carnarvon.

—— Presentation to Mr. G. A. Bishop.—On severing his connection with horticultural matters in the neighbourhood of Wolverhampton, Mr. Bishop has become the recipient of a handsome testimonial. Besides a splendid gold watch and chain, an address signed by many influential Wolverhampton men was read at a recent meeting called for the purpose. The Mayor made the presentation and read the address, and Mr. Bishop replied in a suitable manner.

—— The Beddington, Wallington, and Carshalton Horticultural Society.—At the annual meeting of this useful Surrey Society, which was held last week, it was stated that, notwithstanding the many Jubilee claims for subscriptions, as well as counter-attractions, the last year's show resulted in a balance of £53. Mr. G. W. Cummins was re-nominated for Secretary, but he stated that as he had given up his appointment as gardener at The Grange, and that his next one might be many miles away, it was with the greatest regret he had to decline the honour and the position he had held from the commencement of the Society. He acknowledged the great help and encouragement rendered him by Mr. Smee, Dr. Cressy, the Committee, and other officers of the Society, and mentioned that recently he had received a letter from Mr. Halsey (Chairman of the Surrey County Council) complimenting him and the Society on the advance made in cottage garden and allotment cultivation in various parts of the county, which advance dated from the Carshalton Show of 1892. The Chairman and others spoke of the able way in which the management had been conducted, and a vote of thanks was heartily passed, as was also a resolution that an honorarium of 10 guineas be awarded to Mr. Cummins in recognition of his services. Mr. W. T. Toogood (late Assistant Secretary) was then elected Secretary, and Mr. C. F. F. Hutchings Assistant.

—— Fantastic Summer Bedding.—Although we have here in sober Britain sometimes indulged in bedding designs that have been fantastic—indeed, rather ludicrous, and always in abominably bad taste—still may we, without any charge of phariseeism being laid against us, yet take some comfort from the fact that we are not quite so far gone in relation to this matter as some of our horticultural brethren across the Atlantic seem to be. The "Strand Magazine" reproduces in the form of illustrations some of the bedding monstrosities from which, happily, so far we have been saved. It is most earnestly to be hoped that no gardener in Britain will think he has a heaven-sent mission to out-Herod the Americans in efforts of this nature. Washington Park, Chicago, seems to be the *corpus vile* for the designs of the florally insane, and that park is nearly rivalled by the South Park of the same town. Gigantic globes, gates, sundials, elephants, a running ape, a man in a canoe, are some of the floral cranks thus presented. It is a gross libel on gardening to term this sort of thing horticulture. We have in some places at home gone perilously near to the ridiculous in bedding designs, scrolls, Jubilee dates, crowns, and diamonds, but at least some little allowance could be made for so remarkable a celebration as that of the Diamond Jubilee, when, too, so many greater persons than gardeners almost ran mad. We may take it for granted that at home at least the craze for fantastic designs and inscriptions has run itself out. Doubtless by the masses they were immensely admired, and the originators were very proud of them. Still that sort of thing is not only not gardening, but it is pandering to sickly sentiment and depraved taste. We can make our summer bedding most beautiful, and because of that there is all the less reason for making it fantastic.—A. D.

—— A Prolific Marrow.—Three large well-ripened Marrows were last week cut from one plant, weighing respectively 41 lbs., 28 lbs., and 16 lbs., or an aggregate weight of 85 lbs., besides several younger and edible fruits being supported from the same source. The variety was Long Green, and grown by Mr. G. Maxey, gardener at The Toft, Sharnbrook, Beds. Surely this is a creditable achievement. Will some reader kindly say what is the heaviest individual fruit on record?—H. T.

—— Lespedeza Sieboldi.—The warm weather of the last few weeks has been most favourable for this plant, and at present it is flowering very freely. From the tender sub-shrubby nature of the growth a frost or two in September sometimes kills the young wood, and consequently the flowers before they open. In seasons like the present, however, the flowers open well, and make a pretty show during the last fortnight of September and first fortnight of October. In winter the growths die to the ground line, but start away strongly again on the approach of spring. During summer the shoots grow 6 or 7 feet in length, from quite half of which the loose, drooping racemes of rosy purple flowers are produced. The racemes spring from every joint on the upper portion of the stem. The lower ones are often 1½ foot in length, and vary from that length to 3 inches on the upper parts. Although a plant which cannot be relied on to produce a good show of flowers every year, it is worth growing (from the lateness of its flowering) in favoured localities.—D.

—— Antirrhinum Hendersoni.—I send you herewith a few spikes of Antirrhinum Hendersoni. I suppose it will one of these days attain its Jubilee. Perhaps some of your correspondents can tell the date of its introduction. But though so long in cultivation it is still certainly the most distinct, and one without which no collection can be considered complete, while for competition it is quite indispensable.—John Forbes.

[Though we have grown this distinct Carnation-flaked variety for years, commencing some forty years ago, we should not have known it from the specimens, because they arrived practically dead. They were sent to Fleet Street without any packing to keep them fresh and firm, rested there over the Sunday, and perhaps longer, then forwarded to their proper destination, which has been prominently announced in two or three pages for weeks. Flowers in other boxes have arrived much in the same sad state from the same cause—delay through misdirection. We regret it should be so, but have done all we could to prevent such mishaps.]

—— Will of the Late Mr. Alfred Sutton.—Personal estate valued at £114,388 has been left by Mr. Alfred Sutton, J.P., who retired from the firm of Sutton & Sons nine years ago, and who died at Greenlands, Reading, on August 7th, aged seventy-nine years, and of whose will, which bears date January 31st, 1895, the executors are his sons, John and Herbert Sutton, power being reserved to grant probate also to the widow, Mrs. Ellen Sutton, to whom he bequeathed £1000, his furniture and household effects, greenhouse plants, and outdoor effects, and horses and carriages, the use and enjoyment of his freehold house at Reading, and the income during her life of his residuary estate, which, subject to Mrs. Sutton's life interest, he leaves in trust to pay after her death £12,000 in 2¾ per cent. Consols, and £6000 in 3 per cent. Local Loan Stock to each of his three daughters, Alice, Ellen, and Edith, and £7000 each to his five sons, John, Samuel, Francis, Edwin, and Henry, and £10,000 to his son Hugh Reginald. The ultimate residue of the estate is to be in trust in equal shares for his six sons, as having admitted his son Herbert to partnership in his business, he deemed it unnecessary to make further provision for him.—("Morning Post.")

—— Grapes and Asters at Swanmore. — Grapes inside, and Asters out, are two admirable features at Swanmore just now. A late house of mixed Grapes is something to be proud of, especially as the fine crop, which contains many prize bunches, is produced by closely spurred Vines that were planted nearly twenty years ago. They seemed to be embued with all the vigour of robust five-year-olds. It is noteworthy as showing the kind-heartedness of the owner of these Grapes, W. H. Myers, Esq., M.P., that he will neither have them consumed in his own house nor sold. They are set aside for the sick poor, so that these grand Grapes will find their way into the humblest of homes, to soothe and comfort those who need them most. As to the Asters or Michaelmas Daisies, there seems to be quite a museum of them, and as growing in the narrow boundary border in one of the hedge-enclosed sections of the garden, they present a charming, diversified, and most elegant appearance. This is, no doubt, one of the finest collections of these dainty autumn flowers in the kingdom. As Chrysanthemums are not "in," Mr. Molyneux seems to be dividing his affections as equitably as he can between Asters, Grapes, and turkeys, and all are certainly both numerous and fine.—A Caller.

—— NATURE.—On and after Tuesday, October 12th, the editorial and publishing offices of "Nature" will be removed to St. Martin's Street, London, W.C., to which address all communications should be sent.

—— CRYSTAL PALACE SHOW.—In our report of the miscellaneous exhibits at this show we omitted the mention of the stand of Messrs. Wood & Son, Wood Green. This comprised the many horticultural sundries for which the firm is so widely known.

—— LATHYRUS PLATYPHYLLUS ALBUS.—L. latifolia alba of some gardens. This plant makes a fine specimen for the herbaceous border or for dotting singly on lawns, after it gets established; and shows to the best advantage when so treated and staked with ordinary Pea sticks. A specimen here, which flowered a short time since, measured 7 feet in height by 5½ feet in width, and was much admired when covered with its trusses of pure white flowers; it is about six years old. This and the other varieties of L. platyphyllus are sometimes found rambling over low fences, or trained against a wall; but the individual beauty of the plant is not seen to the best advantage in such positions, as it falls about so easily, and the tendrils and growing points do not show themselves. It is readily grown from seed, but only a small percentage comes true; the others revert to the type, which is not so desirable as to colour. The plant flowers the second year from seed, and should be tested in nursery beds before planting in a permanent position, as it is a deep rooting subject, and not easily removed after it gets three or four years old.—W. H. DIVERS, *Belvoir Castle Gardens, Grantham.*

—— EMPSON'S EXHIBITION CARROT.—I send you a sample root of this remarkably fine selection of the intermediate type of Carrot. It is a fair representative of what resulted from a small sowing made last spring in conjunction with various others, both English and French. The trial was on very poor sandy soil at Englefield Green, and was purposed not only to test varieties, but also the capacity of such soil to produce Carrots. The result in all cases was very satisfactory, whether of Early Gem or French Blunt-rooted; Early Nantes, Scarlet Model, or French Half-Long; James' Intermediate or Red Chantenay; New Intermediate, Matchless, or French St. Valery; Long Surrey, and some others. Seed of the Exhibition Carrot was given me for trial by Mr. Empson, with a result quite surpassing any other stocks, the produce being wonderfully fine and good, very clean, and good colour. Evidently it is a very superior selection. The sample root sent has 14 inches of edible flesh, and 2 inches of root points. It is 10½ inches in circumference, about 1½ inch from the crown, and tapers to the point perfectly. Finally, it weighs 1 lb. 13 ozs. It must specially be borne in mind that the soil was very poor sand, but deeply dug. With such a Carrot stock what remarkable possibilities are there in making much of the poor sands of the kingdom immensely productive. Even taking the average roots at 1½ lb. on such soils, and allowing one root per square foot, that would equal some 260 per rod, or a weight of 390 lbs., that is 3½ cwt.; that at per acre would give a bulk of over 27 tons. Surely that would be remunerative.—A. DEAN.

—— UNITED HORTICULTURAL BENEFIT AND PROVIDENT INSTITUTION.—The annual meeting of this popular gardening charity was held on Tuesday evening at the Holborn Restaurant, under the presidency of Mr. H. B. May of Edmonton. The gathering may be termed a distinct success, as there were upwards of 100 members present. After the repast and the health of her Majesty having been drunk, the Chairman proposed the toast of the evening—"The Society." In the course of his remarks he called attention to the fact that the Society had been started by gardeners, and had always been under the control of gardeners. He called the Society a Democratic one, and spoke at length upon its growth, both in membership and in the funds, and was thus enabled to extend its field of labour and become of more and more benefit to gardeners throughout the country. Attention was called to the various funds of this admirable Institution, with special reference to the Convalescent Fund, to which the speaker announced Mr. N. N. Sherwood had sent a donation of 5 guineas. Needless to say that the toast when put was received with acclamation, and with it was coupled the name of Mr. J. Hudson. Than he no one knows better how the Society stands financially, for he has been one of the most industrious of treasurers. His remarks were brief, but teemed with interesting facts relative to the Society, and concluded with an appeal to the gardeners present who were not members to become so then and there. The remainder of the toasts were received with the most unanimous enthusiasm. Amongst the speakers, besides those named, were Messrs. Nathan Cole, George Bunyard, G. J. Ingram, Peter Kay, J. H. Veitch, and C. H. Curtis.

—— PHOTOGRAPHS.—By an inadvertence we did not name the photographers who took the negatives from which our reproductions of Messrs. G. Bunyard and G. Woodward were taken. That of the former was from a photo by Mr. Sawyer of Maidstone, and that of the latter from one by Messrs. Clarke & Co. of the same town.

—— HESSLE GARDENERS' IMPROVEMENT SOCIETY.—The opening meeting of the session was held on Tuesday, October 5th, Mr. Geo. Picker (Hesslewood) in the chair. A paper was read by Mr. Akester, gardener to E. Goddard, Esq., North Ferriby Hall, the subject being "Weather and its Influence on Gardening." The essayist pointed out to what an extent gardening was influenced by winds, frost, sun, and rains; also the manner of forecasting. At the conclusion of the paper questions were invited, and the masterly manner in which the essayist answered them showed that he had the subject fully under control. The syllabus of this session is one of the best the Society has had, and contains essays by many prominent members of the horticultural fraternity. Several new members were enrolled, and altogether this session bids fair to be as successful, both financially and otherwise, as any previous one. A vote of thanks to the essayist and the chairman terminated the meeting. —G. W. G.

—— RUDBECKIA GOLDEN GLOW.—We have been much pleased with this novelty this season, and consider it altogether the finest herbaceous plant for border use sent out in recent years. It is quite distinct from Helianthus multiflorus in that it flowers fully a month earlier and is past when the latter begins. The long-stalked flowers are useful for cutting, and are smooth-stemmed and not so unpleasant to handle as those of the Helianthus. It is also perfectly hardy, a strong point in its favour, as the Helianthus multiflorus cannot be relied upon every year and often winter kills, so that it needs protection to make sure of it. The variety Golden Glow appears to be a form of Rudbeckia laciniata, a rather weedy plant and suitable only for semi-wild situations. This double form is free from the objectionable weediness, and its only fault is in the weakness of its stems, which it is necessary to stake when the flower buds begin to form. Otherwise it is an ideal plant for the border.—E. O. ORPET (in "Garden and Forest").

—— LOUGHBOROUGH GARDENERS' IMPROVEMENT ASSOCIATION.—The first annual report and balance sheet of the Loughborough and District Gardeners' Mutual Improvement Association, which were recently placed before the members, have been sent to us by Mr. D. Roberts, the Hon. Secretary. It is apparent from the Committee's report that an excellent start has been made, and the papers that have been read by competent men at the monthly meetings must have been of material benefit to all who have listened to them. The balance sheet is equally satisfactory, there being a substantial sum on the right side. We congratulate the Society, and trust that the success it has achieved in its first year will be more than maintained in the future. Mr. D. Roberts, Prestwold Gardens, Loughborough, will be glad to furnish particulars to prospective members. In connection with the meeting herewith alluded to an exhibition of fruit was held, and this appears to have been a most creditable affair. Mr. A. H. Pearson, of Chilwell, gave an able lecture on "Fruit Culture."

—— HASSOCKS NURSERY.—An interesting ceremony took place on October 6th, at Messrs. Balchin & Sons' Nurseries, Hassocks. Mr. Richardson, the much-respected manager, was presented with a handsome inscribed timepiece by the employés as a wedding present, also a case of silver spoons, which came as an agreeable surprise to the recipient. We wish him long life and happiness also. Coprosma Baueriana variegata as a decorative plant grown at Hassocks is most valuable. Pyramids 2 feet high and as much through are very striking, with their bright golden and glossy green foliage. Amongst the many novelties in the nursery borders of hardy trees and shrubs which attracted my attention were bushy plants about 2 and 3 feet high and as much through of Coryopteris mastacanthus blooming most profusely. The flowers are a bright azure blue in colour, and are borne in axillary globose heads. It is well worthy the attention of planters. Leschenaultia biloba major grows luxuriantly, as also do Boronias serrulata, megastigma, clatior, and heterophylla. These will doubtless be seen at the Temple Show in quantities in combination with some of the old favourite Ericas.—A. OUTRAM, F.R.H.S., 7, *Moore Park Road, Fulham.*

EDITORIAL NOTICE.—It is particularly desired that all communications, parcels, catalogues, and newspapers intended for the EDITOR, be sent direct to 8, ROSE HILL ROAD, WANDSWORTH, S.W.

THE ROYAL HORTICULTURAL SOCIETY'S COMMITTEES.

Now that the summer flower shows are over, and before the managers of the various horticultural societies throughout the country begin arranging for the future, I think the moment is opportune for bringing under the notice of the horticultural public a matter which is exercising the minds of not a few horticulturists and others. The matter referred to is the composition of the Committee of the Royal Horticultural Society, the members of which are drawn almost, if not exclusively, from London. It will not be urged that London contains the only leading lights in the horticultural world; while, on the other hand, it will be readily admitted that in the provinces are to be found many men who are capable of rendering splendid service in the sphere; and my only object in drawing attention to this question is for the purpose of inducing the executive of the R.H.S. to approach the leading horticultural societies in the country, inviting their co-operation; and this could be effected by the provincial societies nominating, say, a couple of their members, to act upon the Committee of the R.H.S., whereby a thoroughly representative council on horticulture would be secured.—R. V. M.

[This is by no means a new proposition. There are metropolitan horticulturists who agree that, consistently with practical working, the wider the field from which committeemen, who are Fellows of the Society, are drawn the better. Provincial capacity will, no doubt, be admitted unanimously; still there may perhaps be difficulties in the way of carrying out the proposition of our able correspondent, who resides far beyond the metropolitan zone. Can he favour with a list of what he regards as the "leading" horticultural societies of the country?]

HISTORICAL NOTES ON VINES.

From the time that Noah planted his vineyard, every heathen nation seems to have contended for the honour of claiming as its own the distribution of the Vine and its benefits, and deifying him accordingly. The Egyptians, of course, naturally awarded the palm of its discovery and institution to Osiris; the earliest Italians to the great god Saturn; whilst the Greeks insisted that Bacchus, the god of wine, as his title almost implies, was its founder, or at least that he brought the vinous plant from Arabia Felix, commiserating and softening the triumph of his arms by leaving it still as a legacy to the conquered. Still, it will be very naturally asked, Of what country was the Vine originally a native? This question is more easily put than satisfactorily answered. The contention among the cities for being the birthplace of Homer pales into positive insignificance compared with the struggle for supremacy in this great honour amongst the nations of the earth.

Chaptal, who gave great attention to this question, and examined the various claims in a philosophic spirit, makes his award in favour of Asia, that fertile farm and garden whence so many cultivated fruits, vegetables, and even grasses were poured into Europe, as from the home of plenty, together with civilisation and the arts. This is doubtless true, but then Asia is a very large division of the globe. Many give a special preference to Syria. Michaux found the Vine in the woods of Mazanderam, and Olivier beheld it growing in all its attractive beauty of spreading foliage and fruits in the mountains of Koordistan. Pallus saw it near the Black and Caspian Seas, growing without any aid save that of Nature. The Kishmish, a peculiar stoneless variety of the Grape in Eastern lands, is considered by some to be a native of that part of Persia lying on its gulf. In Beloochistan, still farther to the east, the Vine with its tendrils clings to the northern shores of the Arabian Sea. The base of the Parapomisan Mountains is rich with it, blending its clusters with those of the Fig and Olive, and it extends to Cabulistan, where it mingles in friendly proximity with the Apricot and the Peach. The forests of Anatolia and Karamania enshrine it: and Armenia, where Noah may have found it, abounds with the Vine. In a word, there is strong evidence in favour of Persia being its original habitat, and that also is a locality where it has never been neglected, for Khuzzlebush does not seem inclined to lose the privilege of possessing it by lapse of usage, and even beats the European in imbibition, for the wine of that country does not seem to have more effect upon the children of the Sun than upon any vessel, even in their household use.

Sickler traces its gradual immigration and introduction to Egypt and Sicily, and it is more than probable that the Phœnicians introduced its culture into the Grecian Archipelago, Greece, Italy Provence, and Marseilles. The ancient Romans in the days of their political infancy had other sterner and more sober duties to attend to than the cultivation of the Vine, and the libations of milk instead of wine ordered by Romulus for a time necessarily discouraged its cultivation. The nymph Egeria though, certainly it would appear, seems to have given the Emperor Numa Pompilius a hint that a little wine would be a welcome addition to their interviews, for although he forbade the use of wine at funerals, he permitted libations to be made to the gods of well-made wine, thus directing anew popular attention to its cultivation. But wine was certainly scarce for a very long time in Rome, and according to an old story, even in the days of Lucullus only a single draught was allowed at dinner. The time was close at hand, though, when this abstention from wine was to rapidly change into the other direction at the Roman banquets.

This country, there is little doubt, owes the presence of the Vine to the Romans. It does not appear to have been in existence here in the time of Agricola, but the subsequent increased intercourse could hardly fail of introducing it. There is an edict of Probus still extant allowing Gauls and Britons to cultivate the Vine. The Venerable Bede makes mention of several vineyards in his time, and the City of Winchester was long supposed—though in uncritical days it must be allowed—to have received its name from the Vines for which in early times it certainly was famous. The Normans called the Isle of Ely the Isle of Vines, and its Bishop, soon after the Conquest, appears to have received tithes in wine to the amount of several tuns annually from his diocese. Vineyards are frequently mentioned in the Doomsday Book. The Sussex vineyards, near Arundel, the property of the Dukes of Norfolk, from whose produce many pipes of good Burgundy wine were made, shows to what an extent the cultivation attained.

The Marquis of Bute has of late years, on his estate near Cardiff, experimentalised on rather a large scale in the renewed cultivation of the Vine for wine making. It is reported that his wine is excellent, but it does not, I believe, come into the market. In conclusion it may be observed, that although the growth of Vines in the open air can hardly be made profitable for the dessert table, there is a fine industry capable of development for their cultivation for wine making ready to our hands. —Wm. Norman Brown.

CINERARIAS.

When it is grown well this flower is one of the best for the early summer decoration of the greenhouse. When poorly grown it is a most unsatisfactory plant. There is only one other plant that I call to mind that is more subject to attacks of the green fly, and that is the Pelargonium. Put either of these plants in a greenhouse where not a green fly has been seen for weeks, and one need not be in the least surprised to find aphides by the dozen on them inside of two days. Some flowers are improved by doubling, but the Cineraria is not up to date, and I see but little prospect of improvement in this respect.

One of the chief charms of the Cineraria, says a writer in a transatlantic contemporary, consists in the beauty and clearness of its markings, and this beauty disappears when the flower becomes double. At least, such has been my experience with it; but all do not think alike, for a friend of mine prefers the semi-double sorts, he tells me, and he prophesies great things for the future of this flower when single varieties are relegated to the background.

It will be noticed that I have spoken of the Cineraria only as a spring or summer bloomer. It was formerly brought into bloom largely in the winter, but we have so many fine winter flowering plants of easier cultivation, that I have adopted the habit of growing it only for the decoration of the greenhouse at a time when there is a dearth of other flowers. For late spring and early summer flowering I sow seed about January, but for winter bloom it should be sown in July or August. I use shallow boxes filled with light soil, sifting a little soil over the seeds after they are scattered as evenly as possible. Then I press all down with the palm of my hand, and place the boxes in a warm place where they can be kept moist until germination takes place. Never overwater or keep the young plants too warm. If this is done they are pretty sure to damp during the first stages of growth. My experience has been that the Cineraria does better when kept in a moderately cool temperature than in a warm room.

As soon as the young plants have made their second or third set of leaves, put them into small pots, providing drainage that will prevent the mould from retaining more than enough water to keep it moist all through. The best soil I have ever had was composed of turfy matter from old sods and leaf mould, one-third each, and one-third old perfectly decayed manure and sand in equal parts. The soil need not be made fine, but it should not be left loose in the pots. Watch the plants, and as soon as the roots fill the pots they are in, shift to pots one or two sizes larger. Be sure to soak the pots they are put into before using, and see that the drainage is perfect. Too much care cannot be taken about this.

In growing plants through the winter and spring months, great care must be taken not to keep them too close, or they will not be strong and vigorous. Admit air freely on all pleasant days, being careful, however, to keep them out of a draught, and do not give too much water. Heat and moisture induce too rapid and weak a growth where there is little fresh air. The aphis will soon destroy the plant if not interfered with. I find nothing more effective than a solution of sulpho-tobacco soap, and dip the plants in it. This dries on the leaf, and the aphis will not remain. But constant care is necessary, for the pest will soon be back. The plants can be dusted occasionally, while moist, on the lower side of the leaves with tobacco dust, which will adhere for some time.

When flower stalks appear give liquid manure semi-weekly, if it can be had. The Cineraria is not worth keeping after it has given one full crop of flowers. By cutting off the fading flowers some additional ones can be obtained, but they will be greatly inferior, as a general rule, to those first produced.—E. E. R.

A MINIATURE VINE BORDER

(With Results).

On page 281, September 23rd, reference was made to an instance of rapid success in Grape growing. Mr. W. Neild, as then stated, appeared to be no advocate of a large and deep root run for Vines. An intimation was also given that we thought a crop of Grapes could be shown worthy of the name as produced by a Vine in the smallest border on record. Our readers have now an opportunity of judging for themselves, and if a healthier Vine bearing a better crop of Grapes has been seen growing in a quarter of a cubic foot of soil we shall be glad to have particulars of it.

The variety shown is Gros Colman. Others similarly grown were Black Hamburgh, Madresfield Court, and Muscat of Alexandria. The bunches on each Vine were reduced to six, and all of them did equally well except the Muscat of Alexandria, which had a number of seedless berries, which Mr. Neild attributed to the frequent supplies of water necessary to maintain the small quantity of soil in a moist condition.

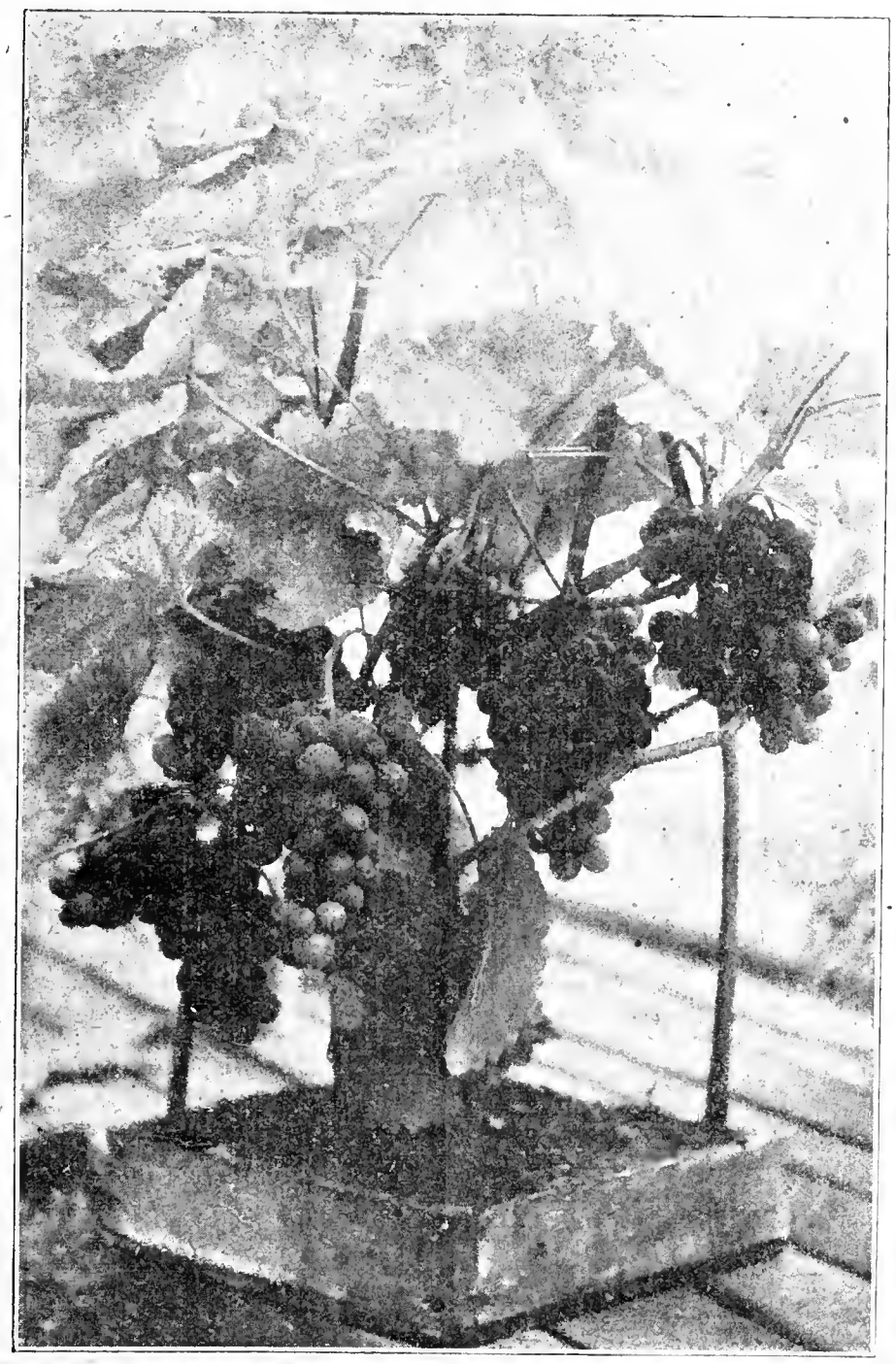

Fig. 55.—A Miniature Vine Border.

In answer to inquiries on one or two points, and for a few particulars, Mr. Neild has favoured with the following reply :—

"The box in which the Vines are growing is exactly a foot square, and 3 inches deep. There has been absolutely nothing done to provide a larger rooting space that what is contained in the box. The box stands on the stage shown in the photo, in the house in which it has been grown from youth to maturity, and the nearest soil is from 3 to 4 feet below the box. No rooting through has ever taken place. My object was not to try to deceive, but to demonstrate what a small quantity of soil a Vine could be fruited in.

"The fruit is colouring well for the variety, and the berries, on an average, measure 3½ inches in circumference. The leaves (of which I send a sample) are large, and have good substance. The compost used for this Vine is similar to that of the Muscat border described on page 281.

"It need scarcely be said that constant attention to the watering and feeding of the plants was requisite. The food employed was good farmyard and stable liquid manure, with an occasional application of nitrate of potash and nitrate of soda."

Mr. Neild with the above information sent us a leaf of the Vine. It was healthy, of good substance, measuring 10½ inches from the top of the upper lobe to the point, and was 9 inches in width. We therefore requested that, if practicable, the different parts of the Vine, also the soil, be accurately weighed. This has been done with the following results :—

Actual Weight of Vine and Fruits.

	lbs.	ozs.
Six bunches of Grapes (Heaviest bunch, 1 lb. 12 ozs.)	7	8
Weight of leaves	0	10½
Weight of stem, laterals, and roots	1	3
	9	5½

The weight of the soil at the time the Vine was removed, and consequently in the ordinary damp state, was found to be exactly 15 lbs. It will thus be perceived that the Vine with its fruit was more than half the weight of the soil in which it grew, and this represents what we call a small Vine border. Only by the best of attention and judgment in watering and feeding could such results have been achieved as represented in the illustration.

A COUNTRY VISITOR'S JOTTINGS.

Horticulturists certainly have abundant change in their occupation, and the varying forces with which they have to contend never permit their employment to become monotonous but even the men who are most devoted to their calling need a change of scene occasionally, the opportunity for which is most fittingly afforded when some great event connected with gardening takes place in the metropolis or the large provincial towns. Gardeners imbued with the true spirit of progress must ever be learners, and whether they are visiting their neighbours or journeying to some distant show, this desire to pick up new ideas, or to place old ones in a fresh light, should be the chief inducement. It is invigorating to the mind also to exchange thoughts and experiences with one's compeers in other districts who may have to work under totally different conditions, and, in consequence, have to modify their practice greatly. It is pleasant to see old friends, and possibly to make new acquaintances, to hear of men steadily progressing on the road to success, and of others who have, by patient perseverance, overcome many difficulties.

So it is that exhibitions become to gardeners something more than a display of produce; they are educational and stimulating, and wise indeed is the employer who, knowing he has a discreet gardener possessing the ambition of excelling in his calling, encourages him in exhibiting, or at least permits him to visit the principal shows, with instructions to "put his expenses in the book.' I have never known such generosity abused; nay, more, in the majority of cases it is repaid with ample interest in increased energy.

The Royal Horticultural Society's Fruit Show at Sydenham attracted large numbers of provincial practitioners to the great Paxtonian Palace, and as one who has not had the opportunity of visiting the metropolis for a long period perhaps may be permitted to jot down a few of the ideas and impressions resulting from my journey. Time was short, but a visit to London without a call at Covent Garden Market would seem strangely incomplete, for even those who have not to contend with the difficulties of selling produce must always find much to interest them in this wonderful emporium. Wonderful it does most assuredly appear on a close acquaintance with the trade there transacted: the enormous quantities of fruit, vegetables, and flowers which pass through it week by week, the numbers of individuals, directly or indirectly, concerned in growing, conveying, and selling its supplies, would furnish an amazing record. His Grace the Duke of Bedford has published one of the most interesting books of the present time in his "Story of a Great Agricultural Estate;" but what a work would be the "History of Covent Garden Market," not as a record of the owner's receipts and expenditure, but as tracing the development of the trade in home and foreign garden produce. It would be rendered, in fact, an epitome of this trade in the whole of Great Britain.

The season has been an unfavourable one for hardy fruits we all know only too well, yet in the market, as far as could be judged by the huge piles of baskets in all directions, both Apples and Pears would seem to be abundant, but the consignments cover a wide area, and therefore yield

but little evidence as to relative abundance or scarcity. As regards the quality, in far too many instances there could, however, be no mistake. Hundreds of baskets of various sizes, bushels, and sieves, in all their complications of varying dimensions and weights, were exposed for sale, displaying unsorted, inferior, bruised, and damaged fruits that could not be regarded without a shudder. Yet this was all British produce. Side by side, in some cases, were neat boxes of Pears or barrels of sound, even Apples, all affording evidence of the greatest care and thought. This was the foreign produce. Is it surprising that the purchaser should prefer the latter? and would it not be wiser to take a lesson from our foreign competitors than to sigh over the difficulties of obtaining good prices, when the contrast under present circumstances is often so much against our own produce? I am aware that certain salesmen will deal in nothing but the best British fruit, properly sorted and packed, wherein they have done great service to many cultivators, who have been forced to learn better methods. But the majority, unfortunately, are not so considerate, or they do not occupy such an independent position that they can refuse business of an unsuitable character.

These matters have been dwelt upon repeatedly in the pages of the Journal, but my excuse for referring to them must be found in the fact that, visiting the greatest market of its kind in the kingdom after a considerable lapse of time, I was much struck with the evidence, so startlingly plain, that British cultivators have yet much to learn besides the art of growing good produce. The contrast, too, was all the more remarkable because within an hour the display of handsome fruits at the Crystal Palace could be reached, and there the credit of our brethren was well maintained, proving yet again what has been so often proved before – namely, that the British cultivator at his best is second to none in the essentials of his art as a grower pure and simple. Why some should fail so deplorably in other respects is consequently the more regrettable.

Perhaps the ladies will teach us a lesson, for now they are entering the ranks as horticulturists we must try to recognise them as friends, and not necessarily as rivals. In what may be termed the "fine arts" department of gardening, wherever taste, neatness, and methodical care will tell, they may be able to teach by force of example what many seem slow to learn. The young gardeners of the future will have a rather agreeable time if they are to be instructed by some of the fascinating feminine horticulturists now being trained at certain establishments. Royal Kew has found employment for some of the ladies, and several, I know, are already in charge of establishments in various parts of the country. There is no question that women and girls can render substantial service in many departments. In the gathering, sorting, and packing of fruits, and such vegetables as Peas and Beans, for instance, many market growers have found their labour more economical and efficient than that of men and boys; and when it comes to flower gathering and packing the females have all the advantage. These thoughts were mostly suggested by two observations on the occasion of my visit. One was that in a certain well-known old Strand restaurant, where hundreds of horticulturists have foregathered at different times to refresh themselves, and where the same men waiters had attended to the wants of their customers from time immemorial, I found the whole system revolutionised. Our ancient waiters had entirely disappeared, their places being taken by "neat-handed Phyllises," and "Hebes." The other matter was the exhibit at the Palace from a horticultural college, where so many ladies have been trained, which displayed a tastefulness and neatness that seemed to be the effects of their presence.

Into the details of the great show I shall not attempt to enter, your able reporters have done that most thoroughly, as they always do; but I shall touch upon a few outside matters that attracted my attention. First, it occurred to me how imperfectly all the fine fruit shown conveyed any idea of the cropping qualities of the different varieties, especially in a season like the present. It is possible by going over a couple of dozen Apple or Pear trees to select twelve extremely fine fruits, even in a bad season; but whether it is worth growing twenty-four trees to get twelve fruits of a pound or a pound and a half, such is a matter of opinion. If one has to supply a large household, or sell the produce, we can soon decide the point. I should like to see a class or classes introduced for the entire produce of a young tree, say from three to six years old; this would convey some valuable information which all would be able to understand and appreciate. The prizes should be substantial, and the crop certified by a witness. In a series of years the Royal Horticultural Society would accumulate a number of facts illustrating the bearing qualities of different varieties under varying conditions that would be of great service.

One notable improvement is observable at these shows, and that is in the arrangement of fruit exhibits for effect. Very tasteful displays are now produced, very different from the formal array of plates which has prevailed for so long at most exhibitions. Mr. Owen Thomas has set several admirable examples in this direction, and his collection at the Palace well showed how the attractions of an exhibition can be increased in this way. Groups of fruiting trees are also very beautiful, and the Sawbridgeworth specimens were strongly in evidence. This is a feature of such shows that might be extended with advantage; but except where orchard houses exist few private gardens include collections of Apples or Pears in pots, and the cost of transit would be heavy, apart from the risk of loss of fruits on the way.

With regard to varieties of special interest, I fear my notes would take too much space if transcribed now, therefore I will trouble the Editor with them for another issue, if he will allow me to do so. One more observation, however, I should like to make. I missed, because I did not know of, the Conference. I saw no bills. Can it be that the R.H.S. does not care whether visitors attend or not, so long as matter is obtained for its official *Journal*?—A Countryman.

SCHIZANTHUS PINNATUS.

This is one of the freest flowering annuals we have for pot culture. It is usually employed for the spring decoration of the greenhouse, where it blooms for a considerable period. A few plants in 6-inch pots, when well grown, afford numbers of useful sprays of butterfly shaped flowers, chiefly lilac or rose coloured. Some are beautifully spotted.

The plants grow to about the height of 2 feet. They may be allowed to form one main stem, which branches laterally, and forms a pyramidal specimen. The culture is simple. Seeds should be sown thinly in pots or pans in August or September. When germination has taken place, the seedlings must have light and free ventilation on an airy shelf in a cold greenhouse or in a frame. Prevent the seedlings touching each other while in the young state, so as to induce them to advance slowly and sturdily. When about 2 inches high each plant will be ready for placing singly in a 3-inch pot. Employ a compost of loam, leaf soil, sand, and a little charcoal crushed fine. In potting place the plant low down, the bottom leaves being allowed to touch the soil. Pot firmly, but in proportion to the amount of roots each plant has. Those with few roots should be potted more loosely, and if necessary in smaller pots. Place a light neat stake to each, so that the plants may be maintained upright.

Undoubtedly the best position for the plants from the time of potting is on a shelf close to the glass, where unobstructed light reaches them, and cool air circulates about them. Growth will be carried on slowly. This is of more advantage for the later culture than encouraging a tall rapid growth early in their career.

Watering must be managed so that the soil continues moist but not unduly wet. It is more desirable that the soil becomes slightly drier than otherwise during the dull dark period of November and December. The best temperature for them is one 45° to 55°, the latter being the highest advisable, in order to prevent drawing or weakening.

January is the best period to pot the plants finally into blooming pots. The advantage of having plants with good balls of roots and a limited extent of growth above the soil will now be obvious. Rooting power once secured, the vigorous advance of the plants afterwards will proceed. A similar compost as before recommended, with the addition of a fourth of decayed manure, will prove suitable. Six or 7-inch pots are large enough. Crock them moderately and carefully, placing over the crocks a little moss or fibre, with a slight dusting of soot. Cover that with a layer of compost, and then introduce the plant. Work in more soil, and press firmly round the ball of roots, using a blunt stick for the purpose. This being the final potting, it is important to compress a fair share of rich compost within reach of the roots. Firmness induces the multiplication of fine rootlets, and these are essential to a continued healthy condition.

Still give the plants a light position, but it may be necessary for them to be at a greater distance from the glass, owing to the introduction of longer stakes. Should it be necessary, however, to keep the plants from becoming unduly drawn, it would be no great difficulty to give a fresh stick as the plant required, withdrawing the old one, and inserting the longer one in the same hole.

Soon after the plants have become established in their final pots, side shoots will commence to develop. Plenty of room must then be afforded to each so as to induce a regular and even shape. If strict attention can be given and continued, it would pay to neatly tie out the lower shoots close to the rim of the pot. Other shoots might be trained at regular intervals above, the whole forming a pleasing pyramidal shape and an attractive object when in bloom. Those who object to stiffness and formality may simply insert one stake in the centre of the pot, train the main stem to this, and allow the side shoots to develop in a free natural manner.

As the season advances and the time for flowering approaches, the plants, pot-bound with active roots as they will be, must receive assistance from applications of liquid manure, Clay's fertiliser, or similar artificial compound. Stood among other plants in the greenhouse or conservatory in spring, the Schizanthus has a light and elegant appearance. Whether for rendering useful sprays for cutting or adding to the attractions of a group of flowering plants it is worthy of culture.—E., *Gravesend.*

Cratægus Pyracantha Lælandi.—The various forms in which this superb berried shrub can be grown gives it special value to the planter. As a climber, or rather trained against a building of almost any description, it is in berry very attractive and beautiful. Grafted on tall stems of any common variety it makes singularly effective standards. It can be trained, by using the pruning knife, into pyramidal form, thus when in full fruit becoming on a lawn as a specimen a brilliant object. It can be planted on the crest of a mound and then allowed to branch out freely and somewhat drooping, for the great weight of fruit carried will bring the branches down. Probably there is no berry-producing shrub, not even the Holly, that is so effective when in fruit as is this evergreen Cratægus.—**A. D.**

National Chrysanthemum Society.

A meeting of the Floral Committee of this Society was held on Tuesday last, Mr. T. Bevan presiding. The following novelties were awarded first-class certificates.

Madame Geo. Bruant.—An immense Japanese, with very long florets, drooping and slightly intermingling; colour pale rosy purple, dark towards the tips, centre lighter (Messrs. Pearson & Sons).

Vicomte Roger de Chezelles.—A large Japanese, centre florets incurving, golden yellow, shaded bronze, reverse silvery yellow (Mr. Godfrey).

Ambroise Thomas.—Japanese, decorative, pretty medium sized flower, with pointed thin florets (Mr. Wells).

Several others were shown in good form, Soleil d'Octobre, a pure yellow Japanese, being commended.

Dundee Chrysanthemum Society.

On this, the Diamond Jubilee of her Most Gracious Majesty Queen Victoria, the Society intends putting forth every effort towards making its annual exhibition of Chrysanthemums worthy the great event. Towards this end it is necessary that it receives the hearty co-operation of all the growers in the district of this the queen of winter flowers. It is felt that, were permission granted to all gardeners to compete in any of the various classes that are detailed in the Society's schedule of 1897, the result would be a display of this beautiful flower worthy the city and district—a floral fête that would remain a living memory and a record of great advancement in the culture of the Chrysanthemum during her Majesty's reign. The musical department of the carnival will be fulfilled by the engagement of a leading London band, and it is expected that quite apart from the usual attractions of this popular floral festival, not the least attractive to lovers of music will be the orchestral and instrumental concerts which the Council has arranged for. The dates of the carnival in the Drill Hall are 25th, 26th, and 27th November. The Secretary is Mr. W. P. Laird.

Orleans Chrysanthemum Conference.

The French National Chrysanthemum Society will hold a Show and Conference at Orleans on the 6th to the 10th November next. As an instance of the facilities given by the railway companies on the occasion of such gatherings it may be mentioned that all persons taking part in the Conference will have a reduction of 50 per cent. off their tickets. The programme is as under:—November 6th, Meeting of the Floral Committee at 9 A.M.; lunch for the Jury and members of the Conference at 11.30; meeting of the Conference at 2 o'clock; banquet at 7 o'clock. November 7th, Meeting of the General Committee at 10 A.M.; lunch at noon; visit to the various objects of interest in the town in the afternoon. November 8th, Visits to the leading nurseries. If the agenda of Saturday be not completed a supplementary meeting will be held on the 8th.

The subjects to be dealt with at the Congress are—Fertilisation of Chrysanthemums; What is the meaning of Races of Chrysanthemums? The best Composts and Manures to be used; Maladies and Parasites; Crown Bud and Terminal Bud; The drawing up of a list of varieties showing which of these buds it is best to take; Difficulties of Classification in the Alphabetical Arrangement of the Names of Chrysanthemums for catalogue purposes; The voting of the Society's medal, and settling the place where the 1898 Conference shall be held.—P.

A Lady Chrysanthemum Grower.

Lady Chrysanthemum growers are not to be met with any day, especially those who accomplish something above the ordinary in the successful culture of Japanese Chrysanthemums. For several years I have noticed a sprightly and active young lady carrying about pots of Chrysanthemums, tying, bud taking, disbudding, and otherwise manipulating her plants from time to time.

From rooting the cuttings to cutting the blooms she takes considerable pride in doing the work herself. Her plants, standing on the sides of the garden walks, duly fixed on boards, and secured to a wire, appear to be in excellent health. The plants are tall, being allowed to grow naturally. A fair number have the crown buds taken, but the greater part of the buds are terminals, and will give good, but late blooms. They are not grown for exhibition, but for house and church decoration, though she has been known to compete in a lady's table decoration class at a local show, using some of her most suitable blooms, and usually coming off well in the contest.

I feel certain, too, that that when her brother played in an amateur dramatic representation of "Our Boys," wearing a huge Chrysanthemum in his coat, it was one of her growing. She makes a creditable display of very fine flowers in November and December, lasting over Christmas and into January. She believes in something rich and strong as stimulants at this season, because the gardener who comes to mow the lawn and do other work may be seen carrying on his broad shoulders a pail of cow manure now and then, also to be heard referring to blood and fowl manure, not to mention Clay's, Pearson's, Standen's, and Thomson's, from which we may judge one or the other of which are employed.—S.

Early Flowering Chrysanthemums.

Chrysanthemums which flower freely in September and October come in very useful indeed for the majority of growers who require a good supply of flowers for various purposes during the period named.

Owing to the popularity of the large midseason varieties, early flowering Chrysanthemums do not receive that meed of support and attention which they deservedly merit. That they are not more grown is certainly remarkable, seeing that, as a rule, they do not require exceptional skill in culture. Upon the whole they have a style of growth that is free yet capable of furnishing an abundant display of bloom, good in quality.

Moreover, the blooms, especially of the smaller Pompon varieties, do not demand that persistent and careful disbudding which forms such an important feature in the cultivation of the prominent exhibition and many of the ordinary decorative varieties.

Some of the medium sized early Japanese varieties, however, are much improved by a little disbudding, in some cases to one bloom, in others to three or four, forming a spray. A considerable amount of interest and instruction may be derived by testing the capabilities of the various sorts, and ascertaining which are the best methods adapted to bring them to a maximum of effectiveness at a minimum of trouble.

What are known as September varieties do not always bloom at the time expected, but most of them will bloom early in October at the latest. This is a season when they are duly appreciated. The waning glories of the autumn outdoor flowers are fast departing in the presence of wet, wind, and a low temperature, but the Chrysanthemums are not quite so susceptible, for they are just approaching their full zenith of beauty.

It is desirable when practicable to cultivate the very earliest varieties in a suitable position outdoors. They cannot be otherwise than decorative if not cut, but there is certain to be a demand for those that are in bloom during the time of harvest festivals.

Some of the early flowering varieties commence flowering in July, more in August, but the majority in mid-September to mid-October. The varieties which bloom at the latter end of October are known chiefly as October flowering, occupying a place between the early and midseason varieties.

Perhaps the names and descriptions of a few of the best early flowering varieties may prove of interest to some not well acquainted with this class.

Alice M. Love is a comparatively new and moderately dwarf growing variety, which opens its first flowers when growing in a suitably moist and open position in July and August. The flowers are white, fairly large, and are best on terminal buds.

Flora is a splendid small golden yellow variety. It blooms early and freely and is very dwarf. The flowers are good both on crown and terminal buds, which is the case with most varieties of this size. It commences to bloom in July or early August, continuing until October.

Comtesse Foucher de Cariel is an exceedingly good variety, though not commencing to bloom quite so early as the preceding. It is a true Japanese flower, the florets being loose and free, giving the blooms a graceful appearance. The colour is an orange bronze. The height attained by the plant is 1½ to 2 feet. The blooming period is late September and early October.

Gustave Grunerwald is dwarf, reaching 18 inches to 2 feet. The colour is light pink. Commences blooming in August, continuing to October.

Madame C. Desgranges occupies a leading position among the early flowering varieties, not only for its earliness, but for its colour, which is white with just a tinge of yellow as the blooms are opening. With special cultivation blooms may be secured of large size and abnormal earliness. Some years ago a leading firm exhibited plants bearing several excellent blooms each at the July show of the National Rose Society. No early variety surpasses this for general usefulness, hence its universal popularity. Plants may be placed out in beds or borders, where they will furnish numbers of flowers for cutting. For the largest and finest blooms pot culture throughout the season is the most suitable. The growths must be restricted to a few only when large flowers are required, and one bud on a shoot should be the rule. It is not satisfactory unless disbudded freely.

G. Wermig.—This variety may be considered the same in all respects to Madame C. Desgranges except colour, which is yellow. It affords a fine contrast to the white variety, from which it is a sport.

Mrs. Burrell is another sport from Madame C. Desgranges. It is of a pale primrose colour, and blooms about the same time as the type, forming a compact plant 2 feet high.

Mrs. Hawkins is also a sport of a golden yellow, similar in habit and time of flowering, but not so free-blooming as the type. It is better for outdoors than in pots.

Lady Fitzwigram may be termed a rival to Madame C. Desgranges. It is of the same colour and very free in blooming. It is not so useful outdoors as the latter variety, but is very satisfactory in pots, attaining to its best condition under glass. Plants 2 feet high and well covered with bloom are attractive.

Madame Marie Masse is a new acquisition and an excellent bloomer. The plants grow to the height of 2 feet 6 inches, and possess a bushy habit of growth. It is a Japanese variety, has rosy purple blooms 4 to 5 inches in diameter, and makes an attractive specimen.

Mrs. Cullingford is a beautiful white with round, regular blooms produced freely. It is one of the best older varieties.

Fiberta ranks as a good-habited Chrysanthemum of the Pompon section, having small but beautifully formed lemon yellow blooms.

Frederick Pelé is a crimson red variety, good, but not such a free grower and bloomer as many others. Lyon is an excellent variety with rosy purple blooms of fine shape. The plant is a free bloomer, and has a desirable habit of growth.

Madame Piccol is another rosy purple variety, fine, but not so good as the preceding. Mr. W. Piercy is a sport from Madame Piccol. Its colour is distinct red, changing to a bronze brown. Good early reds are valuable, inasmuch as varieties of that colour are limited. Alice Butcher is a sport from Lyon. Colour red, shaded orange. It is a useful and attractive variety.

The above selection comprises many of the best varieties, both new and old, but there are many others worthy of cultivation. The best course to follow is to try all the varieties possible, and weed out those which are the least satisfactory.

The same selection will not succeed equally well in all places. Soil and positions available for their cultivation differ, though if the plants can have an open situation, they usually succeed in any soil, so long as rational treatment is afforded them.—E. D. S.

ROYAL AQUARIUM.—OCTOBER 12TH, 13TH, AND 14TH.

THE early autumn exhibition of the National Chrysanthemum Society was in every way satisfactory, and if the present show is a criterion of the material in hand for the November exhibition, we may expect something out of the ordinary at the next show. The trade exhibits were exceptionally fine and numerous.

Mr. N. Davis, Framfield, Sussex, was placed first for a group of Chrysanthemums and foliage plants, with a very tasteful exhibit. Mr. W. Howe, gardener to H. Tate, Esq., Park Hill, Streatham Common, secured second with a more formal display; while third place was assigned to Mr. J. H. Witty, Nunhead Cemetery. A keen competition was displayed in the class for twenty-four Japanese varieties, the first place falling to Mr. C. Penfold, gardener to Sir F. Fitzwygram, Bart., Leigh Park, Havant, with a very even exhibit. The varieties were Beauty of Teignmouth, Mrs. W. H. Lees, Phœbus, Mrs. C. H. Payne, Emily Silsbury, International, A. H. Woods, Madame Gustav Henry, Modesto, Madame Ad. Chatin, Eda Prass, Edith Tabor, Surprise, W. G. Newitt, Reine d'Angleterre, Alice M. Love, Mons. Chenon de Leche, Mutual Friend, and Phœbus. The second prize was taken by Mr. Jas. Agate, Havant; his best flowers were Milano, Mrs. J. Lewis, Mons. Chenon de Leche, Modesto, Madame Gustav Henry, and Dorothy Seward. Mr. N. Davis was third.

In the class for twelve blooms, distinct, Mr. F. G. Foster, Brockhampton Nurseries, Havant, proved the winner with good blooms of Edith Tabor, Mutual Friend, Emily Silsbury, Zealandia, and Louise. Mr. R. Jones, gardener to C. A. Smith-Rylands, Esq., Barford Hill, Warwick, was placed second with good blooms of Madame Ed. Rey, Mutual Friend, and Mrs. H. Weeks. Mr. J. Agate third. Mr. E. Such, Maidenhead, was the only exhibitor of twelve bunches of Pompons, being awarded first, and the same exhibitor was again first for six varieties. The amateur classes were very well filled and also showed a marked improvement in the quality of the flowers.

The tables of floral decorations are always an attractive feature here. In the chief class, Miss Nellie Erlebach, Chards, Stoke Newington, fully sustained the credit of the firm. The devices, bouquets, and baskets, being fully up-to-date, securing first prize. Mr. E. Such was placed second with a smaller display. A strong team of competitors contested the class for three epergnes, but Mr. D. B. Crane, Highgate, was decidedly first, with very handsome arrangements of yellow, bronze, and crimson Chrysanthemums, with appropriate foliage; Miss C. B. Cole, Feltham, second with a similar exhibit; Mr. W. Green, junr., Harold Wood, third with almost the same materials. In the class for two vases of Chrysanthemums, twelve large blooms, Mr. Jas. Brooks, gardener to W. J. Newman, Esq., Totteridge Park, Herts, was placed first with very effective vases; Mr. Norman Davis second; Mr. J. Tullet, gardener to G. Alexander, Esq., Warley Lodge, Brentwood, third. For a single vase of Chrysanthemums Mr. J. Tullet was placed first; Mr. D. B. Crane following with a fine vase; Mr. D. M. Hayler, gardener to Mrs. Langworthy, Greys House, Maidenhead, third.

Mr. H. Berwick, Nurseries, Sidmouth, exhibited a very fine display of Apples and Pears, in baskets and dishes. The fruit was remarkably well coloured and clean. An attractive exhibit of Apples and Pears was staged by Messrs. S. Spooner & Sons, Hounslow Nurseries. An artistic group of Chrysanthemums, beautifully arranged, came from Mr. W. Wells, Earlswood Nurseries, Redhill, comprising large flowers, decorative plants, bouquets, and arches, with Palms and trails of Virginian Creeper; Australie, M. Hoste Madame Gustav Henry, Emily Silsbury, Baronne Ad. de Rothschild, Thos. Wilkins, Iserette, and Edith Tabor represented the best of the large blooms, while the decorative class contained some very fine plants, Nellie Brown, a sport from Ryecroft Glory, being a distinct break and an attractive colour. Ambrose Thomas was also well shown; Louis Lemaire, a bronze sport from the well-known Gustav Grunerwald, was attractive; while the plants exhibited with large blooms were above the average. Mr. Eric Such, Maidenhead, exhibited a good collection of varieties grown naturally, forming a very bright exhibit.

A fine collection of Cannas came from the Swanley firm of Messrs. H. Cannell & Sons; the chief varieties were Paul Lorenz, Amie J. Chretien, Alphonse Bouvier, Golden Star, and Aurore, while a superb collection of vegetables, Chrysanthemums, and Violets completed the efforts of the firm at this exhibition in a satisfactory manner.

An enormous exhibit of Chrysanthemums and Zonal Pelargoniums was staged by Mr. H. J. Jones, Lewisham, comprising vases of large blooms, and bunches of the decorative section, the Pelargoniums forming a very attractive feature. Mr. W. J. Godfrey, Exmouth, had a large collection of Japanese varieties, all grown to show standard. The most notable were Golden Glow, golden yellow; M. Hoste, Mrs. J. P. Brice, chestnut red; John Seward, Mons. Rayonnant, a decided improvement on Lilian B. Bird; Mrs. Tucker Pain, Madame Phillipe Revoire, white; Soleil d Octobre, and Vte. Roger de Chezelles.

Messrs. Hawkins & Bennett, Twickenham, exhibited baskets of their new Zonal Duke of Fife, a good semi-double red, likely to become popular. A miscellaneous exhibit from Messrs. J. Laing & Sons, Forest Hill, comprised a collection of autumn flowering plants and a grand exhibit of Pears and Apples, in which most of the popular varieties were to be found, also Begonia Gloire de Lorraine. Messrs. Osman & Co., London, exhibited their flower vases, which have become so popular during recent years, also a fine display of dyed grasses and flowers. Messrs. J. Peed & Sons, Streatham, exhibited a variety of Apples, well coloured, forming a capital exhibit. Mr. T. S. Ware, Tottenham, sent an interesting exhibit of hardy flowers.

BULBS.

WHEN notions become firmly established it is very difficult to remove them, or convince cultivators that they are wrong, even by facts that are the outcome of practical experience. Perhaps no erroneous idea is more prevalent than the one that Dutch Hyacinths and other bulbous plants used for flowering in pots during the spring are not worth the labour and trouble of planting after they have done duty indoors. It would be difficult to trace the origin of such an idea, or the reason that has led to such a general opinion, but it is easy to prove that it has no foundation in fact, and is more than likely due to inexperience in the culture of bulbs. In a few soils Hyacinths, Tulips, Narcissi, and others may degenerate year by year, but in the majority they increase in numbers, size, and strength until they will yield flowers that cannot be surpassed by the second-class roots imported annually, or what may be known as first-class bedding roots. To attempt to plant out Roman Hyacinths, Duc Van Thol Tulips, Paper White, and Double Roman Narcissus that can be purchased at such a cheap rate would be a waste of time and labour. If they could be planted out direct from the forcing house such a step might be taken, but the necessary preservation needed to develop their growth and harden it to withstand the trying weather of early spring would prove a severe tax upon those with limited house or frame room at disposal for plant cultivation. With very early forced bulbs our experience has led us to the conclusion that the best course to pursue with them is to convey them to the rubbish heap directly they have flowered.

There are, however, tens of thousands of bulbs that are not forced, as they are allowed to come forward gradually and naturally in windows, greenhouses, cold frames, and similar positions. The majority of growers have bulbs of one sort or another in this condition, and if they are preserved after flowering as will be detailed they will with certainty increase in numbers and yield very fine spikes. The greenhouse is frequently robbed to ornament the dinner table and dwelling-room when the flowers could be gathered from outside beds and borders if care and a little forethought were exercised.

When the bulbs have been brought into flower under moderately cool conditions, a few days, or a week at most, in a cold frame is ample to harden them sufficiently to stand in a sheltered corner outside. From this point two courses are open—that is, either to retain them in pots until the foliage dies, or to plant them out in the position they are intended to occupy. Wherever they are planted they should be left undisturbed for some years, when they will pay abundantly for the trouble bestowed upon them. If the first plan is adopted they entail considerable labour in keeping them liberally supplied with water, or instead of thorough development their growth is prematurely brought to a standstill. This method is very frequently followed, so as to enable the cultivator, after the growth has ripened off naturally, to shake away the soil from the bulbs, and spread them out in the sun to dry and harden. It is contended that such measures are necessary, but the least labour and trouble is occasioned by the last method, and we have found that the bulbs do as well, if not better, the following season than when subjected to the artificial drying process. The better plan decidedly is to plant them out directly they have been well hardened, and then they complete their growth, and the foliage is ripened under natural conditions.

Failure may in many instances be traced to planting the bulbs in shrubbery and other borders in soil that has become exhausted by the roots of other trees. Hyacinths, Tulips, Narcissi, and other bulbs can no more be expected to thrive in unfertile soil than any other plant or tree, and yet such positions are frequently accorded them. Well developed growth and fine spikes of bloom cannot be produced from such positions, and under such circumstances we should not be surprised at them degenerating rapidly. They will do, however, on borders overshaded by forest trees, provided the ground is liberally supplied with food. We have a border planted three or four years ago, and although the spikes are large enough for cutting purposes—in fact, they are more useful than the larger ones—they will not compare with those grown in open positions and in good soil away from the roots of large trees.

The ground should be well dug and liberally manured as the work of planting proceeds; if this is done they will need no further care for two or three years, without Mignonette or other plants are grown on the

border during the summer. In this case—and plants of this description will do no harm after the plants are cleared off in autumn—the borders should receive a dressing of short manure in a fresh state. This should be forked into the surface, so that rains will wash the juices down to the roots ready for them when they commence activity. The bulbs will soon show their appreciation of such treatment.

The first season they may prove somewhat disappointing, and here no doubt is one reason why they have been regarded as useless after the first season. The nearer perfection the bulbs have been produced previous to importation the more certain are they to come small, for they frequently divide into a number of small bulbs, while many of the bedding ones will grow for a season before they do so to any extent. After the bulbs divide into a number, which they do rapidly when planted out without any artificial treatment, the same as practised in Holland, and attain their full development, that fine spikes are produced. A bed planted with bulbs that have flowered in pots, especially of Hyacinths, are certain to produce spikes of nearly every size. Ten years ago we planted out a bulb of Grand Lilas: for two years it remained a single bulb and produced one spike only each year; it has now increased to thirteen, and eight of them have flowered. When Hyacinths are grown three or four in a pot they should be planted out without division, for any attempt to divide them before their growth has been matured is certain to check them severely by the wholesale destruction of their roots. In planting be careful to place the bulbs at least 2 inches below the surface of the soil, or a little more, then the fork can be used without fear of damaging them.

Although we grow none in glasses we are certain that they also will repay for the trouble of planting in outside borders. A lady who only grows Hyacinths in glasses in the windows of her house was advised to plant them out after flowering, and her little flower beds are gay every year with the old bulbs that thousands would have thrown away as useless. When old bulbs are preserved they are often kept out of the ground too long, and I would rather plant them in July or August than leave them till November or December.—B. W.

ACACIA GRANDIS.

A LARGE proportion of the Acacias are natives of Australia, and from these we select one of the neatest and dwarfest species, more especially adapted for window or frame culture. Acacia grandis is a native of Western Australia. It forms a shrub of moderate size, and flowers freely while small. It is a most charming window plant for spring flowering, being at that season loaded with its golden yellow balls, and at all periods of the year its elegant foliage gives it an ornamental character. Its propagation is effected either by seeds or cuttings, usually by the latter method; they should be inserted in white sand or very sandy soil, and covered with a bell-glass or tumbler. As they are impatient of damp they require a little more care during the rooting process than those of the leafless species; the inside of the glass should be wiped daily, and, as soon as the cuttings are rooted, they must be potted off into sandy peat, and eventually into good fibrous peat, containing less sand. A flower spray of A. grandis is figured in the illustration.

As a companion plant to A. grandis may be recommended A. Drummondi, a plant of more recent introduction, and perhaps somewhat more delicate in habit. Many other desirable species are mentioned in catalogues, but a large proportion of these flower only when the plants have attained an inconvenient size.

ROYAL HORTICULTURAL SOCIETY.

DRILL HALL.—OCTOBER 12TH.

THE exhibition held in the Drill Hall on the above date was in all respects an interesting one. There were splendid Orchids, some grand Apples and Pears, magnificent collections of Michaelmas Daisies, while Chrysanthemums and other flowers were extensively shown. Mr. Woodward's collection of Apples and Pears was a magnificent one, and thoroughly deserved the gold medal which the Fruit Committee awarded.

FRUIT COMMITTEE.—Present: Phillip Crowley, Esq. (in the chair); with the Rev. W. Wilks, and Messrs. Hugo M. Müller, G. Bunyard, J. Cheal, G. W. Cummins, W. Pope, A. H. Pearson, A. F. Barron, A. Dean, W. Bates, G. Woodward, J. H. Veitch, J. Willard, J. Smith, G. Wythes, F. Q. Lane, G. Reynolds, W. J. Empson, R. Fife, and T. J. Saltmarsh.

The exhibits placed before the Fruit and Vegetable Committee were numerous, and fairly well varied. There were a few large collections of fruits from different exhibitors, and many of the most popular varieties were handsomely represented. J. Ester, Esq., Wakefield, showed a few Apples. The fruits were as a rule rather small, and consisted of Lord Suffield, Ecklinville, Warner's King, Stirling Castle, Alfriston, Emperor Alexander, and others. Mr. Rickwood, gardener to Lady Freake, Fulwell Park, staged a collection of upwards of six dozen dishes of Apples and Pears. Many of the specimens were good in shape, but generally speaking lacked colour. Amongst others were noted Potts' Seedling, Peasgood's Nonesuch, Wellington, Frogmore Prolific, Lord Derby, Beauty of Kent, Mère de Ménage, King of the Pippins, Ribston Pippin, Cox's Pomona, and Cellini Apples, with Pears Beurré Hardy, Pitmaston Duchess, Beurré Diel, Beurré Superfin, and Marie Louise. The Pears were mostly small.

Mr. G. Woodward, gardener to Roger Leigh, Esq., Barham Court, Maidstone, staged a magnificent exhibit of Apples and Pears. The size, richness of colouration, and the shape of Mr. Woodward's fruits are well known, and seldom has a better collection been staged in the Drill Hall than the one under notice. The Apples comprised Yorkshire Beauty, Melon, Baumann's Red Reinette, Hormead Pearmain, Stirling Castle, Calville Malingre, Tower of Glamis, Alfriston, Golden Spire, Waltham Abbey, The Queen, Wealthy, Washington, Margil, Tyler's Kernel, Lincoln Pippin, Potts' Seedling, Prince Albert, New Hawthornden, Lady Henniker, American Mother, Lord Suffield, Stone's, Cox's Pomona, Queen Caroline, Ecklinville, Golden Noble, Lord Suffield, Lord Derby, Warner's King, Belle Dubois, and others. Amongst the Pears we noted Duchesse d'Angoulême, Beurré Hardy, Emile d'Heyst, Gansel's Bergamot, Magnate, Doyenné du Comice, Prince Consort, Doyenné Boussoch, Beurré d'Anjou, and Beurré Dumont.

Pears and Apples were shown to the extent of sixty dishes by Mr. W. Offer, gardener to J. Warren, Esq., Handcross Park, Crawley. The

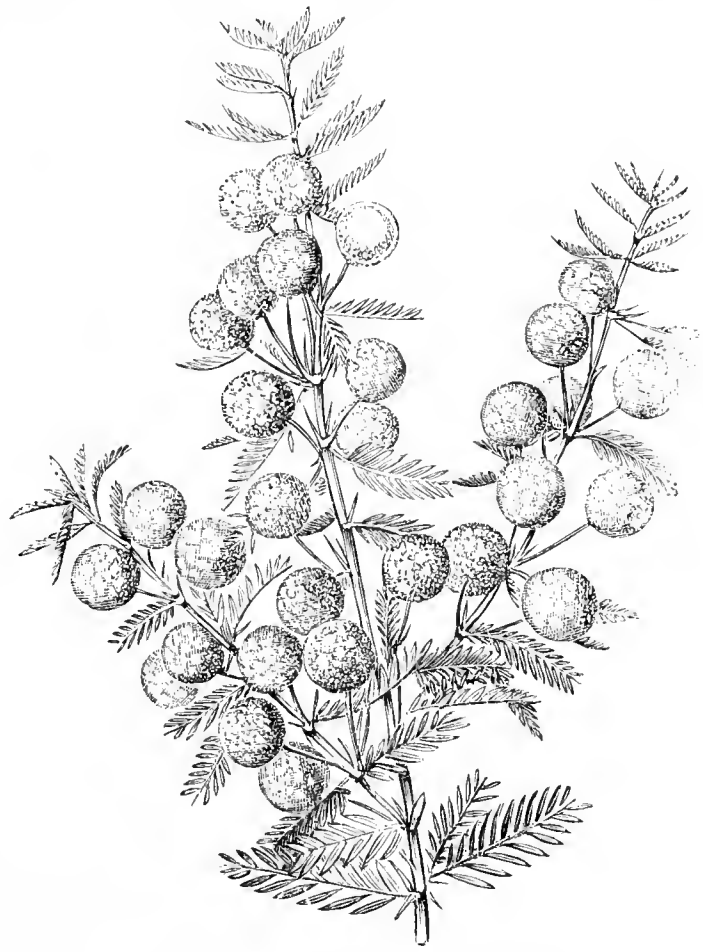

FIG. 56.—ACACIA GRANDIS.

Apples were beautifully coloured and the Pears were of good form. Of the latter the most conspicuous were Beurré Hardy, Nouvelle Fulvie, Thompson's, Nouveau Poiteau, Beurré Bosc, and Marie Louise d'Uccle. The best Apples were Emperor Alexander, Wealthy, Warner's King, Cox's Pomona, Peasgood's Nonesuch, Lord Derby, Blenheim Orange, Gloria Mundi, and Winter Quecning. Messrs. A. W. Young & Co., Stevenage, sent a large collection of ornamental Gourds.

A splendid collection of Cabbages was shown by Messrs. J. Carter and Co., High Holborn. The varieties comprised Filder-Kraut, Ellams' Early Dwarf, Dwarf Nonpareil, East Ham, Cocoa Nut, Nonpareil, Rosette Colewort, Sugarloaf, Wheeler's Imperial, Little Pixie, Winningstadt, and Enfield Market, with one or two Red varieties.

CLASSES FOR FLAVOUR.—Mr. G. Woodward secured the first prize in the class for the best flavoured dish of Apples with Cox's Orange Pippin in good form. Col. Brymer was second with Ribston Pippin. The last named went to the front in the Pear class with the delicious Thompson's, and was followed by the Rev. H. G. Palmer, who showed Marie Louise.

FLORAL COMMITTEE.—Present: George Paul, Esq., (in the chair); with Messrs. H. B. May, G. Stevens, D. B. Crane, J. F. McLeod, J. Hudson, T. Peed, C. J. Salter, J. D. Pawle, C. Jeffries, H. J. Cutbush, J. W. Barr, J. Walker, J. T. Bennett-Poë, C. E. Pearson, J. Fraser, E. Beckett, R. M. Hogg, H. Turner, C. T. Druery, and E. Mawley.

A magnificent display was made by the collection of Michaelmas Daisies staged by Mr. E. Beckett, gardener to Lord Aldenham, Elstree. The varieties were numerous, and the quality good. Some of the best were Amellus bessarabicus, cordifolius major, lævigatus, Harpur Crewe, dumosus, Robt. Parker, Madonna, Ariadne, sagittifolius, Orion, and densus. Messrs. Paul & Son, Old Nurseries, Cheshunt, arranged a beautiful stand of Roses in pots and cut. There were La France de '89, Viscountess

Folkestone, Madame Abel Chatenay, Gustave Regis, and Caroline Testout. The same firm also staged Michaelmas Daisies of good quality and well diversified.

Messrs. W. Cutbush & Sons, Highgate, sent handsomely fruited plants of Cratægus Lelandi, with Oranges and Skimmia japonica. The plants made a charming display. Messrs. J. Veitch & Sons, Ltd., Chelsea, showed a superb exhibit of Michaelmas Daisies. Many of the leading varieties were represented by profusely flowered pieces cut and placed into pots. Particularly noticeable were horizontalis, candidus, dumosus, Arcturus, longifolius formosus, Amellus bessarabiens, and cordifolius.

Mr. W. Patten, Camden Nurseries, Cranbrook, Kent, sent a few small bunches of Michaelmas Daisies, as well as some single Dahlias. Mr. George Prince, Oxford, made a charming display with Roses and their own foliage. The blooms were of fine quality. Mr. G. Wythes, gardener to Earl Percy, Syon House, Brentford, showed Chrysanthemum blooms rising from a groundwork of Maidenhair Fern. The flowers were of splendid quality, the colour development being rich. Mr. H. Deverill, Banbury, exhibited hardy flowers, amongst which Michaelmas Daisies were particularly conspicuous. Messrs. J. Peed & Son, West Norwood, sent small but splendidly flowered plants of Begonia Gloire de Lorraine.

Messrs. J. Veitch & Sons, Chelsea, sent Cratægus orientalis, Vitis vinifera purpurea, V. Coignetiæ, Coryopteris mastacanthus, as well as several plants of hybrid Rhododendrons. Mr. R. Owen, Maidenhead, showed some charming Chrysanthemums. The flowers were not large, but refined in character. Mr. H. B. May, Upper Edmonton, showed magnificently grown plants of Begonia Gloire de Lorraine. The plants were pyramids of bloom. Messrs. Hawkins & Bennett, Twickenham, staged a grand double scarlet Zonal Pelargonium named Duke of Fife. It is a very free bloomer and of brilliant colour.

Two boxes of Chrysanthemum blooms came from Mr. W. J. Godfrey, Exmouth. The varieties included Mons. Hoste, Admiral Ito, Mons. Gustave Henry, Snowflake, Mrs. J. P. Bryce, and Pride of Exmouth. Mr. W. Bain, gardener to Sir Trevor Lawrence, Bart., showed crested Begonias; and Mr. W. Penton, Chippenham, some good Violets.

ORCHID COMMITTEE.—Messrs. F. Sander & Co., St. Albans, arranged a bright little group of Cattleyas, mainly varieties of labiata. The plants were splendidly grown and clean. The group staged by Messrs. H. Low and Co., Clapton, was well diversified, and contained many Orchids of good quality and clear colours. There were Odontoglossums, Cattleyas, Cypripediums, Oncidiums, and others. Mr. H. J. Chapman, gardener to R. I. Measures, Esq., Camberwell, sent some fine plants of Orchids, amongst which Cattleyas were particularly conspicuous. Cypripediums were also of fine quality.

A beautiful group of Orchids was arranged by Messrs. J. Veitch and Sons. There were both quality and quantity, while the arrangement was exceedingly effective. Almost all kinds at present in flower were represented, so it would serve no useful purpose to give a list of names.

MEDALS.—The Fruit Committee awarded the following medals for exhibits. Gold medal to Mr. G. Woodward; silver Knightian medals to Messrs. J. Warren, J. Carter & Co., and A. W. Young & Co.; and silver Banksian medals to Messrs. Rickwood and J. Ester. In the floral section silver Flora medals went to Messrs. G. Wythes and H. B. May; silver-gilt Banksian to Messrs. E. Beckett, Paul & Son, and J. Veitch & Sons; and silver Banksian to Messrs. H. Deverill and G. Prince. The Orchid Committee gave a silver-gilt Flora medal to Messrs. J. Veitch & Sons, and silver Floras to Messrs. H. Low & Co. and H. J. Chapman.

CERTIFICATES AND AWARDS OF MERIT.

Apple James Grieve (G. Bunyard & Co.).—An early dessert Apple. The quality is very refreshing and the fruits keep well (award of merit).

Begonia grandiflora erecta cristata (W. Bain).—The flowers of this strain are crested on the majority of the petals (award of merit).

Chrysanthemum Madame G. Bruant (J. R. Pearson & Sons).—A large reflexed Japanese. The centre is silver white, the extremities being rosy mauve (award of merit).

Chrysanthemum Mrs. Wingfield (W. J. Empson).—A dwarf-growing flesh-coloured variety. It is very free flowering, and of good form (award of merit).

Lælia præstans Low's var. (H. Low & Co.).—A flower of fine form and substance. The sepals and petals are most delicate mauve, and the lip deep purplish mauve (award of merit).

Maranta picta (W. Bull).—A handsome form. The leaves are velvety green, of a deep shade towards the margins, and brighter at the midrib (award of merit).

Melon Croxteth Jubilee (B. Barham).—A scarlet fleshed variety of good quality. The flesh is very deep and luscious (award of merit).

Nandina domestica (J. Veitch & Sons).—A dwarf-growing shrubby greenhouse plant with crimson foliage (award of merit).

Odontoglossum grande Pittianum (T. & T. Pitt).—A beautiful yellow form of the type. The lip is the palest in colour, being creamy white. It attracted much attention (award of merit).

Vanda cærulea Rochfordiana (T. Rochford).—An almost white form of the type. Each of the organs is delicately tinged with purple (award of merit).

Veronica Silver Star (J. Veitch & Sons).—A dwarf green and white variegated Veronica that should become popular (award of merit).

Zygopetalum Jorisianum (W. Cobb).—The sepals and petals of this Orchid are green, blotched and barred with brown. The fringed lip is white (award of merit).

HELLEBORE POWDER AND THE ONION MAGGOT.

"KITCHEN GARDENER," on page 311, has great faith in the efficacy of soot as a preventive for the Onion maggot. I am afraid I must come under the same category as those unsuccessful users of the soot antidote, although I have used it when digging the ground, when preparing it for both seeds and plants, and repeatedly dusted the plants from a very early stage of growth, and after all the maggot has left me almost without a bulb.

This year I tried salt as a manure for the plants and a cure for the maggot, and I thought I was to succeed, as the plants appeared so strong and healthy, until in looking through them I found the maggot had commenced its work in earnest. I had come to the conclusion that soot and paraffin were of no avail in arresting its devastation. I therefore determined to give hellebore powder a fair trial. I dusted it on rather heavily on four different occasions, with four days between each dusting, and I am pleased to say the maggot stopped its work, and I have harvested a good crop of bulbs, even from those sown in the ground, which system in this district is generally supposed to be useless.

It would be interesting to hear if other correspondents have been successful with the above cure; it appeared to me if it would shift the caterpillar, the Onion fly would fight shy of it. — W. RUSHTON, *Kirkintilloch, N.B.*

FERNDALE.

FERNDALE, Pedmore, the residence of Wm. Roberts, Esq., is situated about 1½ mile from Stourbridge, on the main road between that town and Hagley. The neighbourhood abounds with princely dwellings and charming gardens, where plants, flowers, and fruit find congenial homes. It is respecting the gardens of Ferndale we wish to say a little, for they are not only renowned for the well-kept lawn, healthy shrubs, and borders teeming with brilliant flowers, but also Grapes and Peaches, as well as hardy fruits, Apples, Pears, and Plums, besides the smaller bush fruits, are all brought to a state of high perfection.

Entering the grounds from the main road the eye at once rests on the fine evergreens, which lend such a charm to the place. These consist chiefly of variegated Hollies, Araucarias, Cupressus, Pines of sorts, many other choice evergreens, and deciduous flowering shrubs. The front part of the shrubbery border was occupied with a series of circular flower beds, 6 feet in diameter, the divisional lines being formed of Veronica spicata, the centres filled in with "Geraniums" of sorts; one, Chelsea Gem, with white variegated foliage and pink flowers, was most effective. Others were occupied with dwarf Antirrhinums, such as Crimson King, White Queen, and Yellow Prince; these were exceedingly bright and striking. The groundwork between the circles was Aubrietia, dwarf Asters, and Ageratums.

In the pleasure grounds were many other beds, all possessing an individuality of their own. It is not necessary to enumerate each bed and the method of planting, but just two or three of the most striking. For instance, there was a large circular bed of scarlet Begonias, dotted all over with Dactylis glomerata, and an edging of the variegated Arabis. Another simple but very striking bed was a large circle with the old Perilla in the centre, next a broad band of Centaurea candidissima, another circle of "Geranium" Crystal Palace Gem, and an outer edging of Mangles' variegated "Geranium." Perhaps the most effective arrangement was a carpet bed, 22 feet long and 7 wide, and planted with Iresine Lindeni, Mesembryanthemum cordifolium variegatum, Alternantheras of sorts, Sedums, Golden Feather, a dwarf Thyme, exceedingly pretty; Antennaria tomentosa, Herniaria glabra, and an outer edging of Echeveria secunda.

Carnations were in strong evidence, and along the various shrubbery borders we noticed a large assortment of the very best of the herbaceous plants. We have dropped into these gardens at all seasons of the year, and at all times find a multitude of hardy flowers in bloom, as well as some rare deciduous shrubs. What with the perfect order of the place, the endless variety of plants and flowers, combined with the intelligence of Mr. Parks, the gardener, Ferndale is at all times a source of great attraction.

Passing along a more secluded walk we came unexpectedly on the hardy fernery, where a choice collection of hardy Ferns finds an agreeable home. The formation of the fernery was not an elaborate or pretentious piece of work, but it bore unmistakeable traces of skilful adaptation in its arrangement. Near at hand was the Nut plantation; it was not only that in name, but in reality—a plantation of Nuts. Every bush is carefully pruned year by year, and at the time of our visit the trees were literally weighed down with their heavy burden.

We now enter the walled-in kitchen garden, which is not only teeming with luxuriant vegetables, but the fruit trees were in fine condition. Down each side of the central path were fine specimens of bush Apples, many of them carrying good crops of fruit. Every branch stood clear and free of its neighbour, while the trees themselves were grand specimens of the pruner's art. We noticed such sorts as Gloria Mundi, Warner's King, Kentish Fillbasket, New Northern Greening, New Hawthornden, Peasgood's Nonesuch, and Court Pendû Plat. On the walls were some well-trained Plums and Pears in splendid fruiting condition. Of the former there were Kirke's, Jefferson, Golden Drop, Emperor, Green Gage, and Transparent Gage. Of Pears the leading sorts were Marie Louise, Williams' Bon Chrêtien, Passe Colmar, Doyenné du Comice, Beurré

Diel, Duchesse d'Angoulême, and Louise Bonne of Jersey. The north wall was furnished with the orthodox Morello Cherries.

Down each side the central path of the kitchen garden Chrysanthemums were in strong force. Before the year is out some of our garden friends will know about them at the leading shows in the district. They bore evidence of high-class culture, with the promise of "up to date" flowers. Mr. Parks is a formidable competitor in the Chrysanthemum arena, having within the last three years secured sixteen first-class prizes at Wolverhampton, Droitwich, and neighbourhood.

The glass accommodation is not extensive, but is made the most of. In one house we saw some good Grapes. The colour was good, while the "finish" was perfect. In the Peach house there was one large tree from which 385 perfect fruits had been gathered for table, besides many more used for other purposes. There were the usual greenhouse plants and Ferns, all healthy and free from blemish. We compliment the worthy owner, not only on the high keeping of Ferndale, but the masterly skill by which every part is managed.—QUINTIN READ, *Eresham.*

BRIEF NOTES ON ALPINE FLOWERS.

ACHILLEA TOMENTOSA.

ON page 246 I made reference to the pretty, Daisy-like Achillea ageratifolia, and I have now to draw attention to another dwarf member of the same genus, but totally unlike it in appearance and in colour. This is A. tomentosa—the "Downy Milfoil." It is of capital habit, and a leading work says, with truth, that it "is one of the best yellow-flowered species for the rock garden, having a dense habit." It is a native of Europe, and also of the North of Asia, and is perfectly hardy and able to accommodate itself to almost any conditions on a light and free soil. On a richer one it is liable to grow taller and coarser, and so to lose in some degree one of its merits as a rock-garden plant. The flower heads of bright yellow are individually small, but the plant is usually so floriferous, and the numbers produced on a small plant so great, that the general effect of this Achillea is very pleasing. This is added to by the small finely divided leaves being exceedingly woolly—a feature shared by the flower stems also.

In rich soils A. tomentosa grows to about 12 inches in height, but poorer soil will reduce this to as low as 6 inches, an advantage for ordinary rock garden purposes. Although not very particular in its requirements, it seems to prefer a sunny situation, and to look all the brighter if given a little limestone or lime rubbish intermixed with the soil. It is a pretty little plant, easily obtained at a moderate price.

CARDAMINE PRATENSIS FLORE-PLENO.

The little flower possessing this long name is only the double variety of the common Lady's Smock, which is so plentiful in many districts. It is not a very scarce or rare plant, but one occasionally hears it spoken of as one of more than usual rarity. It is neither this, nor is it exceptionally difficult to grow. In some gardens, indeed, it spreads freely, and increases not only by means of growth from the root, but apparently by the young plants which form on the leaves being dispersed and taking root. This singular provision for perpetuation and increase is, of course, known in some Ferns and other plants as well, but when pointed out rarely fails to secure increased interest in the double Lady's Smock. These young plants are produced on some of the leaves only, but are complete, although miniature, plants, only requiring favourable conditions to enable them to form perfect and full-sized individuals.

For lovers of flowers, however, the main interest of the double Cardamine lies in its pretty double flowers, either white or pale rose in colour. These are perfectly double, and, in addition to their beauty on the plant, are not to be despised for cutting purposes. The pale rose-coloured form is more plentiful than the pure white one. As may be expected when we consider the water-loving nature of the typical Cardamine pratensis, the double variety likes a rather damp position, and the flowers last longer if the place is partially shaded from strong sun. On the margins of little pools or bogs in the rock garden it will be found quite at home. It may also be mentioned that it is usually somewhat dwarfer than the single variety.—ALPINUS.

(To be continued.)

KEW NOTES.

IN the narrow border which skirts the south front of the T Range at Kew, something of special interest may be seen in flower at almost any period of the year. At present several good things are at their best. Against the low wall of the structure several shrubs are growing and flowering, which are more often seen in the greenhouse than outside.

Of these the dwarf Pomegranate (Punica granatum nana) is very bright. It is not trained closely to the wall, the side branches only being trained to extend the plant. It forms an upright-growing bush, with glossy lanceolate leaves 1½ inch long. The first flowers were open early in September, and now it is covered with open flowers and buds. The flowers are about 1½ inch long; the calyx is scarlet and fleshy, and lasts a considerable time; the corolla is scarlet also, but the petals are very flimsy and fugitive. A white-flowered variety is growing by the side of this, but is not producing flowers at present.

Another shrub of considerable merit is Medicago arborea, the "Moon Trefoil." The leaves of this are trifoliate, pubescent, and slightly glaucous. The flowers are produced in umbels, usually about eleven in each, from nearly every node on the upper parts of the branches. They are orange yellow in colour. Raphiolepis salicifolia is also flowering well; almost every branch is terminated with a raceme of flowers. A variety of Capparis spinosa is producing numerous white flowers and a few purple fruits. This has a little protection during winter. Among other shrubs on the wall, in or out of flower, are Abutilon megapotanicum, Calceolaria alba, Discaria longispina, Ligustrum lucidum tricolor, and Aloysia citriodora.

In the border at the foot of the wall a quantity of Amaryllis Belladonna are in flower. In addition to the ordinary form of this there are several plants of a variety which is better in every way. It has darker flowers, which are produced in larger umbels, on longer and stouter stalks than the type. In a corner a mass of Kniphofia Northiæ is seen to great advantage; this, however, is not in flower. A plant of Hibiscus moschatus is freely producing its large, blush-coloured flowers, and several other interesting plants are noticeable. An edging several inches wide is made to the border with Zephyranthes candida, which is nicely in flower.

Anyone who can afford space round a warm house to make such a border, will be amply repaid for the trouble by the great number of interesting plants he can grow from the little extra warmth afforded by the house and wall, and in such a border interesting plants which require rather more attention than other border plants can be more easily kept sight of, and there is not the same danger of small choice plants becoming smothered by coarser growing neighbours, as is sometimes the case in mixed borders.—K.

THE YOUNG GARDENERS' DOMAIN.

COLEUS.

THESE comprise many handsome summer foliage stove plants, which in growth and shape of leaves closely resemble the common Nettle. They are of little use for house decoration, as the foliage soon falls, but they are serviceable for what may be termed "rough decorations," by which I mean for bazaars, corners, and tables in small local shows. For such affairs the gardener is often called upon to send plants, and not wishing to risk damage to his most valuable, it is here that Coleuses and many others are found very useful.

They are propagated both by seeds and cuttings, the latter being more suitable. Sow the seeds in January in pans of light sandy soil, water and cover over with a piece of glass. The best position for the germination of the seed is on a shelf in a temperature ranging about 70°, and as soon as the seedlings appear remove the covering so that they may have all the light possible. When they are large enough to handle prick out into pans and place back again on the shelves.

Before they are large enough to pot into small pots it is easy to select those that are worth keeping. The slowest growing are usually the best, being more highly coloured than the quick and strong-growing varieties. Propagation by means of cuttings is by far the easiest way, and also the only mode in the case of named varieties to obtain them true. Cuttings may be inserted singly in small thumb pots, or three or four round the sides of a 3½-inch; and if placed in a propagating frame will soon commence to root. They may also be inserted in the cocoa-nut fibre refuse that is usually placed in the bottom of the frames.

When rooted pot into 3½-inch, using a compost of two parts loam, one part leaf soil, and one of sand; and as soon as the roots have commenced to take hold of the new soil place the plants in a position fully exposed to the sun, so that they may develop their handsome colours to the full extent. From the 3½-inch transfer to 5 or 6-inch, using the same material as before. The stronger-growing varieties will again want potting into 7 or 8-inch.

Give plenty of water at the roots during the summer, also syringing amongst the pots, but take care not to damp the foliage. Some growers pinch their plants to make them bushy, but I consider they make better specimens without. If the main stem is allowed to go ahead it will throw out side shoots as it advances, thus causing the plants to be pyramidal in shape. It is advisable to pinch the flower heads out as soon as they appear, for they are no good, and only spoil the appearance of the plants. In winter the foliage loses its brightness considerably and many leaves fall. When they begin to do this place a sufficient quantity for obtaining cuttings for another season on a shelf, or somewhere in a position where they are not an eyesore, for Coleus are usually objects of pity in winter. They require very little water at the roots at this season.

Mealy bug and red spider are partial to Coleus, and when plants are attacked it is advisable to propagate anew and throw the attacked ones on the fire.—ELVEDEN.

HINTS ON CYCLAMEN CULTURE.

AS Cyclamens are annually becoming more popular, a few hints on their culture may be acceptable to young gardeners. In the first place it is a matter of great importance to secure a good strain of seeds, which are sown by many growers between the months of January and April. I prefer, however, to sow about the end of July or early in August, and the plants should be in bloom in September of the following year. This is when flowers for cutting are scarce, and at their highest value.

Sow the seeds in an ordinary seed pan that has plenty of holes for drainage, placing 1½ inch of clean crocks hollow side down, and follow with a layer of coarse leaves. The compost of fibrous loam and leaf mould in equal parts, with a little sand, must be placed to within half an inch of the rim of the pan, and must be neither wet nor dry when used. Sow the seeds very thinly, cover to the depth of a quarter of an inch with

finely sifted material, water with a fine rose to settle the soil, and then cover the pan with a piece of shaded glass to prevent evaporation. A temperature ranging from 60° to 70° is suitable, and the soil should be kept moist, though not wet. The seedlings will appear in from five to six weeks, when the covering may be removed and the pan placed close to the glass, and shaded from strong sun with a pieee of thin paper. During bright weather damp the seedlings two 'or three times a day with a very fine rose.

This treatment will prove satisfactory until the plants have made four leaves, when they must be removed to a temperature of 40° to 45°, still keeping near the glass. Let them remain in this position until early in February, then remove again to the higher temperature, continuing the same cultural details. By the beginning of March the plants will be ready for potting. Preserve every root, and secure a little ball of soil to eaeh plant. Two-and-a-half ineh pots answer best for this pottiug, and they must be thoroughly clean and well drained. The compost may consist of good fibrous loam and leaf mould in equal parts, with eoarse sand and a 4-inch potful of Thomson's manure to a barrowload of soil. Always pot lightly, and let the corm projeet about half way out of the soil. After potting, water with a fine rose to settle the soil about the corm, and again place near the glass in the same temperature, keeping shaded from strong sun, and sprinkling the plants twice daily in bright weather.

In about seven or eight weeks the plants will be ready for a shift into a 4½ or 5-inch pot, aecording to the size of the eorm. The compost may be the same as recommended for the previous potting, with the addition of a fourth of old Mushroom bed manure to a barrowload of soil. Again place as close to the glass as possible, and eontinue to damp the plants on bright days. By the end of July or early in August the plants will be ready to transfer to their flowering pots. After potting, place the plants in an easterly or northerly aspeet, giving as much light as possible. Shade from strong sun, and sprinkle occasionally until the middle of August, after which this must cease. Avoid wetting the eorm when watering, as if this is done, the leafstalks are liable to damp and spoil both the flowers and the appearance of the plant. Flower spikes should show in September or October, when the plants may be removed to the conservatory to flower, which, with attention, they will do until the end of March. The flowers should not be cut, but pulled out with the thumb and finger.

After the plants have done flowering prepare a frame in the following manner:—Plaee plenty of old brieks and rubble in the bottom to insure good drainage, then a foot depth of compost similar to that recommended for the final potting of seedlings, bringing this close to the glass. Turn the plants out of their pots, partly shake away the soil, and plant out into the prepared frame, allowing plenty of room for the plants to develop. The best Cyclamens I ever saw were planted out on a Vine border, but it was an exeeptionally good summer. Water well after planting to settle the soil about the roots, and after the plants start into growth sprinkle on bright days. Towards the end of August lift the plants carefully, preserving every root possible; pot into suitable sized pots and place in a pit or frame kept rather close for a few days, afterwards removing to a house with a temperature of 50° to 60°, and keep near the glass. If these instructions are followed there will in the dark days of winter be Cyelamens which will be a pleasure to all concerned.—J. C., *Lancashire.*

FRUIT FORCING.

Vines.—*Earliest Vines in Pots.*—Well managed Vines in pots prodnee useful Grapes, and often better than Vines planted in borders, from the conditions of eultnre being more favourable. This is the case where the Vines are given bottom heat. To insure snecess the canes must be strong, thoroughly ripened, and duly rested. As a start must be made about the 1st of November to have ripe Grapes in March or early in April, the tree leaves and stable litter should be in course of preparation for affording a mild sweet bottom heat. The heat about the pots should not exeeed 65° at the start, bringing up the fermenting material to the level of the pots by degrees, so as to augment the temperature to 70° to 75° by the time the Vines are in leaf. Any Vines in pots required for starting later should be placed under cover, an open shed with a north aspect being suitable; but the pots must be proteeted with dry hay or straw, and mice and rats kept down, or the animals may render the Vines useless by girdling them at the collar.

Vines for Starting in December.—Pruning, if not already done, must not be farther delayed, as early and complete rest for a few weeks contributes to an even break. Pruning to two buds is usually followed by a good show of useful bunches, but if such has not been so in previous years, or larger bunches are desired, the shoots may be left a little longer, or pruned to the most promising eye nearest the base. What, however, is gained in size of bunch is usually lost in compactness thereof, unevenness of berries, and bad finish. Besides, bunches of 1 to 2 lbs. weight are quite large enough for early Grapes. Remove any loose bark, but avoid the close peeling and scraping that injures the rods, and wash them with tepid soapy water, 4 ozs. to a gallon of water, following where there has been red spider with a solution of 2 ozs. caustic soda, and 2 ozs. pearlash to 1½ gallon of water, or where there has been fungi trouble, use a solution of sulphate of copper 1 oz. to 1½ gallon of water; apply carefully, but just wetting every part with a brush moistened in the solution. Thoroughly cleanse the woodwork of the house and limewash the walls. Remove the surface soil down to the roots, if not to the whole extent of the border, for a distance of 3 or 4 feet from the stem, and supply fresh loam so as to encourage new fibres, and an extension of fresh roots from the collar, adding about a quart of steamed bonemeal and a gallon of wood ashes to each 3 bushels of loam, or supply some approved fertiliser, according to the instructions. Keep the house cool, dry, and airy until the time arrives for starting.

Houses of Ripe Grapes.—Thin-skinned Grapes are more susceptible to cold and damp than are the thiek-skinned varieties. This applies eqnally to Black Hamburghs and similar kinds as to Muscat of Alexandria and Madresfield Court, but Hamburghs do not require a temperature of over 45° for good keeping, and there must not be any deficiency of moisture at the roots, otherwise the Grapes will shrivel. Remove all dead and decayed leaves from the Vines where Grapes are now hanging, and look over the bunches for any shanked or decayed berries and burn them. A temperature of 50° is the most suitable for Muscat of Alexandria. Lose no opportunity of giving air when the days are fine, turning on the heat so as to cause a gentle warmth in the pipes, not so mneh to dry the atmosphere as to insure a circulation of air, which is the best safeguard against damp. Turn off the heat at midday, or soon after, so as to allow the pipes to cool, but not so as to lower the temperature below the night minimum. When the heat falls too low and the temperature is raised moisture condenses on the berries, and being stagnant the skin of the Grapes is more or less decomposed, and fungal germs find a medium of germination and soon set up speedy decay. There is no harm in a low night temperature, the fault lies in not giving air soon enough, so that the heat from the hot-water pipes or sun expands the atmosphere, and the moisture is deposited on the berries as well as on the glass. In dull weather, espccially during fog, it will he necessary to keep a genial warmth in the pipes, but the house closed, in which case the moisture will be condensed on the glass instead of the Grapes.

Late Grapes.—Thick-skinned Grapes require time to mature after they are ripe, though Alicante improves nothing whatever in keeping, and is at its best as soon as well ripened, and the same may be said of Gros Maroc. Mrs. Pince is, perhaps, the best quality late Grape with a thick skin, as it certainly is one of the most difficult to finish, and is at its best shortly after being ripe. Its great defect is not colouring well up to the stalk, and it makes no difference whether the bunches are large or small. It also loses eolour more than any other late Grape, becoming quite red, but will hang as long as any other, and retain its excellent quality even in a shrivelled condition. Started early, say in March, the berries set better, and the fruit ripens quite up to the shank, and when covered with its fine bloom is very taking in appearance. Alicante retains its colour well, and as a prelude to Gros Colman is a very desirable Grape, as it is good in quality, the vinous flavour being very refreshing, and the earthiness, as in Gros Colman, entirely absent, whilst its appearance is unrivalled by any oval Grape except Alnwick Seedling, which is one of the hest late Grapes.

The magnificence of Gros Colman renders it popular, as that goes a long way even with table Grapes, and is all-important for market. Its beautiful appearance whets the appetite, and the flavour is entirely overlooked, as that beside West's St. Peter's, less presumptuous in bunch and berry, is comparably bad; yet, when started early, so as to allow it time to mature, the berries are not only superb, but the quality is vastly improved. But its principal valuc consists in the easiness of its growth; the bunehes are always compact, the berries set well, they swell to a good size, and when the Vines are not overcropped, they colour well. It is far the best in quality when grown on the old red sandstone formation, though it does well on the alluvial silts, as do all the coarse vinous Grapes. For rich vinous quality no thick-skinned Grape can vie with West's St. Peter's, but it is of no use where appearance at table is the chief merit in a Grape.

Lady Downe's is not only the best keeping Grape (we have had it excellent in June), but is unexcelled by any late Grape for uniform excellence in quality, though only about half as taking in appearance as Gros Colman, and not giving nearly so much weight of fruit per length of Vine; it retains its richness to the last, simply because it contains more sugar, and mostly has a "smack" of Muscat. In white Grapes there are some aspirants for fame, but none takes a higher place than Trebbiano for appearance sake, while being firm, crisp, and sweet. There is Mrs Pearson standing well out in the white Grapes, and having quality, as well as other desirable properties; but, as a rule, the black Grapes hold the sway when neither Muscat of Alexandria or Canon Hall Muscat are in the race. There must be no deficiency of moisture in the border, and the atmosphere not allowed to become stagnant, but have enough warmth, with air, to keep it in motion, the temperature not being allowed to fall much below 50° until the leaves fall.

Vines not Ripening the Wood.—Any that are not yet hard and brown in the wood should have a temperature of 60° to 65° by artificial means, with a little air constantly. The heat from sun influence may run up to 85° or 90°, only let there be enough air to insure a circulation. The laterals should be reduced by degrees, bringing them down to the principal buds; and when there is no danger of starting these, the shoots may be

shortened to about two leaves above the pruning buds. This will cause the latter to plump, and by keeping the house rather warm by day, with ventilation, and turning off the heat at night, with free ventilation, the Vines will go to rest.

Renovating Vine Borders.—Where the soil is of a suitable nature and the cultural treatment proper, Vines flouri h for an indefinite period, but they are mostly planted in artificial borders and the roots confined to limited areas. These conditions result in the soil becoming defective in nutrition and sometimes unfavourable as a rooting medium. Thorough renovation in ordinary cases is desirable, but a partial renewal of the soil, or such portion of it as will secure active feeders, is generally attended with satisfactory results. Where Vines, therefore, are not in a satisfactory condition, no time should be lost in removing the soil down to the roots and picking it from amongst them, so as to displace as much of the old stuff as possible with fresh compost, and it is best effected whilst the leaves are upon the stems, but not before they have performed their functions to the extent of perfecting the buds and wood. In case the border is found very unsatisfactory, and the roots few and deep, it will be necessary to remove all the soil and renew the whole border, commencing with the drainage, which should be clear and 9 to 12 inches deep, with a 3-inch layer of fine material on the top, old mortar rubbish freed of pieces of wood answering perfectly. There must be a drain under the drainage to carry off superfluous water.

The soil should consist of the top 2 or 3 inches of a pasture, where the staple is a good yellow or hazel loam with one-sixth of old mortar rubbish, one-twelfth of charred refuse or wood ashes, and one-hundredth of quarter-inch bones, all well incorporated. Two feet depth of compost is ample, and the roots should be laid in the top foot and in layers according to their inclination, encouraging those from near and at the collar by laying them just beneath the surface, making the whole compact, and having the soil moderately dry. If the roots are inside and outside one part may be done one year and another the next without any danger of loss of crop. Take care to preserve all the roots practicable, merely cutting off broken and paring bruised ends smooth, and to keep them as much as possible from the drying influences of the atmosphere whilst the operation is in progress. Afford a good watering to settle the soil about the roots, then sprinkle in each square yard 4 ozs. of some approved fertiliser, mulch with about an inch of short manure, and cover outside borders with a few inches thickness of leaves with a little litter over them.

THE KITCHEN GARDEN.

Cabbage. The earliest raised plants ought now to be strong enough for transplanting, and already large breadths are out in some districts. It sometimes happens that the earliest raised and planted bolt the following spring, while others raised later have succeeded admirably. The grower will, therefore, do well to make successional sowings and plantings. The plan of succeeding spring-sown Onions with Cabbage, if not adopted previously, should be given a trial this season. Ground well prepared for Onions is, as far as fertility is concerned, in admirable condition for Cabbage without the addition of more manure of any kind. It is also best left undug, comparatively solid ground producing Cabbages with good hearts and fewer coarse outside leaves than is the case when they are grown on loose, rich ground. If hoed and cleared of weeds when the Onions were pulled, and again hoed on a bright day prior to putting out the Cabbage plants, the surface will be freed of weeds and the ground fit for cropping. Slugs are troublesome among newly planted Cabbage. Dusting the plants when damp with soot and lime and occasional hoeings among them are good remedies.

Endive.—Well blanched Endive is now in demand for salads. Not till the heart is well developed ought Endive to be blanched for use. It may be tied up similarly to Lettuce, and covered with inverted flower pots with their drainage holes covered; or fully grown plants may have boards or slates laid on them. Where they are in beds tying up and covering with mats answers well. At this time of year it takes from a fortnight to three weeks to blanch Endive properly, and only enough should be covered at one time to meet the demand for a week. It is yet full early to lift and store Endive in quantity, but it is well to be prepared for emergencies. Temporary protection may be afforded by dry bracken, strawy litter, hay, or mats.

Lettuce.—With the introduction of the early hearting Cabbage Lettuces has gone the necessity for taking so much pains with the raising and wintering of plants of Brown Cos and other varieties for planting out the following February or March. Where large quantities of Lettuce are wanted it is yet advisable to continue the plan of raising abundance of plants in the autumn. In some districts the Brown Cos varieties, if not too far advanced in growth, frequently pass through the winter uninjured, some duly planted out, and the rest in the beds where raised. Where these succeed well is in rows midway between lines of late-planted Strawberries, and which, market growers' fashion, are not to be allowed to fruit next summer; and they may yet be planted out on open, well-prepared ground generally. All things considered, sowing seed later in frames, and wintering the plants where raised, is the most reliable plan. Frames or cool pits that have been recently occupied by Cucumber, Melon, or Tomato plants may be utilised for the purpose. Frames generally should be given a sharp slope to the south, and the 6 inches of light loamy soil intended for the Lettuces should be raised, by means of other soil, or a solid mass of old hotbed manure, to within 5 inches of the sashes. The second week in October is soon enough to sow, and thin broadcast sowing is preferable to drilling in the seed. The sashes should be kept on till the seed has germinated, afterwards giving abundance of air. Additional protection should be afforded whenever a severe frost is imminent.

Tomatoes.—Where much wet weather was experienced during August open-air Tomatoes are, and have been, badly overrun by the Potato disease. Those least affected owe their comparative immunity from disease to the fact that the plants were sheltered or kept drier by wall copings. In any case the time has arrived for cutting all the late or green fruit in bunches, hanging these up in a dry warm house or kitchen to ripen. The half-grown fruit ought to be turned to good account in the making of pickles.

Crops Under Glass.—Much fruit is still hanging on the old plants, and this ought not to be sacrificed. In most instances the house room is wanted for Chrysanthemums and other winter-flowering plants, but this need not necessarily involve rooting up the Tomato plants. The fruit ripens much better on the plants than off them, and the way out of the difficulty is to trim off the Tomato leaves and superfluous growths. Younger plants ought to be carrying crops already well advanced toward ripening as well as successional clusters. If growing in pots, boxes, or narrow borders they must be fed liberally at the roots, otherwise the flowers now opening will fail to give fruit. The best crops are produced by plants trained thinly up the roofs, and these must be kept free of all side or superfluous growths. On the least signs of their becoming too weak to continue setting crops top them beyond the last bunch of flowers that are showing. Keep the plants constantly moist at the roots without slopping much water about the house. Disease will not be troublesome if the houses are kept warm, dry, and airy. Distributing the pollen by means of a camel's-hair brush, or by smartly tapping the stems of the plants towards noon every day, is a good aid to fruit setting.

THE BEE-KEEPER.

Storing Spare Combs.

It will be necessary now to devise some means of storing all spare combs where they will be free from the wax moth until required for use again another season. It is a well-known fact that if the combs are left exposed in a damp place throughout the winter the wax moth will play such havoc with them that they are practically useless, except for melting down. But so much of the wax will have been consumed that they hardly pay for the trouble, and as wax extracting, even at the best, is not one of the most pleasant operations in connection with bee-keeping, a novice may at the first attempt with moth-eaten combs be inclined to give the business up in disgust. It is, therefore, worth taking a little trouble in storing the combs, so that they may be as clean and sweet the following spring as when stored away the previous autumn.

There are various ways in which this may be successfully carried out. A cupboard in a room in which there is a fire occasionally answers the purpose admirably. If the shelves are covered with paper it is an advantage, as any débris from the combs may be cleared away with the paper on the removal of the combs. Place the combs in the same position they occupied in the hive, and a little air will then pass between them. This is a much better plan than laying the combs on each other. On every shelf place a few lumps of naphthaline, and cover the whole with sheets of paper; this will exclude the dust, and the naphthaline will keep the wax moth away.

The plan I invariably practise, and it is within the reach of all, as the expense is nominal, is to obtain some large boxes. These are placed in a dry position, and lined temporarily with paper. The bottom of the box is covered with a piece of calico or some similar material, which is well sprinkled with carbolic acid. The box is then filled with combs, which are closely covered with another piece of calico similarly treated. The lid of the box is placed in position, care being taken that mice cannot gain an entrance, otherwise they will soon ruin a number of combs, even if there are no stores in them. Combs treated in this manner will remain in good condition for at least a year. No insects will exist where there is a strong smell of carbolic.

If during the winter there is any fear of the strength of the carbolic escaping from the box the covering on the top of the frames may be removed and sprinkled at any time. It is advisable to expose the combs to the air for a few days before using them, otherwise the bees may not take readily to them. Clean tough combs being so useful for extracting purposes, a store of them in hand is an advantage to bee-keepers.

Unsealed Sections.

A correspondent writes:—"I have several partly filled sections. Would it be an advantage to store them for use another season without extracting the honey?" All unsealed sections should be passed through the extractor on their removal from the hive at the end of the season, and fed back to the bees. If unsealed stores are left on the hive for a few weeks after the honey flow is over the bees will

carry it down into the brood chamber, and the bee-keeper will be spared the trouble of removing it. But I do not recommend this plan, as I have found the bees invariably do much better when the supers are removed after the honey flow is over, and all necessary feeding done at once. It is not advisable to store sections having unsealed honey in them with a view to using them another season, as the honey being unripe would ferment, and instead being a help to the bees would only prove a hindrance, as they would remove it before placing new honey in the cells.

After the sections have been passed through the extractor they may be placed on the top of a colony to be cleaned of any honey adhering to the combs. If the sections only contain a small quantity the bees would clean them out without the trouble of placing them in the extractor. If this is done evening is the best time for the operation, as they will be quite dry the following morning and in good condition for storing.

Reduction of Entrances.

It will be an advantage to keep the entrance to all the hives reduced for a few weeks longer, an inch will be quite sufficient at this season. Owing to taking this precaution in August no robbing has taken place; wasps, though, are ever on the alert, and the fine weather experienced during the past six weeks has had the effect of causing a great increase in these pests. Early in the season few wasps were visible, but latterly they have increased at a rapid rate. If wasps once gain an entrance to a colony of bees they will soon rob them of their stores. By reducing the entrance to the hives the inmates have a much better chance of keeping intruders out than if it were the full width. The nights are now much cooler; frosts may be expected at any time, and with the advent of frost stocks of bees will not be much troubled with wasps.—An English Bee-keeper.

TO CORRESPONDENTS

*** All correspondence relating to editorial matters should, until further notice, be directed to "The Editor," **8, Rose Hill Road, Wandsworth, London, S.W.**, and **NOT** to Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Bothy Customs (*Young Gardener*).—According to your narrative you appear to be always on duty. That is one extreme; the other is never on duty—men out of situations. Reason, mutual comfort, and prosperity are to be found between those two extremes. Your letter shall have further attention.

Chrysanthemum Sport (*A. Robertson*).—The sport from C. G. Wermig is a flower of much beauty, and we think distinct from any at present in commerce. The florets in Mrs. Hawkins and Mrs. Burrell are pointed, while in your flower they are round ended and of considerable breadth. We think the variety is a promising one, and recommend you to submit flowers to some trade grower and get his opinion thereon.

Chrysanthemum Disease (*A. E.*).—Your plants appear to be attacked by a fungus said to be new to the Chrysanthemum, and first referred to in the *Journal of Horticulture* by Mr. Abbey. It is a serious affection. Syringe at once with sulphide of potassium, half an ounce to a gallon of water, laying the plants on their sides, so as to get at the spores, taking the plants outside, as the sulphide smells badly and discolours paint; or use permanganate of potassium, 1 oz. to 3 gallons of water. This will not hurt anything but the fungus, though it will dye the flowers its own colour, or stain them. Anti-blight powders applied *early* act as preventives. Mr. Abbey will probably have something more to say on this great scourge in due time.

Chrysanthemum "Crown of Thorns" (*R. Brown*).—Presumably the variety is Madame Carnot, which is addicted to the production of extra growth shoots in the place of developing flower buds when the plants are immature and the buds "taken" too early. The latter in the case of this variety would be so. Hence the growth formation instead of bud swelling.

National Chrysanthemum Society—Rules for Judging (*W. G.*).—For the catalogue of the National Chrysanthemum Society you should write to Mr. R. Dean, Ranelagh Road, Ealing. The judging code is published by the Royal Horticultural Society, and if you send 1s. 1d. to the Secretary, R.H.S., 117, Victoria Street, Westminster, it will be forwarded to you post free.

Scots Fir Shoot Bored by Insects (*W. H.*). — The beetle (we only found one) is the Pine beetle, Hylurgus piniperda. These have bored through the side of the shoots and eaten their way for an inch or two along the pith, some hibernating in them, but most on the ground amongst rubbish. The tunnelling is not for breeding, but feeding purposes. You ask for a remedy. The best we have tried is to cut off a quantity of young Scots Fir tops, thinning off all the branches, and lay these traps about in the young plantation, but so that the under side will not rest on the ground. This being done in autumn, the female beetles lay eggs in them when the time comes round, and by collecting them at the end of May or during June there will be many of the creatures under the bark, when burn them.

Peaches for Wall Case (*Peach House*).—It would certainly be better to raise the wall a foot or 18 inches or even 3 feet, and then have a lean-to roof, the house not less than 7 feet 6 inches wide. We should have front lights 3 feet in height, or rather 18 inches of glass and a foot of wooden ventilator below, this part made to open from bottom outwards by means of crank and lever movement, and at the top of the house 2 feet 6 inches wide lights the whole length of the structure, and lifting upwards from the bottom by similar movement to the front lights. This would save much time and give thorough ventilation, an important matter in growing either Peaches or Tomatoes. The former would be confined to the back wall; then you would have the front for the Tomatoes, taking care that these did not shade the trees on the wall, then you could grow both well, as we have done for many years. The best very early Peach is Alexander, followed by Hale's Early (Dr. Hogg you have, being very good) followed by Dymond (Grosse Mignonne), also Bellegarde, excellent. Your Nectarines could not be bettered unless by adding for very early, Early Rivers, and Humboldt to come in before Pineapple.

Irish Peach Apple (*L. H. C.*).—This Apple, like the Cornish Gilliflower and some others, is prone to bear at the ends of the shoots, and these, therefore, must not, after a tree is formed, be systematically shortened. There is in fact, and as a rule, a disposition on the part of most pruners to shorten the extension branches of trees too severely, this resulting in an overabundance of succulent growths, by which numbers of trees are "choked." If your tree has become too crowded thin out some of the branches, so that the leaves of one do not touch those of the other, choosing for removal the least promising as fruit bearers, and you may do this at once. If the tree has got into a stubborn state, making little fresh growth, and if more is needed for invigoration, you may cut off the ends of a few branches here and there—say, about one-fourth at regular distances over the tree—to the first clear wood you can find behind the terminal blossom buds. This may result in fresh growths pushing for producing healthier bearing tips, when some of the older and more exhausted may be removed. By thoughtful action on those lines a tree may be kept healthfully productive, especially if, as may be needed, a few pailfuls of liquid manure be given to the roots now and at any convenient time. The individual peculiarities of varieties of fruits cannot be treated in small works, in which space is so limited that it has to be turned to more generally useful account.

Muscat of Alexandria Vine Roots (*A Constant Reader*).—The insects in the soil are woodlice, and may possibly injure the Vines by eating the young rootlets. The roots themselves are healthy, but evidently in too close and wet soil, otherwise there is nothing wrong with them. We do not know where you could secure a free analysis of the soil. If the roots are deep it would be advisable to lift them, relaying in fresh soil nearer the surface. To secure plenty of fresh rootlets you may notch the strong roots at 18 inches distance apart, making the transverse cut on the side of the Vine and the sloping as the direction of the roots. If this were done it would give much better value than analysis, as it is action that is needed on sound cultural lines. Of course the analysis would indicate the contained elements of the soil, but afford small, if any, clue as to which and to what amount available, leaving the more important question of staple untouched. So far as we can see the soil needs lime, say 1¼ cwt. per rod, which we should procure fresh, break up so as to spread evenly, and leave on the surface to air-slake, and after a month or six weeks point into the soil as evenly as possible without injuring the roots. If in a bad state we should lift the Vines, as before stated, and give them a fresh start in sound material. The soil appears rich and good, only needing lime and opening material, such as calcareous gravel. This is often better as a dressing for Vine borders than manure through the staple being too close, hence, as you say, sticky, mud-like, and deprived of air. Let it in, with lime, and having efficient drainage, all would go well, as it appears to us, with the Vines.

EDITORIAL NOTICE.—It is particularly desired that all communications, parcels, catalogues, and newspapers intended for the Editor, be sent direct to 8, Rose Hill Road, Wandsworth, S.W.

The Thomson Memorial (*C. B. E.*).—We know that presentations have been worthily made to Mr. David Thomson, but do not remember whether that which you have in view was among them. As you clearly know to whom to write on the subject, would not a direct application be the best means of acquiring authoritative information? The Rose question cannot be attended to this week.

Diseased Tomato (*A. T. S.*).—The fine fruit is attacked by black spot or stripe fungus (Macrosporium lycopersici) and pushing out growths—the light-coloured substance. The mycelial hypha is descending into the flesh, and making for the seed cavities, where arrived, it fixes on the seeds, and certainly goes over with them in the integument; then, when the young plant starts on its own account, the parasite wakes up, and, entering it, causes it to die off without "cause or reason." This is a form of "curl"—"sleepy disease" or "sudden collapse." It is the worst of all Tomato diseases, and can only be avoided by clean seed, and preventing, as far as possible, moisture hanging on the fruit by giving plenty of air, some always with a gentle warmth in the pipes. Light dustings with any of the fungicides advertised act deterrently; but the chief art is keeping moisture from settling and remaining on the fruit.

Names of Fruits.—*Notice.*—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. *In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing.* The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. *They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state.* (*H. F. F.*).—Round Winter Nonesuch. (*G. S.*).—1, Cat's Head; 2, Gravenstein; 3, Ecklinville Seedling; 4, unknown. (*E. H.*).—1, Souvenir du Congrès; 2, Duchesse d'Angoulême; 3, Beurré Superfin; 4, Doyenné du Comice. (*C. A.*).—1, New Hawthornden; 2, Hollandbury; 3, Newton Wonder; 4, Ribston Pippin; 5, Gascoyne's Scarlet Seedling; 6, Warner's King. (*P.*).—1, Sandringham; 2, Old Nonesuch; 3 and 4, evidently the same variety, a local seedling. Thank you very much for the bunches of fine Violets gathered from between the Apple trees. (*Wm. Thompson*).—Nos. 1, 2, and 3 are either King of the Pippins or seedling forms of it; 4, Golden Harvey, also known as Brandy Apple; 5, not known nor worthy of a name; 6, Pearson's Plate; 7, Beurré Hardy, poor specimen; 8, Swan's Egg.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*R. B.*).—1, Aster cordifolius elegans; 2, A. fragilis carnea; 3, unknown. (*R. W.*).—1, Begonia maculata; 2, Escallonia macrantha. (*P. C. L.*).—1, Ixora Fraseri; 2, Solanum jasminoides; 3, Eucharis candida; 4, Mina lobata; 5, Cypripedium selligerum. (*E. G.*).—1, Coccaloba platyclaba; 2, Campanula isophylla alba; 3, Justicia carnea. (*Inquirer*).—1, Helenium autumnale; 2, Helianthus rigidus Miss Mellish; 2, Rudbeckia nitida; 4, Solidago altissima; 5, S. latifolia; 6, Funkia Sieboldi. We do not think hares or rabbits will do any material injury to the bulbs. (*J. B.*).—1 and 2, Erigeron pulchellum; 3, Aster novæ-belgii lævigatus. The Apple is New Hawthornden. The other specimen is the larva of the Goat moth.

COVENT GARDEN MARKET.—Oct. 13th.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	1 0	to 3 0	Grapes, lb....	0 8	to 2 0
Cobs	20 0	22 6	Lemons, case	11 0	14 0
Filberts, 100 lbs.	0 0	0 0	St. Michael's Pines, each	3 0	8 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, ½ sieve	0 0	0 0	Onions, bushel	3 6	4 0
Beet, Red, doz.	1 0	0 0	Parsley, doz. bnchs.... ...	2 0	3 0
Carrots, bunch	0 3	0 4	Parsnips, doz.	1 0	0 0
Cauliflowers, doz.	2 0	3 0	Potatoes, cwt.	2 0	4 0
Celery, bundle	1 0	0 0	Salsafy, bundle...	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Seakale, basket	1 6	1 9
Cucumbers	0 4	0 8	Scorzonera, bundle	1 6	0 0
Endive, doz.	1 3	1 6	Shallots, lb.	0 3	0 4
Herbs, bunch	0 3	0 0	Spinach, pad	0 0	0 0
Leeks, bunch	0 2	0 0	Sprouts, ½ sieve...	1 6	1 9
Lettuce, doz.	1 3	0 0	Tomatoes, lb.	0 4	0 0
Mushrooms, lb.	0 6	0 8	Turnips, bunch	0 3	0 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6 0	to 36 0	Ficus elastica, each... ...	1 0	to 7 0
Aspidistra, doz.	18 0	36 0	Foliage plants, var., each	1 0	5 0
Aspidistra, specimen ...	5 0	10 6	Fuchsias, doz.	3 0	5 0
Chrysanthemums, doz. ...	4 0	9 0	Heliotropes, doz.	3 0	5 0
,, ,, single plants	1 6	2 0	Lilium Harrisi, doz.... ...	12 0	18 0
Coleus, doz.	2 6	4 0	Lycopodiums, doz.	3 0	4 0
Dracæna, var., doz.... ...	12 0	30 0	Marguerite Daisy, doz. ...	4 0	9 0
Dracæna viridis, doz. ...	9 0	18 0	Mignonette, doz.	4 0	6 0
Euonymus, var., doz. ...	6 0	18 0	Myrtles, doz.	6 0	9 0
Evergreens, var., doz. ...	4 0	18 0	Palms, in var., each... ...	1 0	15 0
Ferns, var., doz.	4 0	18 0	,, specimens	21 0	63 0
Ferns, small, 100	4 0	6 0	Pelargoniums, scarlet, doz.	2 0	4 0

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms ...	3 0	to 5 0	Lily of the Valley, 12 sprays	1 0	to 2 0
Asparagus Fern, bunch ...	1 0	2 6	Marguerites, doz. bnchs....	2 0	3 0
Asters, bunch	0 2	0 6	Maidenhair Fern, doz. bnchs.	4 0	8 0
Bouvardias, bunch	0 6	0 8	Mignonette, doz. bnchs. ...	2 0	4 0
Carnations, 12 blooms ...	1 0	3 0	Orchids, var., doz. blooms	1 6	12 0
,, doz. bnchs. ...	3 0	6 0	Pelargoniums, doz. bnchs.	4 0	6 0
Chrysanthemums, 12 bnchs.	4 0	6 0	Pyrethrum, doz. bnchs. ...	1 6	4 0
,, ,, 12 blooms	0 6	2 6	Roses (indoor), doz.... ...	0 6	1 0
Cornflower, doz. bnchs. ...	1 0	2 0	,, Tea, white, doz. ...	1 0	2 0
Dahlias, doz. bnchs.... ...	2 6	6 0	,, Yellow, doz. (Niels)	1 6	4 0
Eucharis, doz.	2 0	3 0	,, Red, doz. blooms ...	0 9	1 0
Gardenias, doz.	1 6	2 0	,, Safrano (English) doz.	1 0	2 0
Geranium, scarlet, doz. bnchs.	3 0	4 0	,, Pink, doz.	1 0	2 6
Gladioli, doz. bnchs. ...	6 0	21 0	,, outdoor, doz. bnchs.	3 0	6 0
Lilium lancifolium, buch.	1 6	2 0	Smilax, bunch	1 6	2 6
Lilium lancifolium, short, per 12 blooms	1 0	1 6	Sunflowers (various) ...	2 0	4 0
Lilium longiflorum, 12 blooms	3 0	4 0	Tuberoses, 12 blooms ...	0 3	0 4
			Violets, doz. bnchs.	1 6	2 0

GARDENERS' CHARITABLE AND PROVIDENT INSTITUTIONS.

The Gardeners' Royal Benevolent Institution.—*Secretary*, Mr. G. J. Ingram, 50, Parliament Street, London, W.C.

United Horticultural Benefit and Provident Society.—*Secretary*, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

Royal Gardeners' Orphan Fund.—*Secretary*, Mr. A. F. Barron, The Royal Gardeners' Orphan Fund, Chiswick, W.

BIRDS, INJURIOUS AND OTHERWISE.

This subject is a very wide and vexed one. So few persons seem able to take a steady, clear view of the matter; prejudice is so strong, and this prejudice so often springs from ignorance, and ignorance on this topic exists in little suspected quarters. If anyone live in or about a village, and will be at the trouble of looking at a field of ripening corn, say Wheat or Barley, he will not require any words of ours to make him understand fully the ravages committed by that fearless little bird, Passer domesticus.

The sparrow appears on the scene as soon as ever there is an atom of nourishment to be got out of the grain, when it is still only a mass of sweet milky substance, and he harrasses it till the vexed husbandman has got the remainder safely stacked. It is not altogether what he eats, but what he destroys; ears, bent stalks, broken as though there had been the heaviest of hailstorms. He comes, not singly, but in battalions, in myriads—like the sand of the seashore—and his visits also are not transitory. He seems, too, to bear a charmed life—too wary for traps; too numerous for gunpowder; too strong and tough for hard winter frosts; and too cunning to build all his nests within reach of boys, be they never so active.

Another grave charge is laid at his door—by his pugnacity he fairly drives away other birds of the swallow and martin families, which rank amongst the best of our insect destroyers. We know Wheat growing is about played out, but somehow yet we have found no efficient substitute to entirely take the place of Wheat

straw, and whole acres are completely destroyed by the ever wakeful lark, which is on the new sown corn earlier and later than any merely human tenting boy. These birds are, we believe, confined to certain areas, and where they do exist work irreparable misehief. Among other small bird pests you may fairly rank the finch tribe, which are most abundant in every hedgerow; in fact, next to the sparrow, they are the most destructive birds we have, and their numbers seem ever to be on the increase.

The greatest pest of all, and a steadily increasing one, is found the hordes of wood pigeons, a most ravenous bird, and one hard to destroy. Like the locust of old no green thing escapes him, but if he has a special weakness it is for the young and tender Clover, the seed of which has cost so much per pound — Clover so difficult to tide over unforeseen contingencies and so valuable to the farmer whose main hope and stay are his sheep.

Shoot him, you say. Well, just come and try. Set up decoy birds, hide yourself all day in hedge or hut, ask your friends to help, be very successful and bring home at least fifty. "What are these among so many?" Only a mere handful, and the birds are warier than ever. No sooner is the corn ripening than they are there, trampling and breaking down acres, leaving the crop as flat as though rolled. If you can get hold of a few young birds now they are delicious eating, but this is only a poor revenge, as you are eating gold drawn from what ought to be your golden grain. Then, again, should a sharp spell set in, and food become scarce, your Turnip fields will furnish forth many a good meal. Nine-tenths of these pigeons are either "Hardy Norsemen" or canny Scots. History repeats itself, we feed and nourish the northern invader.

Rooks, too, are foes to fear, but not foes so implacable as the wood pigeon. We do believe, and know, that the rook sometimes comes as a friend to rid us of the dreaded wireworm, but in return he takes toll of our cornfields, harrasses the newly formed Potato, and worries the life out of young Turnips. Perhaps, however, that last accusation should be modified; no aged rook will recklessly pull up a young Turnip unless he is absolutely sure that there he will find a wireworm, in which case the plant would never have come to maturity. Young rooks are the offenders here; it is their "first season" and they have much to learn, the lesson proving an expensive one to the farmer.

Our minor industries suffer, too, from the smaller birds. Unless fruit is grown in great quantities it is impossible without elaborate netting to reserve even a portion for the grower. This year we noticed, too, for the first time, that birds were feeding on the ripe Victorias as well as on the early summer Apples, such as Irish Peach. For the Peas, too, there is an adversary. A goodly row will be tattered, torn, and ravaged in a very short time by the active hawfinch. If we count these birds our enemies, we must in all fairness tell something of the good reaped by the annual visit of the black-headed gull. Alas! that it is not more common, for its services are of untold value.

Coming, as it does, about March 6th, and staying till the last week of July or 1st of August, the food it requires is enormous. For worms and grubs it follows fearlessly the ploughman with his newly turned furrows; it haunts the grass land, and rids our fields of pests innumerable. As the young are hatched the need of a good food supply increases tenfold, and the busy birds scour the country day and night. After rain the fields are literally alive with these faithful white-winged helpers.

Do you ever give a thought to the chattering vivacious starling, so active in habit, so brilliant in his black and gold plumage? He is a gregarious bird, too, and visits us in large flocks. If the winter be very severe we lose sight of him, or at least only a few stragglers remain. This open season has been all in his favour. His bill of fare is principally insects, grubs, and the like. He may pick up a bit of grain in the stack yard, or be tempted (and who is not?) by a ripe Cherry; but it really only comes as a well-earned wage. We should sadly miss him if by folly or for fashion he were ever exterminated.

Much has been said and written about preserving the balance of power in Europe. People and kindreds are happier and safer if no particular nation has the ascendancy, and so in the kingdom of Nature. A wise Providence, consulting the best interests of the many, made this world one harmonious whole. Man, the creature of a day, upsets that harmony, and consequently suffers. Why are we plagued and harrassed by these hordes of small birds, to say nothing of the inroads of rats and mice? How rarely do you see any of the hawk tribe save on the keeper's gibbet? And no longer does the "Ivy-mantled tower" prove a home and refuge to the "moping owl." He used to be a familiar object in tower, barn, and hollow tree, and he did much to check the smaller birds and mice. The hawk, too, must eat to live, and not even the most rabid keeper can accuse him of feasting entirely on young partridges or hand-reared pheasants.

We do not recognise our best friends, and kill and exterminate those whose life is spent in doing us service. Where do you find a better mouser than an owl with a nest of fluffy, solemn-looking babies? No one knows better than the farmer the havoc and destruction the prolific mouse can work in a stack yard, and no man should be as strict a preserver of these useful birds as he.

WORK ON THE HOME FARM.

We have been thrashing Barley, and find the yield as disappointing as we had been warned it would be by others who had tried it. There is plenty of bulk to thrash, but the grain is too small, with too much tail corn to yield satisfactorily. Quality and colour are good, and 33s. per quarter is the best price we can make. A little more size would have increased the value to 40s., or near it. Four quarters per acre at 33s. does not multiply into anything very remunerative.

We have tried lifting Potatoes, but they are not fit, and we have had to stop. Here, again, the influence of the summer drought is shown in the smallness of the numerous tubers. Four tons per acre is the highest estimate of the quantity deliverable, and four tons at 60s., the present price, is another total very far from satisfactory.

The heavy rain of last week has been followed by beautiful weather, with just a slight suggestion of frost. This warns us to have the roots up as soon as they are ready. Some farmers are talking of taking their Mangolds up, but they are very full of growth yet, and are certainly not fit to store.

The difficulty of last year as regards the scarcity of hands for Potato picking has induced the school authorities of many parishes to alter the arrangements for the summer holiday, and after giving a fortnight during the early part of harvest, are giving three weeks in October. This will be a great boon to both farmers and parents, as many children who have not passed the necessary standard are quite able to pick up Potatoes after a digger.

Sheep are getting well on Turnips, and we have just been dipping them. Ewes are now with the ram, and must be kept in thriving condition to insure a good fall of lambs. A little Barley, say ½ lb. per head per day, is a good thing for breeding ewes just now.

Young cattle under twelve months must be closely watched to see that they do not lose flesh; they can run off very quickly, and if allowed to run out during the day, they would be better up at night with an allowance of hay, even if it be but a small one.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

DATE.		9 A.M.					IN THE DAY.				
1897. October.		Barometer at 32° and Sea Level.	Hygrometer. Dry.	Hygrometer. Wet.	Direction of Wind.	Temp of soil at 1 foot.	Shade Temperature. Max.	Shade Temperature. Min.	Radiation Temperature. In Sun.	Radiation Temperature. On Grass.	Rain.
		Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Inchs
Sunday	3	30·180	54·8	49·7	N.	55·2	62·1	51·6	106·9	48·0	—
Monday	4	30·350	51·8	48·0	N.	53·7	54·7	44·9	81·3	39·9	—
Tuesday	5	30·449	5 [illegible]·9	45·7	N.E.	52·4	55·9	41·4	88·1	34·6	—
Wednesday..	6	30·473	47·2	44·2	N.	50·7	55·7	36·1	85·9	30·8	—
Thursday....	7	3 [illegible]·452	36·1	36·1	N.	49·0	53·6	31·9	83·1	29·8	—
Friday	8	3 [illegible]·295	48·4	44·0	W.	47·6	55·4	34·8	86·2	30·2	0·043
Saturday	9	30·176	51·3	48·1	N.W.	49·1	58·1	46·2	97·7	39·5	—
		30·339	48·6	45·1		51·1	56·5	41·0	89·9	36·1	0·043

REMARKS.

3rd.—Rain from 2 a.m. to 5 a.m.; cloudless morning and bright afternoon and evening.
4th.—Bright sun from sunrise to 11 a.m.; overcast with frequent drizzle in afternoon; fair evening.
5th.—Generally sunny, but occasional cloud.
6th. Fine and pleasant, with frequent sunshine.
7th. Fog rather dense till 11 a.m., then bright sun; bright night.
8th.—Fair, with occasional sun during day; rainy from 7.30 p.m. to 9 p.m.
9th.—Fair early; generally sunny from 9 a.m. to 2 p.m., and cloudy after.

Temperature much below that of the previous week, and decidedly below the average. Scarcely any rain.—G. J. SYMONS.

Journal of Horticulture.

THURSDAY, OCTOBER 21, 1897.

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INTELLIGENCE IN PLANTS.

THE DISTRIBUTION OF SEEDS.

FOR many years past I have thought that a full account of the various methods pursued by Nature in providing for the maintenance of the plant world would be a very interesting one, but I had little idea of its extent. After a slight investigation, and a gathering up of various notes, I began to think it would take a good sized volume to give a clear and comprehensive idea of it. Since then I have come to the conclusion that it would require a library to adequately set forth the mysteries of reproduction in plant life and the amazing intricacies involved in the very numerous methods adopted for distributing the seeds abroad.

At the first blush one would not think there were likely to be many ways for a flower to transmit its pollen to the right quarter. But in point of fact every species of flower has some speciality of its own, always quite effective, and arranged with an ingenuity that compelled Darwin to cry out, "The more I study Nature the more I see that she is infinitely ingenious in arranging slight, so-called accidental, differences for the plant's benefit, and that, in fact, these ingenuities transcend incomparably the most fertile imagination that the most imaginative man can suggest with unlimited time at his disposal."

This you will admit is remarkably strong language, and when we consider it is applied to our everyday plants and their flowers, which we have for ages kicked hither and thither, and thrown over the wall without an idea that there was any particular mechanism concealed on their persons, it is humiliating, and shows very conclusively indeed how blind these clever bipeds, known as human beings, really and truly are.

The Chelsea philosopher, Thomas Carlyle, was even nearer speaking the truth than he thought he was when he classed us as mostly fools. We go chattering clumsily through a world of beauty, more than artistic, and see little or nothing of it, just because we are immersed and submerged in our own little selves.

The scraps of information I have to give are very scrappy. There is no attempt at scientific

arrangement, no sort of sequence in them—I give them as I came across them, or picked them up.

Some day another Darwin will arise and give us the evolution of plants in full, and astonish the world quite as much as the original Darwin did. Several good and daring attempts at this have been made already. A series of delightful papers appeared, I think, in "Knowledge" some years ago, but a comprehensive pronunciamento is coming, and soon, for the times are ripe for it.

We will begin with the Spotted Orchis. In this flower the stem supporting the pollen bag has its base in a disc, beneath which are two walls of very sticky matter. A mere touch from the proboscis of an insect, if it be the right insect, and things are all ready, causes a spasmodic, electric, or mechanical rupture of the membrane enclosing this sticky matter, and it adheres to the insect, which then elopes with the pollen bag and leaves the flower. By this time the sticky matter is setting like so much cement, and by some wondrous arrangement the pollen bag, which at first sticks out at a right angle, changes to an acute angle by the contracting of the disc, and then the insect can enter another flower, leave the pollen it is carrying at the right place, and depart with another pollen bag.

The pollen bags thus carried off always fall forward, never backward or sideways, for if they did not the insect could not enter the next flower. The insect, again, must alight in the right place to get at the nectary, which is a small vessel of honey. The insect probably has no idea that it is being made use of. The honey is there, it can smell that, and goes for it, and the plant clearly knowing all about it so arranges its nectary that there is the right amount of time to load it up with the pollen before the insect succeeds in getting the honey.

In the Orchis pyramidalis, the disc in which the stem carrying the pollen bag has its base in the shape of a saddle, which grasps the intruding proboscis, and undergoes various changes of position until the saddle clasps tighter and tighter and curls inwards, so that within eighteen seconds it looks like a solid ball. In this case two pollen bags arrange themselves so as to insure the pollen being affixed to the sticky mass in the next flower. The insect cannot get its proboscis in askew; if it could the saddle-shaped disc would not act properly, and the operation would end in failure.

When all is ripe in this flower you can impose upon it with a bristle. Apparently, it can tell a bit of wire or a needle, and will not act; but when Darwin got a bristle and inserted it the saddle gripped, and out came the pollen bag. A friend of mine says he succeeded with a thin programme pencil sharpened to a fine point. Inserting this in the bell of the field Orchis he, on withdrawing it, saw it covered with pollen, which in forty seconds was ready for its work in the next flower, only the programme pencil was wingless. At first the pollen adhered so fast that it could not be got off easily; but after a lapse of time needful for the bee to do its work, the cement dried and lost its elasticity. Another curious thing about the Orchis pyramidalis is the fact that it manages to attract visitors both day and night; the day visitors by the bright purple colour, the night visitors by a curiously foxy smell.

The moths fertilising these flowers do not always gain by the work they do. Greed here, as elsewhere, sometimes overshoots the mark. Darwin saw one with eleven pairs of these pollen bags attached to its proboscis, and thus loaded it could enter no other nectary. It almost seems as if Nature were thinking more of the flower than the insect. How the latter managed to accumulate so many collars and ruffs is not easily imagined. Darwin, however, found no honey in the nectaries of these flowers, and Krunitz came to the conclusion that this Orchid was just trying on a small swindle, and getting the insect to come on a false pretence. Darwin is of opinion that the honey is there, but better concealed, so as to detain the moth in search of it for the requisite time. He found several cunning arrangements in other flowers.

In cases where the matter is sticky enough to hold the pollen mass the nectary is easily reached, there being no benefit in keeping the insect waiting. Why the flower could not, or did not, always arrange things thus requires a considerably greater amount of explanation than I am able to cope with.

The Bee *Ophrys* Orchid is a surprise in all respects. It looks like a bee (just as a Spider Ophrys is like a spider and the Fly Ophrys like a fly), but why it looks like a bee requires some explanation, and why it provides for self-fertilisation still more. Self-fertilisation is the one thing that the greater part of the ingenuity displayed in plant life is intended to prevent; but in this queer little Orchid it is as clearly meant. The pollen bags are so arranged that a gust of wind sends the drooping head of the bag against its own disc. The stem is flexible, and keeps bending in the right direction till the wind rises and completes the work. Darwin says he never knew a case when this plant did not fertilise itself, but he was also quite of the opinion that it was occasionally fertilised by foreign pollen, or it would have perished.

The question of self-fertilisation is a curious one, inexplicable indeed in our present state of knowledge, or rather present state of ignorance. There is abundance of evidence that Nature intends self-fertilisation as a last resort to carry on the species when cross-fertilisation is not achieved. In the Forget-me-not, for instance, the pistil, or female organ, is longer than the corolla stamens, so that an insect alighting with foreign pollen on its body comes in contact with the first, but the corolla and stamens gradually grow up to the pistil, when self-fertilisation is inevitable. In some cases this is impossible, the pollen having no effect, or even a poisonous one, on the stigma of the same flower. Plants, the result of cross-fertilisation, are stronger and larger than those which result from self-fertilisation.

Sometimes the visiting insect gets the pollen attached to its face instead of the proboscis—all depends on the position of the sticky matter. In one case the insect alights on the lip of a flower, which immediately gives way and sinks so low that it seems as if the pollen could not be got at. But when the insect gets inside, the lip of the flower goes back in its place, and in such a way as to insure its brushing the pollen off. In the Marsh Epipactis, the insect, in backing out, touches the broad end of an anther, which then releases the pollen as if there were a spring at work. Darwin in this case tried a long time to unlock the pollen with a feather, but till he touched this particular anther it remained quite fast. This explained why the lip fell when the insect alighted on it. If it had not done so the insect going in that way, instead of coming out, would have brushed off the pollen where it was of no use.—(*Paper read by* Mr. W. PICKARD *at a meeting of the Sheffield Chrysanthemum Society*)

(To be continued.)

PRUNING GOOSEBERRIES AND CURRANTS.

VARIOUS methods of pruning bush fruits are adopted, both good and bad, but as regards the Gooseberry the effects of ill-treatment are not always apparent to the untrained eye, at least for several years, when the value of the plant has been materially decreased. This plant will endure much rough treatment and yet produce its annual crop of fruit. I have seen bushes pruned with shears into rounded mop-heads, still there was fruit to be gathered, though difficult to get at. On the other hand I have known bushes practically left to themselves, no systematic or other pruning being attempted, and berries were had, but in diminishing size and quantity, year after year after the first vigour of youth was passed. When we possess a plant that will endure so much it ought to pay for better treatment, and in fact the Gooseberry responds most readily when subjected to judicious methods. It should not be a question how much it will endure, but how far we can improve it by the best attention. This, I know, is the way in which all true gardeners regard every plant under their charge, but there are some who have not their hearts in the work, and others who are beginners, and so we always find a proportion of carelessness or mistakes that need rectification.

The present is a suitable time for pruning bush fruits, and it should be equally seasonable to relate our experience, and submit observations for consideration. First of all, a word of caution may be given to the inexperienced who may be purchasing Gooseberries, because it has a direct bearing upon the subject we are about to discuss. Whatever age the bushes may be, see that the stem rises several inches clear of the ground, and that there are no buds below the soil level. Why so many Gooseberry cuttings should be made without the removal of the lower buds it is difficult to imagine, for

the extra labour in the proper preparation is slight. Unfortunately, however, many thousands of these undisbudded bushes are sent out annually, with the result that endless labour is caused for which there is no return. I will give the nurserymen the credit of believing that in their own practice they do not follow such careless methods, but in the demand for some sorts their own stocks are frequently exhausted, and they have to procure plants from other sources where due care has not been exercised. It seems a simple matter to dwell upon at such length, but I have been a sufferer through neglect in this matter, and perhaps others may profit by my experience. If there are only a few dozen plants to attend to, it is not a very serious matter to remove the suckers that are constantly arising from the base, but when they number many thousands it practically means that it considerably increases the cost of pruning, and is an absolute loss. Two varieties that are the worst in this respect when not disbudded are Whitesmith and Lancashire Lad; I have seen as many as ten vigorous suckers, each 1 to 3 feet long, from the roots of these, and they are very difficult to remove thoroughly without injuring the roots or stem of the plant. It is really impracticable to cut them off close enough to prevent further growth, and consequently every year the trouble increases. They are always stronger than the central portion of the bush, and in consequence withdraw much nourishment from the fruit-bearing branches.

It does not matter with regard to Black Currants if there is a free growth of shoots from the base; in fact it is an advantage, as it provides a means of renewing the bushes, and compensating for the loss of branches which frequently occur in those plants, but it is altogether different with Gooseberries. The farther the branches are from the ground the more convenient they are at fruit-gathering time, and with some of the spreading sorts the shoots from the base will lie flat upon the soil obviously useless.

Summer pinching of lateral growth in the Gooseberries is to some extent advantageous when it can be done sufficiently early and performed thoroughly, but unfortunately it requires attention at a time when there is much other work in hand, and in consequence in large plantations is only partially carried out or omitted entirely. When the growths from the main stems are shortened early to an inch or two, it undoubtedly serves to concentrate the strength of the bush into the fruit-bearing parts, and reduces the labour of autumn pruning. As a garden practice and for small plantations it is most desirable, but in my own case, and I imagine in many others similarly situated, the early summer labour is of more importance and value in other directions.

The chief considerations in pruning established Gooseberry bushes is to keep them open and free from crowding growths, which are very apt to arise in the centre of the bushes. If they were started as two or three-year-old plants, and were judiciously cut-in to insure due furnishing of the bush, they should have in the second year from planting from six to eight main branches, radiating and ascending from the centre of the bush. These should not cross or approach near each other, and though it is difficult at times to form an ideal plant, it is always possible to prevent crowding, and this will have a great bearing upon fruit development. The side growths from these are shortened to two or three buds, or at the densest part of the bush removed altogether; or if summer pinching is done they will scarcely need any attention, except in some cases a little further shortening.

The points of the main branches need to be reduced in proportion to the strength of the bush and the variety. I make a difference in the treatment of such varieties as Crown Bob and Whinham's Industry for instance. In the former, which produces more slender, relatively weaker shoots, the points are reduced to 2 or 3 inches from the previous season's wood, while Whinham's has the points left 4 to 6 inches long, or in some cases more than that. Even then we frequently remove 8 or 10 inches of growth. After a season or two's treatment in the manner described, the wood that is more than a year old is studded thickly with fruit buds over the whole length.

One other matter should be pointed out, and that is with respect to the buds to which the main branches are cut. All erect-growing varieties like Whitesmith are pruned to a bud pointing outwards, but with some of the more straggling growers it is needful, more especially as regards the outer branches, to prune to an inside or upper bud. When a branch is dropping towards the soil and it is cut to a bud on the under side, the extension is continued in the same undesirable direction, and it may be necessary to cut the whole shoot away. Simple as this practice is, if consistently followed up it effects the general form and usefulness of the bush most satisfactorily.

The same general principles are applicable to Red Currants, but these plants do not give nearly so much trouble after a few seasons' attention. The constant fruit bearing keeps them within bounds, and beyond a judicious shortening of the main branches, and reducing the laterals as with Gooseberries, they take up little time. The fruit-bearing wood is precisely the same as in their thorny relative—*i.e.*, that over one year old, and the branches of well treated bushes may be seen now closely studded with buds. Black Currants have already been incidentally referred to, and it is only necessary to add here that we endeavour to retain all the current season's growth, and to replace old shoots by new ones where possible, for the greater part of the fruit is borne on the young wood. It is as undesirable to have a Black Currant crowded as either the Red Currant or the Gooseberry, but the labour of keeping the former in proper shape is very small compared with the others.—An Old Grower.

NOTES ON BULBS.

Having in two instalments, the last of which concluded on page 340, dealt at some length with the culture of Hyacinths in pots, we may now pass on to other bulbous flowers, which, if not quite so imposing, are equally as useful. Bearing in mind that the same cultural details are in the main suitable for all, it is not now proposed to go into the individual treatment of each. Let the same system be adopted for those that are to be named as was recommended for the Hyacinths, and the chances of success will be excellent. Where a slight variation from those lines has been found advantageous it will be noted, but it is now proposed to deal principally with varieties that have been found the most generally satisfactory. Of course it will be remembered that pot culture is still under consideration, and that it is for this purpose the varieties are named.

Tulips.

These gorgeous flowers are popular with almost everyone, and they can be successfully grown in places where other plants might prove a failure. So far as our experience goes, and we grow some hundreds every year, they differ from Hyacinths in one respect to a marked degree, and that their partiality for water. Of course Hyacinths want large quantities when they are advancing into flower, but the Tulips require more. Personally, I am of the opinion that the cause of these bulbs failing to flower, as they do occasionally, is insufficient supplies of water, and I should much like to know the experiences of other growers on the point. Beyond, then, giving more water, the bulk of our Tulips are treated precisely the same as Hyacinths. Though a few are forced, the major portion of the bulbs are grown for the embellishment of the conservatory in the spring months, for which purpose we find them invaluable.

Those that are grown for early flowering, and which are forced, are never potted in the first instance. Instead of this, the market grower's system of growing in boxes of cocoa-nut fibre refuse is adopted until the plants are well advanced in bud, when they go into the receptacles for perfect development. We have ornamental vases that just accommodate four bulbs, and by selecting those with buds at a similar stage they all flower at the same time, and are thus more effective. It involves a little more labour perhaps, but it is more than repaid at flowering time. With the later ones, which are not used in pots for room decoration, we are not so particular, though we think sometimes that even these would be worth growing in the same manner. For forcing purposes we grow three varieties only of single Tulips, which are the red and yellow, the scarlet, and the white Due Van Thols, the second named being the greatest favourite owing to its bright cheery colour.

Of the Dutch single Tulips we usefully confine ourselves to about one dozen varieties, of which Ophir d'Or, Scarlet Pottebakker, and the white Van Vondel are grown by far the most extensively. For years we have made a feature of these, and never once have we failed to score a success. Others have been tried, both new and old, but we cannot yet find a trio to surpass them, all points considered. Other favourites are Vermilion Brilliant, Proserpine, Le Matelas, Royal Standard, Bride of Haarlem, Keizers Kroon, Joost Van Vondel, White Pottebakker, and Van der Neer. Those that grow tall and produce large flowers, such for example as Keizers Kroon, have a very slender stake placed to each bulb so as to maintain the spike in its proper position. Of single Tulips we made it a rule to place three bulbs in in each 4½-inch pot, and it is occasionally a tight squeeze with the large bulbed varieties.

To double Tulips for pot culture we are not particularly partial, but we grow a few for the sake of the variety they impart to a collection. The red and yellow Tournesol we find consistently good, as also is the old Imperator Rubrorum. Then there are La Candeur, Mariage de Ma Fille, Matador, Murillo, and Salvator Rosa, with each of which we have done splendidly at times. Occasionally others have been added or substituted, but for the main display we depend upon about half a dozen varieties that we know to be reliable. It is almost always imperative to stake the flowers of the double Tulips on account of their great weight, and needless to say it must be done carefully, or the good appearance of the pot of bulbs will be absolutely destroyed. With

these, as with single Tulips, it is essential that abundance of water be supplied during the growing and flowering period.

Crocuses.

Useful as these are for certain purposes when grown in pots, it is in the open ground, or in window boxes that they are the most highly appreciated. However, we make quite a little feature of them in 3½-inch pots, in which we grow about 500. The whole stock is potted at one time, and when they are in flower we stand them about in the conservatory amongst other plants, and they form a change that is always admired by visitors. Their beauty is of the lowly kind as compared with that of Hyacinths, but personally I am extremely fond of them. We grow only four varieties in distinct colours, and generally have the large yellow, Sir Walter Scott or La Majestueuse, with a good blue and a white selected from one of the bulb merchants' catalogues, and we never purchase the same varieties of these two years in succession. In cultivating Crocuses we subject them to precisely the same treatment as the Hyacinth.—H. Rose.

RUDBECKIA GOLDEN GLOW.

With your remarks on page 363 concerning the merits of this as an ornamental plant I quite agree, but it is not a very new plant to English gardens. It was introduced from North America nearly twenty years ago by Messrs. Smith of St. John's Nurseries, Worcester, and offered in their catalogue by the name of Rudbeckia lævigata; thence it came into my garden, and though it does not increase fast, it has had time to find its way into most of the cottage gardens in the parish.

I sent the plant some years ago to Kew for identification, and it was there considered to be a variety of R. laciniata, though it differs in many respects from the type of that species. Asa Gray, in his "Flora of North America," considers R. lævigata of Pursh to be a dwarf form (a foot or two high) of R. laciniata, though he does not seem to know the variety. Our plant does not fit any Rudbeckia described by Asa Gray. Perhaps it may be a hybrid, say between R. laciniata and R. pinnata, or R. maxima. This seems more likely, as I have never been able to find or hear of a fertile seed on the plant, whilst R. laciniata ripens seeds freely in English gardens. It was figured in "The Garden" as "R. nitida," a species the characters of which it will not fit, though that, too, has a var. lævigata (*Nuttal*), said to be distinct from the R. lævigata of Pursh.

The provisional name Rudbeckia Golden Glow is safer than a conjectural specific name, but I think I have seen it in Barr's catalogue called Autumn Glory, and it would be well to obtain consistency in these fancy names. The flowers last remarkably long, often well into November, and few plants make so large a show from so small a base; it has also the merit of flourishing for many years in the same spot without interference.—C. Wolley Dod, *Edge Hall, Malpas.*

[Thus does the good influence of a true flower lover spread and brighten the cottage gardens around him.]

HINTS ON SPRING BEDDING.

The time has already arrived for the beds to be cleared of their summer occupants, and where they are to be filled with bulbs and plants for the spring display not one day should be lost in setting about the work. This is most important for more reasons than one. In the first place, where frost has destroyed tender plants, such as Begonias, Alternantheras, Celosias, and Cannas, with others, they will have a very untidy appearance. Secondly, the weather is at present very favourable for the work, and we cannot expect better; the soil is also warm, and the plants will take to it quickly, and soon establish themselves.

Perhaps the description of a few simple, but effective, beds of last year might be interesting and useful to some of the readers of this Journal who cannot go into elaborate and expensive planting. Some beds planted with Myosotis dissitiflora, and a good sprinkling of Queen Victoria Tulip (white), were very charming; others contained Wallflower Tom Thumb (golden), with Keizers Kroon Tulips, and all were also much admired.

A large bed, filled with the Money Plant (Lunaria biennis), Doronicum plantagineum excelsum, bold groups of dark and yellow Wallflowers, with wide bands of Hyacinths and Tulips, and finished with an edging of Dactylis glomerata variegata and red Daisies, was fine.

Smaller circular beds were planted with yellow Polyanthus and blue Hyacinths, others with red Polyanthus and white Hyacinths. These were very effective.

We have already stocked many of the beds in the following way. Large circular beds with golden Myosotis and scarlet Tulips (Artus); white Pansies and blue Hyacinths; purple Pansies (Cliveden Purple), and white Hyacinths; others with Dielytra spectabilis, Cloth of Gold Pansy, Duchesse de Parme Tulip, with a broad band of Aubrietia græca.

I trust the above simple hints may be useful to those who are on the look out. There are probably some who are about to do their first spring beds, and those I have described above I can strongly recommend. The bed planted with Dielytra I expect to be very effective.—A.

Chrysanthemum Leaf-Rust.

On the 21st of August, 1897, a disease appeared on Chrysanthemums at Maidenhead, and specimens were forwarded to the Editor of the *Journal of Horticulture*. These were examined by me on the 26th of that month, with the result that a reply appeared in the issue of September 2nd, page 231. The infection was attributed to an attack by the leaf-rust fungus, Trichobasis Artemisiæ, *Berkeley*. I had an impression of "rust" having been before noticed by growers of the "autumn queen," and hence the remark of its being "a rather uncommon parasite on the Chrysanthemum, but destructive when it does occur." For the purpose of further investigation I obtained leaves of the common Mugwort (Artemisia vulgaris), as this is the native host of the Chrysanthemum mildew (Oïdium chrysanthemi), and on comparing specimens considered the forms of leaf-rusts found on both identical, namely, Trichobasis Artemisiæ.

There the matter rested until September 18th last, when I examined specimens submitted by a large grower in Kent, magnificent, large, thick, leathery, deep green leaves (barring brown spots) seriously infected by the rust fungus, the pustules being much larger than commonly found on Chrysanthemums.

On October 9th, 1897, I had occasion to examine specimens from Somerset—a whole boxful, forwarded by the Editor—of splendid leaves, but containing myriads of spores of the rust fungus. The plague thus exists in Kent, Somerset, and Berkshire. Very good (or bad) examples of it have also come from the Isle of Man. The grower in Berks deserves thanks for first drawing attention to what may be termed the Chrysanthemum epidemic, which may now be referred to.

In the illustration (fig. 57), at *A*, is shown part of the under side of an infested leaf of a Chrysanthemum, large, deep green (where not affected by the fungus), and apparently very healthy but for certain dark brown spots (*a*), which varied in size from a pin-point to one-sixteenth, one-eighth, and a quarter of an inch in diameter. In some parts, especially near the midrib, the whole surface of the leaf was covered by a dark brown, almost black, powder, due to the pustules running together, rupturing the lower epidermis and liberating the spores. This is shown at *b*, the portion of leaf natural size. There was also a few pustules on the upper surface of the leaf, very bold, one-eighth to a quarter of an inch in diameter, showing that the germinal tube from a fungus spore can pierce the upper as well as the under epidermis of the leaf.

Selecting one of the ripest and blackest pustules I examined it with a lens, said to enlarge 260 diameters, for the purpose, if possible, of finding teleutospores – the resting or winter stage – or rather the mature stage of the fungus, and got a variety of forms, fairly represented at *B—c*, uredospores = Trichobasis (Uredo) chrysanthemi; some almost round and concatenate (*d*), but all uredo or summer spores, one (*C*) pushed a germinal tube (*e*), and a small teleutospore (*D*). A poor thing, but sufficient to induce further search. After much scraping, section taking, and long and close observation, I came across the full-blown Chrysanthemum leaf-rust fungus, Puccinia Chrysanthemæ, shown at E.

It first appeared one-celled, a Uromyces, but after a time, hardened up as represented, two-celled—a Puccinia. The rust, however, is a fac-simile of the Mugwort leaf-rust, Trichobasis (Uredo) Artemisiæ, and seldom anything else, for the Puccinia form, P. Artemisiæ, is about as difficult to find as the teleutospores on Chrysanthemums. It was finer, however, and I consider an evolution of the Mugwort leaf-rust, hence its being given here as a distinct species.

To verify the matter I sought for more leaf-rust on the common Mugwort, but all the old leaves had collapsed from the attacks of the parasite, and on a young leaf only (*F*) could I find it. I found, however, some old leaves with sere pustules. The pustules on the young leaf were almost black, of needle-point to pin-head size, and one gave the spores shown at *G* = Trichobasis (Uredo) Artemisiæ, all the spores roundish or oval, being uredo or summer ones.

The old leaves proved very unsatisfactory, the teleutospores had fled, if there had ever been any, but I made a last effort and discovered the form shown at *H* = Puccinia Artemisiæ – the resting or winter (teleutospore) or final stage.

I next examined the rust on the common Thistle (Carduus vulgaris) Trichobasis Cichoracearum. The pustules are larger and brown, not nearly so black looking as those on the Mugwort. They are much like those on Chrysanthemums, even the small, as shown at *h*, and run together as at *i*. The uredospores (*J*) and the teleutospores (*K*) still more so. This is the fag end of the Thistle parasite, and the Mugwort parasite is also shown at its worst as regards the uredospores. I have given the three as they were found on October 9th, 1897, and I think no one will deny the Chrysanthemum leaf-rust fungus is much the better, even if not going along with me to the evolution – a new form—namely, Trichobasis chrysanthemi.

We now pass to the first specimen seen in 1897. It was from Maidenhead. Shown at *A—E* indicates the prime of Trichobasis (Uredo) chrysanthemi. The fungus plant likes good fare, loving the large, thick, leathery, deep green leaves. Some may say the Chrysanthemum so

highly fed has invited disease, but the parasite did not begin on the fine leaves, but on the weaker from the Royal county. See its fac-simile at *L*, under side of the leaf, natural size. It is just half the size of the leaf of the specimen from Somerset and from Kent. One has leaves little thicker than ordinary writing paper, and the other stout, elastic, strong, and tenacious as shoe leather. So much for robustness as the predisposing cause of attack.

The fungus, Chrysanthemum leaf-rust (Trichobasis chrysanthemi), produces dark brown pustules on the under side of the leaves of the Chrysanthemum sinense vars. (most on the Incurved sections), as shown at *L*, some small (*j*), others larger (*k*) and isolated, not a few in groups (*l*), and often becoming confluent (*m*). The pustules contain a number of spores (*M*), very dark brown or nearly black, echinulate (very short bristles), with always one (*n*) transparent spot, sometimes two (*o*), free, attached at first by a short peduncle (*p*), and caducous (spores falling very early). In some cases the spores are, or appear, concatenate (chained), as shown at *q*. All the spores are uredo, or summer ; at least, I only found the miserable apology for a teleutospore (shown at *r*) on August 26th, 1897.

These uredo or summer spores germinate at once on a clean, healthy leaf of a Chrysanthemum (almost every one on the under side) with the greatest freedom in presence of moisture, but seem baffled on the upper side of the leaf, either by the sunlight or dryness. Some spores there do not even attempt to grow, but appear to thicken their outer coat, becoming as if warted, and losing the transparent spot, getting round, and apparently capable of retaining vitality for a considerable time. I have some collected on August 26th now (October 11th) quite sound, and these, when placed on the leaves from Somerset with a little moisture on them, pushed germinal tubes and bored right into the leaves without the least difficulty.

The effect of the entrance into the leaves of the germinal tubes of the fungus spores is to produce the pustules before mentioned on the under side, these being at first pale green, then yellowish, afterwards light brown, getting darker as the spores form, and growing outwards push through the destroyed epidermis. The germinal tube once inside the tissues divides, forming mycelium hyphæ very densely, which push in the intercellular spaces of the cells, abstract their contents, and take their place. The hyphæ form a perfect net of threads, and push out growths so plenteously as to render the spores very crowded, squeezing each other into odd shapes, the younger pushing off the heads of the older in order to take their place. Thus the spores are shed in myriads, and it is only a question of a Chrysanthemum leaf being seized for the work in new generations to proceed with astounding rapidity.

The effect is to destroy the lower substance of the leaf to the extent of the pustules, such leaves becoming brown and dying more or less as the tissues are affected right through, pale spots appearing on the upper surface, as shown in part of a leaf at *N*, these being at first pale green, afterwards yellow, and then brown. The plants are weakened in consequence of the attack, and if the parasite is left to run its course unchecked they may be ruined.

How the teleutospores behave I do not know ; but as gardeners cut off the old Chrysanthemum stems in good time to get strong suckers, by burning these stems the resting spores are consumed. There are very few of them. The fungus can, however, be continued without them. The uredo form of many Puccinia certainly lives, especially on Mugworts and on Thistles, over the winter, and is more likely to do so on Chrysanthemums protected from frost, which means that the uredo stage of the fungus may live on the cuttings.

This brings us to the question of battling with the foe. Kill the spores. Badly infested plants should be burned, and others syringed from tip to toe with sulphide of potassium, ½ oz. to a gallon of water, or permanganate of potash, 1 oz. to 3 gallons of water, laying the plants on their sides, and doing the work thoroughly, so as not to leave a spore unreached. The suphide smells nauseously, and discolours paint ; the permanganate discolours the flowers.

Bordeaux mixture at quarter strength should also be mentioned as a preventive and remedy in early stages of attack ; sulphate of copper, 1½ lb. : best chalk lime, freshly burned, light lumps, 1½ lb. ; water, 22 gallons. Dissolve the sulphate in 1 gallon of cold water in a tub or earthen vessel. Slake the lime in another in a gallon of water, and when cold pour through a coarse bag into the sulphate of copper solution slowly; stir, then add the remainder of the water. Apply with a spraying apparatus, wetting the under side of the leaves particularly, but all parts of the plant. It will kill the spores on which it rests and enter the open pustules, but not those unruptured, therefore repeat occasionally. It is a mild and safe application.

There is the question of cuttings. To make sure they are clean dip them before insertion in the weak Bordeaux mixture advised. This will coat them with a thin film of the poison, and while there no fungus can push its germinal tube and take possession of the leaves. "What a bother," some will say. Well, the enemy has come, and should be conquered. The advertised fungicides containing sulphate of copper can always be had. Use them in good time, and repeatedly, and their value will be proved in vanquishing this insidious enemy of the Chrysanthemum—G. ABBEY.

SPECIMENS of diseased Chrysanthemum leaves were recently submitted by a New Jersey florist to Dr. Halsted for examination and advice as to the course of treatment to be pursued. His reply is as follows : —

"There is a genuine rust upon the cultivated Chrysanthemum sent by the correspondent, and it probably is the Puccinia tanaceti, *D.C.* There is doubt as to the species, because only the uredospores have been found upon the leaves examined, but these agree in size and shape with those of P. tanaceti, and furthermore this species is found upon a species of Chrysanthemum as shown by an herbarium specimen.

"The florist has written me that he may lose his whole crop from this rust. It appears upon the foliage in small brown spots, which consist of heaps of spores borne upon the tips of threads that have pushed through the skin of the leaf. The Carnation rust is not unlike this in general appearance, but the final spores are very different, provided the Chrysanthemum rust proves to be as suspected.

"Growers of Chrysanthemums should look to their plants, and if any find the rust it ought to be dealt with summarily, for the enemy is a serious one. The rust fungus sends its threads all through the plant before the spores are produced, and therefore spraying may not prove a satisfactory remedy for it. All affected leaves should be picked off and burned.—BYRON D. HALSTED, *Experiment Station, New Brunswick, N.J.*" (in "American Gardening.")

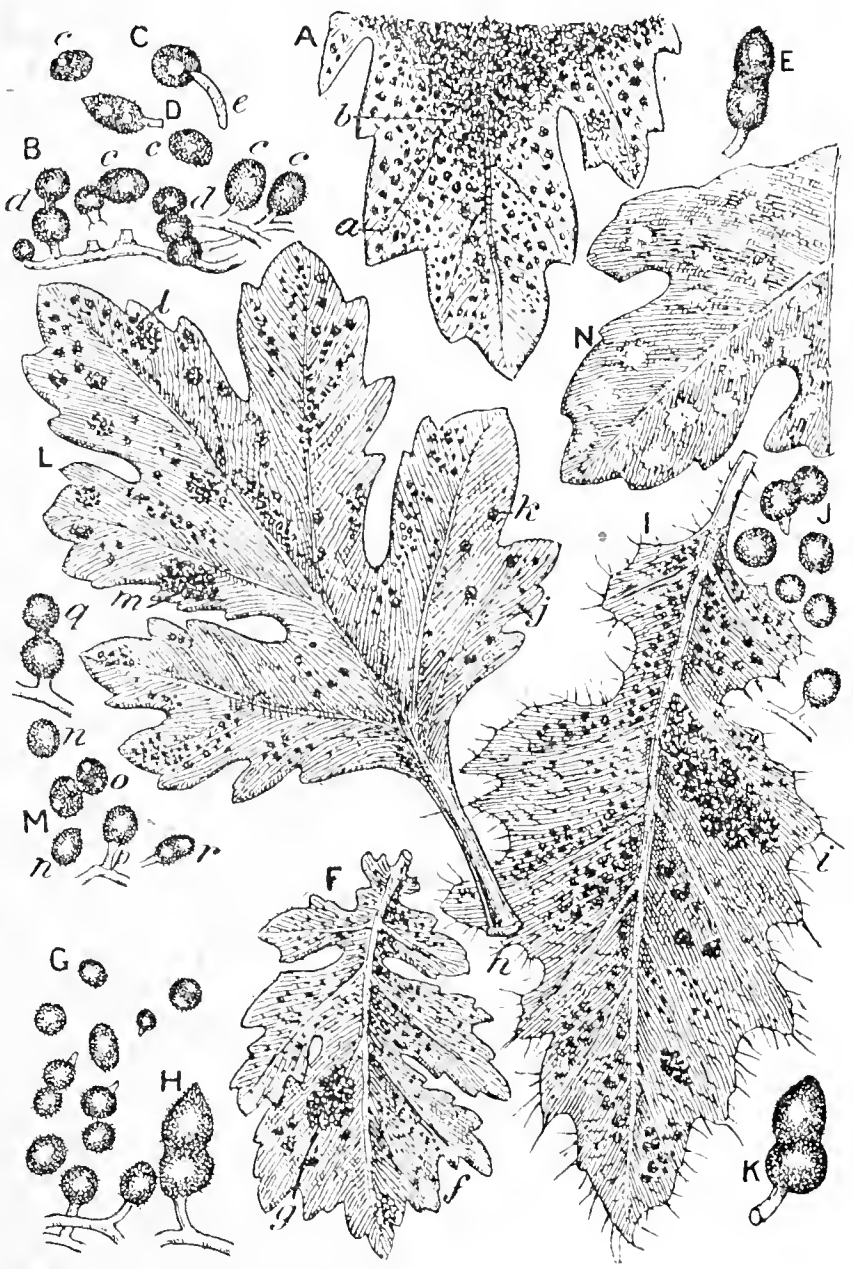

FIG. 57. — CHRYSANTHEMUM LEAF-RUST FUNGUS [TRICHOBASIS (UREDO) CHRYSANTHEMI, WITH FINAL STAGE — PUCCINIA CHRYSANTHEMÆ, AND OTHER RUSTS.]

References.—*A*, Part of affected leaf of Chrysanthemum (October 9th) ; *a*, small pustules of fungus ; *b*, pustules confluent or run together. *B*, Trichobasis (Uredo) Chrysanthemi spores ; *c*, usual form ; *d*, concatenate type. *C*, summer spore germinating ; *e*, germinal tube. *D*, teleutospore found in first pustule examined. *E*, mature teleutospore = Puccinia Chrysanthemæ. *F*, young leaf of Artemisia vulgaris (October 9th), showing : *f*, small pustules ; *g*, pustules become confluent or run together. *G*, uredospores = Trichobasis (Uredo) Artemisiæ. *H*, teleutospore = Puccinia Artemisiæ. *I*, small leaf of Carduus vulgaris ; *h*, pustules of root fungus ; *i*, pustules confluent. *J*, uredospores = Trichobasis (Uredo) Cichoracearum or Heraclei. *K*, teleutospore = Puccinia Cichoracearum. *L*, Chrysanthemum leaf (August 26th) : *j*, small pustules ; *k*, large pustules isolated ; *l*, clustered pustules ; *m*, pustules confluent. *M*, uredospores from pustule ; *n*, spores with transparent spot in centre ; *o*, spores with two spots ; *p*, spore on peduncle ; *r*, miniature teleutospore, the uredospore = Trichobasis (Uredo) Chrysanthemi. *N*, part leaf of Chrysanthemum, showing spots on upper surface, and corresponding to pustules on the under side. All the leaves or parts natural size, and all the fungi enlarged 260 diameters.

[As will be seen by the above record, attention was first called to the Chrysanthemum rust fungus in the *Journal of Horticulture*. Mr. Abbey's illustrations are from actual specimens found in the different leaves examined. Is the American parasite the same under a different name ?]

Preventing Mildew and Damping.

Chrysanthemums, when brought into the structure in which they are to flower, require to be disposed in such a manner that the plants will receive plenty of light, air, and a cool position to stand upon. Light is essential in order to retain the healthy colour of the leaves, for while they remain green and carry out their important functions a steady and certain development will take place in the perfecting of the blooms.

Air, constantly renewed, cool, and fairly moist, helps the plants to maintain the sturdy condition which favoured them previously. These conditions will also prevent mildew making its appearance on the leaves, or at least check its spread if it has originated, especially with the assistance of dustings of sulphur upon the affected parts.

When the atmosphere is moist with an excess of moisture from prolonged rain or fogs it is well then to exclude its too free admission. I would not recommend the house being entirely closed; but apply a little artificial heat, causing the air to be set in motion, whereby the too moist atmosphere may be made drier, and therefore light and buoyant. The deposition of moisture on the tender florets of flowers is not harmful provided it does not remain upon them too long. That is the mischief, and also the accumulation of moisture at the base of the florets. The latter is frequently the sole source of damping. The larger the flowers the greater the danger; so when large and valuable flowers are developing a thorough drying of the structure once a day must be beneficial, and not less needful when the flowers are fully open. When the blooms are half developed cease applying manure water. Excess of stimulants at this period does not prove helpful, but the reverse.

The closer the blooms are to the glass the more liable are they to fluctuations of temperature and the consequent deposition of moisture upon them. The best way to avoid the danger is to maintain as far as possible a regular and even temperature, so that excessive cooling may not cause the watery vapour to become condensed upon the delicate tissues of the flowers.

Careless watering and the needless wetting of floors and stages give rise to more moisture than is good for the blooms when evaporation is slow. In common with other growers, I have always found it to be a safe plan to maintain a constant circulation of air with a little heat in the pipes, and all classes of growers will find the practice beneficial. —E. D. S.

Chrysanthemums from Rothesay.

The collection of early-flowering Chrysanthemums grown by Messrs. Dobbie & Co. in their Scottish Nursery is an extensive one, and comprises the majority of the leading varieties in cultivation. The firm recently sent us a box containing upwards of three and a half dozen varieties, and, needless to say, several of them were of great beauty. The flowers were of good average size, and the colours, in all instances, were well developed. The utility of this section of the Chrysanthemum family is, we think, not sufficiently recognised. They grow and flower in town almost equally as well as in country gardens, while they require neither very special soil nor any particular position. Though they soon begin to feel the effects of frosts, they do not succumb to the first that comes, as is proved by the fact that the night previous to the flowers that reached us from Rothesay being cut, 5° of frost were registered. If anyone were to see a collection such as Messrs. Dobbies', they could not but admit the beauty and the utility of the September and October flowering Chrysanthemums. Space does not permit of our naming the varieties sent, but they comprised new and old ones of the best quality only.

Chrysanthemums at Barford Hill.

Aided by the beautiful weather of the last few weeks Chrysanthemums are opening their flowers rapidly, and in the majority of instances satisfactorily. Those who look upon the flowering period of the "autumn queen" as a time of keen enjoyment will, I think, this season be able to "revel" in a veritable "feast of beauty."

Being in the neighbourhood of Barford Hill, near Warwick, a few days ago, I made a point of calling on Mr. R. Jones, who has generally something good to show at all seasons. I soon found that the Chrysanthemums were looking well, and that the collection, as usual, contained most of the new varieties worth growing, as well as such older ones as are not yet "out of date." Many strong plants with leathery leaves promise to give grand blooms. Among these may be mentioned Mrs. H. Weeks, Pride of Madford, Madame Gustave Henry (a beautiful white), Mrs. W. H. Hurley, Eva Knowles, Mdlle. Thérèse Rey, and Simplicity. The last named is a white flower of lovely type, which I fancy will prove the best among the many fine white varieties we now possess. Mrs. W. H. Lees, Thos. Wilkins, Mutual Friend, Lady Byron, Souvenir de Petite Amie, and Graphic were old friends in good form. Octoroon—blood red, reverse side of petals lighter in colour—is a telling variety, one that takes the eye at once; Mr. J. Shrimpton, a golden buff flower with crimson stripes, is good in every way, and is also quite a novelty; Amiral Avellan, Modesto, and Australian Gold form a trio of yellow varieties, which would be very hard to beat. C. W. Richardson, Red Warrior, Mrs. W. E. Palmer, Dorothy Seward, Mrs. Briscoe Ironside, Mrs. Chas. Blick, Milano, and Lady Hanham are all good comparatively new varieties, represented by substantial blooms.

The whole of Calvat's novelties for 1897 are growing by themselves, and promise to give something choice later on, if one may judge by the solid blooms of the only variety get in flower—this is Soleil d'Octobre. The other varieties are also advancing well. In the incurved section I noticed good blooms of C. H. Curtis, D. B. Crane, J. Agate, J. Fulford, and the various members of the "Queen" family. —Wanderer.

Sheffield Chrysanthemum Society.

At the monthly meeting Mr. William Pickard read a very instructive and interesting paper, the subject being, "The Intelligence of Plants and the Distribution of Seeds." The meeting was numerously attended. Mr. Pickard handled his subject in an able and efficient manner, and referred to many cases in which he detailed the beautiful, effective, and elaborate mechanism by which plants are fertilised, and by which they are enabled to scatter their seeds. He expressed his views at length on the wonderful and perfect laws that enable plant life to be constantly progressing and making advances towards perfection, full particulars of which may be obtained on reference to the essay of which the first instalment will be found on page 377.

The essay was greatly appreciated by the audience, who signified their approval by a very hearty vote of thanks to Mr. Pickard.

The monthly exhibits were for professional members' ornamental plants, when the species of plant life that supplies the "croton oil" and "dragon's blood" of commerce were in evidence by some of the more aristocratic members of their family, the most fortunate owners of the plants being Messrs. Thos. Morton and G. Smith for the first and second prizes, and Messrs. C. Scott and R. Agar being, in the Judges' opinion, equal, shared the honour of third prize. The amateurs, putting aside the ornamental for the useful, so far as the eye and the stomach are concerned, competed for Tomatoes, and produced some very creditable examples, with the result that Messrs. W. Green, P. Cox, and W. Donaldson secured honours of first, second, and third prizes respectively.

A number of applications for the benefits of the Society were made, and after being duly considered the applicants were enrolled on the list of members. Mr. John J. Newsham presided in his usual business-like way, and was awarded a vote of thanks for his services.—J. H. S.

Chrysanthemums in the North.

As the culminating point of interest in our own collections draws near we begin to find ourselves scarcely less interested in the prospects of the season and how it affects other growers. Last year I had the privilege of collecting notes on the subject from growers covering a wide area, and, so to speak, focussing them into view for the convenience of the readers of the "Journal." As showing the practical interest evinced in Chrysanthemums, the ready and full replies to inquiries and the cordial invitations would have provided copy to fill much more space than the Editor could set apart for one section of the country. If the gentlemen who so readily responded to my inquiries of last year will again favour me, at the same address, with a summary of the present year's prospects with any points on the habits of new varieties, and important details bearing upon the cultivation and results as affecting leading varieties, I shall have pleasure in again dealing with the matter to the best of my ability.

Compared with last year how far better or worse the blooms of the present season eventually prove, remains to be seen. Up to the third week in August the climatic conditions of the two seasons ran in parallel lines, both being characterised by a dry atmosphere and bright sunshine. Last year after the time above indicated, in the North we experienced one of the wettest and most uncongenial autumns on record, with especially moist atmospheric conditions, and without a gleam of sunshine to give us encouragement or lighten the prevailing anxiety as to the results.

During the present season the same conditions prevailed until showery weather came about the same time as last year, continuing for a few weeks, but again settling down, favouring us with a remarkably fine September and October up to now. Notwithstanding the unpropitious conditions for bud and bloom development of last year, the results proved far more satisfactory than was expected, all sections of Chrysanthemums producing at least average specimens. This teaches us the useful lesson that, despite the most uncongenial conditions of our autumn climate, the plant is able to assert its natural propensity to produce bloom with the dying year, and good blooms even, when given fine sunny weather up to the flower-bud-forming stage.

Reasoning on the same lines the present season should be taken as one giving us hopes of exceptionally good results, because in both its growing and bud-forming aspects it has proved, according to our present knowledge, to be one of the most favourable on record, with the possible exception that the effects of over-ripeness in some cases may intervene. If this forecast prove generally correct, the comparison of two widely different autumns following two summers practically alike in their effect on the growth of the plant, will no doubt furnish data as to the proper degree of wood-ripeness required for the production of high class bloom.

Although over-ripeness in the North may not be as common as it is in the South and West, the question of the proper degree of ripeness is of equal importance to growers, as being part and parcel of the same question wherever they may be situated. Observations by growers leading up to a concensus of opinion on this matter would be most interesting, and none the less valuable, if they were based upon the ruling principle that natural wood-ripening itself, in its early stage, is the incitement to flower-bud formation. Broadly speaking, this may be taken for granted whether the buds be crown, second crown, or terminals, as an instalment of growth is made between the buds mentioned; the degree of ripeness of the last instalment of growth being a matter of feeding combined with the nature of the season during the time the latter instalment of growth is being

formed. It is well known to growers that the second crown buds and the terminals open more freely and form more perfect flowers than do the first crown, yet the wood forming the last instalment of growth in this case is cruder and softer than in the other case.

Although we state that ripeness of growth is a necessary condition in the production of high-class flowers, we have also to consider that in the ordinary acceptance of the term the Chrysanthemum in habit is an herbaceous plant, flowering on the current year's growth; but unlike most other herbaceous plants, which usually bloom, in accordance with a fixed principle, at the point terminating the current season's growth, the Chrysanthemum has inherited or adopted a more erratic principle of forming incipient flower buds, terminating several instalments of growth instead of only one, as in the case of the herbaceous Phlox. Whether the incipient flower buds of the Chrysanthemum develop into flowers or give place to another wood developing into growth, is dependent upon the condition of the plant at the time, or of the requirement of the cultivator.

The action of wood and root growth are reciprocally dependent each on the other, but as the wood and leaves also ripen as the season advances, the extension of top growth is checked with the inevitable check to root action following, and this is the critical stage from which the over-ripe condition of the plant begins producing the inferior flowers due to this condition of the plant, brought about by too early bud formation.

Reverting to the second crown and terminal buds, their freer development and better quality may be traced to the later growth and the resultant vigorous root action when most required in the development of the flower and best suiting the exhibitor's requirements. In this case, although the growth immediately below the bud is not ripened, we may conclude the necessary food supply in the development of the flower is drawn on from below, where the products of elaboration have been stored by in the earlier part of the season.—A YORKSHIRE GROWER.

ROYAL HORTICULTURAL SOCIETY.

OCTOBER 12TH.

SCIENTIFIC COMMITTEE.—Present: Dr. M. T. Masters (in the chair); Mr. Veitch, Rev. W. Wilks, Dr. Russell, and the Rev. G. Henslow, Hon. Sec.

Acorn Cups Malformed.—Mr. French of Felstead sent specimens of this not uncommon phenomenon. It appears to be due to an arrest of the flower, probably by some insect attack, when the scales of the cup become enlarged and free.

Melons with New Disease.—Specimens were received from Mr. J. Fraser Smith of the Gardens, Cullen House, N.B., who writes as follows:—"The disease attacked my crop last year, and has again this, in both a sudden and deadly manner. An entire crop of twenty plants has perished in a few days. The disease first shows a spot on the leaf, then a part of the stem gets affected, and in two or three days the whole plant collapses. It is only at a certain time of the year, for the first crop in both years, which was grown in the same house, finished without any signs of it—*i.e.*, about the early part of August; while the second crop, about half-grown on the opposite side of the path, has all gone, as also a later batch planted on the same side as the first ones. Out of thirteen plants ten went off in one day. Two young Cucumber plants have also died in the same way, after they were 4 feet high.' The following report has been received from Kew:—"The Melon disease is caused by Scolecotrichum melophthorum, *Prill.*, a parasitic fungus. The disease is common in France, but I am not aware of its having previously been observed in Britain. Burn all diseased plants, as if they be allowed to rot on the ground a recurrence of the disease would be almost certain next season. Under any circumstances it would be advisable not to use the same ground for Melon-growing for at least two years, as the fungus spores are probably abundant in the soil."

Parrot Tulips Seeding.—Mr. Wilks brought ripe pods and seeds of this variety, which he had crossed with the pollen from other kinds of Tulips growing in his garden. It had been stated by growers that the Parrot Tulip had not been known to bear seed at all, and Mr. Henslow observed that of some bulbs received from Mr. Barr, in every case the pistil was abortive. It is proposed to raise plants from the seed thus obtained.

Abies bracteata Cones.—Fine specimens were received from Mr. A. Harding, The Gardens, Orton Longueville, Peterboro'. It is believed to be the first occasion of its fruiting in this country. They were borne by one of the finest specimens of this species in England. The tree is a native of South California, growing at one place only, in Santa Lucia, and is in danger of becoming extinct. The cones are remarkable for their long linear bracts.

Cedrela tooma? Fasciated.—A remarkable specimen, consisting of a spirally-coiled, flattened branch, two of the coils being welded together, was exhibited by Dr. Masters. The tree is a native of Santa Barbara of South California.

Abies balsamea, Tuber.—A specimen was received from Mr. Noble of a young plant which had developed a globular tuber-like excrescence below the soil. Similar cases had occurred some years ago in the same grounds, but the cause is not traceable at the present state of growth, though it might possibly be due to some injury by insects at a very early stage.

Juniper Berries, Gymnospermous.—Dr. Masters exhibited some berries of the common Juniper, received from Dr. Schröter of Zurich, remarkable for the three coherent bracts not having become fleshy enough to close in upon the seeds, so that the latter remained visible, free, and strictly "gymnospermous," as in the previous condition of the ovules.

Trapa natans, Fruit.—He also showed specimens of the Water Chestnut from a particular Italian lake having four knobs upon them, which do not occur on the ordinary form of this fruit.

Spruce Fir-cone, var.—He also showed cones having smooth-rounded scales, instead of the usual form. Dr. Schröter, who obtained it from Switzerland, referred it to Abies medioxyma; but Dr. Masters observed that this species is a dwarf Alpine or Arctic species, and regarded the specimen as a variety only of the Spruce.

Anthurium Spathe, Monstrous.—Col. Beddome sent a specimen having three spathes and the spadix commencing to branch, exhibiting a semi-proliferous condition.

Plants Exhibited.—M. Lemoine sent a spray of Tamarix Kashgarica, interesting as being a late-flowering species, from Central Asia; Panax sessiliflorum, with large, dense bunches of black berries, probably from Japan; the Begonia, odorant, having a delicate but very evanescent odour of lemon, and double and semi-double sports of B. semperflorens.

Galls on Roots of Oak.—Mr. Wilks brought remarkable galls, forming a large mass on the roots of Oak or Chestnut. They are also found on the roots of the Deodar. The galls are polygonal and wedge-like, so forming together a globular cluster about the root. They are produced by Cynips aptera (see *Gardeners' Chronicle*, 1841, p. 732, and 1874).

GRAPES AT TEWKESBURY LODGE.

FOR several years past Tewkesbury Lodge, Forest Hill, the residence of C. Bayer, Esq., has acquired more than local fame for the excellence of its Grapes. Having often seen them in good competitions, I took a recent opportunity when in the neighbourhood of inspecting them under natural conditions, and these are what many a gardener might envy. Structures of the very best construction, perfectly heated, borders well made, and, what is more, the crop and Vines were in the best possible condition, providing amply for home and exhibition purposes.

The vinery, which is span-roofed, measures some 75 feet in length by 24 feet in width, divided by a partition in its centre; one division being planted with a mixed collection consisting of Black Hamburgh, Buckland Sweetwater, Madresfield Court, Lady Downe's, Gros Maroc, Alicante, Gros Colman, Foster's Seedling, and Gros Guillaume. The Muscat house is not strictly devoted to the Alexandrian variety, but shares one side of the house with Mrs. Pince, Alnwick Seedling, Trebbiano, Mrs. Pearson, and Golden Champion. The only Vine that fails to give entire satisfaction is Mrs. Pince.

As showing the vigorous condition of the Vines, a young rod taken through the partition in the spring, and this carrying a heavy bunch at its base, has covered the whole length of the trellis, and apparently in a perfectly ripe state throughout. Being a cooler compartment it is hoped the desired colour may be obtained on the young rod. Spanning the path at each end are strong wire trellises, which are well furnished with useful bunches of Gros Maroc, constituting quite an object lesson in perfect culture, strict utility, and an ornamental aspect in the house.

The borders are confined inside, and are 2 feet 6 inches in depth, the turf for which was obtained from a meadow closely adjoining. The houses were planted nearly seven years since by the gardener then in charge, and are now under the care of Mr. W. Taylor. Other handsome structures have been erected, and still more are in contemplation for extended fruit growing, including Peaches, Nectarines, Plums, Pears, Figs, and Apricots. One house planted with Peaches and Nectarines on cross-trellises have made a wonderful growth, and there are healthy pot trees standing outside, sufficient to furnish another large house erected for that popular phase in fruit culture.

Beside the houses under notice there is an old range, which includes the vinery that did duty for some years previous to the erection of the handsome new ones. This is a lofty structure, 35 feet in length, and contains Madresfield Court, Duke of Buccleuch, Alnwick Seedling, Gros Colman, Black Hamburgh, Foster's Seedling, and Muscat of Alexandria. In this case the border is outside, but Mr. Taylor takes the precaution to protect it from the heavy autumn and winter storms by fixing pit-lights over to keep it dry and warm.

In a small lean-to house 12 feet in length, 8 feet in width, height at back 10 feet, front 5 feet, facing south, without fire heat, are Black Hamburghs. Three Vines were planted in 1891 in a small border inside. For the past five years well-finished Grapes have been cut from this small house, which has been quite a feature here. This year forty-three bunches have been taken, the heaviest weighing 1¾ lb. No provision was made for bottom ventilation, and the top ventilators have not been closed since the Vines were in flower. [Mr. Taylor has sent us a specimen bunch of the fruit from one of these Vines. It is a model in shape, and the berries fine in colour and size.]

The quality of the Grapes is so good in the newer vineries that it seems almost superfluous to particularise, but Madresfield Court and Gros Colman may be specially mentioned as doing remarkably well. Records gained during the present season support this view in respect to the first named; time and opportunity will prove what are the condition of the "Colmans." It may be interesting to note that during the past three seasons Mr. Taylor has won twenty-five first prizes, fifteen seconds, and eight thirds, in addition to three silver and one silver-gilt medals, and a cultural commendation from the R.H.S. for Grape Madresfield Court. Mr. Bayer has a very keen interest in fruit growing, and his gardener spares no pains to produce the very best in season.—W. S.

DECORATIVE WORK.

(*Concluded from page* 343.)

One feels somewhat diffident, although recognising the importance, table decoration bears in relation to a gardener's work, in approaching this part of our subject, by reason of the excellent practical articles so frequently to the front concerning it, but some margin may remain for the inclusion of a few hints. Circumstances alter cases, and tastes which have to be catered for vary considerably ; yet, generally considered, there are a few simple ethics which, in practice, seldom disappoint, and may, on the contrary, charm those who have suffered from an *embarras des riches*, resulting from heavy and laboured designs. Simplicity, lightness, gracefulness are within easy reach of all, yet not all are able to disassociate the rich and rare in the way of flowers, foliage, or plants from their object, hence ideas are apt to trend in the one direction.

For instance, at a flower show where some half dozen tables competed for the honours in this particular class, the first prize was justly awarded to a competitor who came last into the field on the eventful day, and certainly had the least material to work with. The judges, I know, had a bad quarter of an hour, for their decision was "bad"– at least, such was the verdict arrived at by the third prizeman, who himself point-judged his display in order to gain some salve for wounded pride from his fellow sufferers. "Third prize, indeed, for a grand lot of Orchids against a lot of wild rubbish put up by Miss ——; and three hours' hard work against her thirty minutes' sticking up without any trouble." However, the general public endorsed the judicial view, and that which the most are pleased with may be generally accepted as the most pleasing.

The secret of success with the prizewinner appeared to rest in a liberal addition of nodding Grasses in bloom springing naturally from a loose and light arrangement of Ox-eye Daisies, which, cut with long stems, were inserted in a central bowl of wet sand, small trumpet vases filled with similar flowers and Grasses being placed at intervals on the table. A great deal of time is often needlessly expended in strained and laborious effort, as was the case with our third prizeman, and this over-anxiety not only misses its mark, but virtually perverts the marksman's vision. Time and labour, and even choice material, count not in these cases, they are often, in fact, detrimental to the chief object.

When a gardener is pushed to extremities by reason of scarcity of material, or of time, he often makes a hit in the right direction. In carrying out a series of table decorations extending over a certain period of entertaining, the desire is a laudable one to afford as much variety as possible by distinctly contrasting arrangements of form and colour on successive nights. To this end many of our wildlings in their season lend themselves admirably. Having seen some of the happiest effects produced at a pinch by such means, one would impress upon beginners at the work, who are apt to look upon common things with contempt, the general benefit to be obtained by taking a broader view of the subject. Gardeners are, of course, initiated into this work at their embryo stage, and not a few seem chained down to copying the examples of early days. From one place in particular where table decorations were of the heavy and formidable type, young men went forth to carry the same doctrines into practice in their own particular sphere of work; so much was this the case that a gentleman who moved much in society said he "could trace the effect of the Blank Hall system wherever one of the pupils had been planted out."

During this season of the year, when high-coloured foliage abounds, seasonable displays of such can vie with the flowers that have fled, and, what is, perhaps, less understood, pleasing and distinct variety can also be given. It is as well in all cases that our decorator should note the effect of his work under artificial light, by a critical survey at the last moment, when he should, to obtain the best idea of it from the eye level, temporarily seat himself in various positions. Plant groups in this phase of decorating are peculiarly liable to the error of overcrowding. Gardeners are prone to lament the time now absorbed in this kind of decorative work, and not without reason; but where the matter is left to their own discretion they are, I think, often to blame, good as the motive may be. Such instances have, at least, come under notice, and not only been noticed, but privately remarked by their employers, who out of consideration for their feelings are loth to carry the matter farther.

Many ideas spring from what one has seen during a long experience of our subject. Now and again one notes where a happy, though probably accidental, break has been made in ordinary routine, and I often think that if our decorative hands were a little more daring much might be done in many ways, a few of which I have ventured to suggest. One of the most imposing displays I have ever seen in connection with the closing part of our theme was at the obsequies of a high dignitary of the Church. White flowers were at a premium, so heavy had been the tax imposed upon gardens in the neighbourhood, and when at the last moment a lady begged for something as a token whereby to express her respect it was not without some misgiving that a handful of Bougainvillea sprays was suggested. However, they were accepted, and simply twisted into wreath form without any addition to their flowers or foliage. As the funeral car slowly wound its way along the distance of a country road heaped with a mass of floral emblems, this bit of unique colouring was one of those happy hits I have endeavoured to describe. In decorative work our young gardeners have a field open to them, which is as practically unlimited as the subject is inexhaustive.—Decora.

BOTHY CUSTOMS—ON DUTY.

Relative to "A Young Gardener's" inquiry about the rules or customs governing the leisure hour in bothy life, the matter, as stated, whilst being one which directly concerns himself, is not without its indirect bearing upon the lives and duties of young gardeners generally. Moreover, the question is broad enough to include head gardeners, for in the body corporate of gardening "head" and "hands" must act in harmony for the good of the whole. Were it the case that clearly defined rules not only existed, but were generally accepted, that would close the question, or limit it to those exceptional instances for the guidance of which an established precedent could be quoted. In one sense, the broadest, this is not so; we may regard each and every garden as a little kingdom in its own way, affected, no doubt, to some extent, by certain cosmopolitan customs, but not sufficiently so to infringe upon that autonomy which is, and likely to be for long enough, the best for the purpose.

If it is possible to find two things exactly similar, or two cases strictly parallel (a philosophic question which has been philosophically negatived), it is not in gardens, in gardening, or in gardeners such are to be looked for. I would ask "A Young Gardener" to extract a moral from the above, which doubtless his good intelligence will have no difficulty in doing.

It is a habit of the writer to impress at every favourable opportunity the value of adaptability to circumstances in those cases where circumstances are beyond control. Some time since I casually came across a little book for business men entitled, "Tact, Push, and Perseverance." The two latter virtues seem to be inseparably bound one with the other, but not so the former. One sees now and again examples of the clever gardener, in which tact is conspicuous by its absence, and reading between the lines of "A Young Gardener's" letter, it may, I think, be from the want of a little tact that occasion has arisen for his questions, which shall be answered as far as ignorance of the place and parties immediately concerned will allow.

Question No. 1 is, "May I ask a gardener . . . if it is the rule to consider bothymen to be always under control?" This is the crux of this question. Yes! As a head gardener I liked my lads to feel and to know that during working hours I was their master, and afterwards, in the leisure hours, that I was their friend. As a master there was no questioning my authority, and as a friend, by entering into their recreations, their studies, and sympathetically aiding them in their ambition to be men, they were, most of them, I am proud to say, "always under control." My meaning is, I think, plain. "A Young Gardener" was "startled" as he was going home, being "off duty," by being told that "he had no right to go," that he "was in a bothy, and while there was supposed to be always in the place when he was wanted."

Passing over that most commendable desire to "go home," I do not attach much importance to this apparently despotic supposition of his chief, for, doubtless, there was some underlying reason for this arbitrary rule, supposing that it is the rule of that particular place, which I very much doubt. Head gardeners are not infallible, and the under one may have been too frequently running home, which betrayed the former into a hasty interdiction. The young clerk who asked permission for the third time within a few months to attend his grandmother's funeral was accorded it with the injunction that it was to be the last time of asking. The moral is clear; and, I think, the more our boys are made to feel that the bothy is like a home the less desire they will have to run from it at every opportune, or inopportune time.

Question No. 2: "If this were the rule of the place, why was I not told of it when I came?" With what has been advanced there is nothing to add beyond that what a gardener owes to himself and to his men is to have a clear understanding at the engagement to prevent any misconception and subsequent friction.

Question No. 3 concludes "A Young Gardener's" letter. It is, in fact, a satirical supplement to question No. 2, where the troubled one inquires, "Is it my luck to be under a kind, generous head gardener?" I hope so, young friend; and perhaps you will find, as I have found, that a rough manner often covers a kindly heart. Do not be faint-hearted. One master I served under for two years was of the crusty kind, and I knew not until the morning I was leaving that so well concealed under a cold reserve was a warm and sympathetic interest in my welfare; and what a pleasant surprise it was to me!

As previously stated, I do not attach much importance to

"A Young Gardener's" troubles, that is in viewing them from my period of life. They may be very real to him, but the time will come when, in looking back, he will smile upon them—that is if he meet them now in a right spirit. If he will turn back to "An Old Boy's" reminiscences of bothy life he will there note where the "off duty" men were sent to unload slack at a railway station on a Christmas Day, and other difficulties (?) of young gardeners' lives in those days. The young fellow who has to meet them, and who finds in each difficulty his opportunity, is the one who succeeds, and we know that among gardeners there are not a few failures. Few of us have what we like; most of us can, if we choose, learn to like what we have.

Men there are, I know, "dressed in a little brief authority," who are unapproachable to their subordinates, but they are not, happily, very common amongst our class. If "A Young Gardener" feels some little restriction upon him when "off duty," let him remember that "stone walls do not a prison make;" and respecting these little misunderstandings, which may arise in the best regulated gardens, both "head" and "hands" may sometimes, to their mutual advantage, find that "it is best for a servant to be sometimes deaf, and for a master to be sometimes blind."—WELL-WISHER.

CROCUSES.

THE pretty and modest Crocus is a favourite spring flower, useful for boxes and pots, but quite indispensable for beds and borders. Most soils and positions suit it, and it graces any spot where it is planted to an extent excelled by few other spring flowers. To attempt to describe a flower so well known as the Crocus would be superfluous; everybody has seen it at some time or other in gardens and in pots. It may be useful, however, to refer to the many modes of decoration for which it may be employed, and to describe the circumstances under which it thrives best. We may begin by noting that it is for outdoor planting that Crocuses are most largely employed. They make pretty masses in beds by themselves if the colours are judicously blended, and clumps of half a dozen roots planted together here and there form attractive bunches of flowers in spring. The earliness of the Crocus is one of its chief recommendations. It is in full beauty when the spikes of the Hyacinths are only half furnished with expanded bells, and the broad, richly coloured petals of the Tulips are still pressing closely to each other, as though loth to expose themselves to the nipping air. But fortunately they last a considerable time in flower, and are thus serviceable for edgings and bands to beds of the last-named flowers when they have at length fully developed themselves. For this purpose Crocuses are used to a considerable extent, and they are never seen to better advantage than when surrounding with a ring of purple or gold a mass of the more imposing Hyacinths; and after the Crocus flowers fade the leaves form an elegant green fringe.

A double row of white, blue, or yellow Crocuses, or a row of each makes a charming edging to a circular bed or long border, whatever it may be planted with; and to any corner that would otherwise be bare they would impart warmth and cheerfulness. There is not much diversity in their colours; shades of purple or blue, yellow and white being all that are represented, but many of the varieties are prettily flaked and striped. A mode of planting these flowers not commonly employed is practised in the London parks. The corms are dotted about here and there amongst the grass in irregular order, purple, white, and yellow being intermixed, and when they push their flowers through the turf early in the year the effect they produce is well worth copying. This plan might be followed on any grass plot. The present is a good time for planting, squares of turf being cut out, the soil beneath well stirred so that water can pass away freely, the bulbs placed in, and the turf placed in position again. In very poor or heavy ground it is desirable to remove some of it and add fresh for insuring the growth and increase of the corms, but in many lawns that is not necessary, provided the soil is stirred and sand added if it is of a heavy nature. Some persons simply make holes in the grass with a pointed stick, press in the bulbs and tread the grass over them, but that is not a good plan, as they are then practically suspended in the pointed cavities, and these in firm wet ground act as so many miniature water-traps, preventing the growth and causing the decay of the corms. Lawns in which bulbs are planted should not be mown in the spring until the leaves of the bulbous plants are matured and commencing to decay.

Than Crocuses few more suitable flowers could be chosen for the decoration of graves, over which, with the drooping, pure white Snowdrop flowers, they will bloom with a quiet beauty well in keeping with the associations of the spot. We have more than once been asked to give advice on the planting of graves, and may say that Crocuses and Snowdrops should be planted now for their decoration in spring.

For pots and boxes Crocuses may also be used with advantage. In the former they may be planted in mixture, or one sort only may be planted in each pot. The light variety with flat petals shown in the front is a very early yellow sort named Cloth of Gold; the others are the ordinary purple, white, yellow, and striped varieties, which are better. Five corms may be placed in a 5-inch pot, which is a convenient size for growing them in. They may be placed under ashes or fibre for a time as advised for Hyacinths and Tulips, and be subsequently removed, watered as they require it, and placed in the greenhouse or on a window-ledge to bloom. They are useful in boxes if associated with Hyacinths and Tulips: they should be in the front unless Snowdrops are employed, in which case they may form a second row.

Crocuses will thrive in any soil that will grow other bulbs well, and the mixture that has been recommended for Hyacinths will produce extra large flowers. But no trouble need be taken to prepare a special compost, as any ordinary garden soil, mixed with sand, will suit them. They may be covered with about 2 inches of soil. When planting in lines the quickest way is to draw a drill with a spade, press in the Crocuses, and turn the soil over them. They may be planted and potted now, and the earlier this is done the better will be the growth and the finer the flowers.—A.

NOTES FROM DUBLIN.

A PEEP into "The People's Gardens" lately revealed more brightness than one could have expected to find with the advent of October. It was a casual call, but compared very favourably with a special visit made some time previously, when summer sun had been conspicuous by its absence and results were disappointing. Not so, however, this late autumn day when, expecting to find little remaining of the ephemeral gaiety of summer bedding, it was comforting to find such warm tones of colour given off by Begonias and 'Geraniums," as well as grateful to have odours galore, of the good kind, a number of standard bushy-headed Heliotropes laden with flowers and fragrance being responsible for most of the latter delights.

Entering from the city side, where a gentleman with many bright buttons and much gold lace personifies law and order, and enforces it by a vigilant look-out for stray dogs (by-the-by, our last visit witnessed a frolic through the flower beds of two noble specimens of the Irish red setter in defiance of all conventionalities), a walk through a shrubbery brings one to the *pièce de resistance* in the way of bedding. This is, I suppose, similar to what obtains in most public gardens, hence calls for little comment. One could not fail to notice that charming old friend, Calceolaria amplexicaulis, the most pleasing feature in a substantial ribbon border. In this part of the gardens seats are abundantly disposed in every available nook; not much in use to-day, but sufficiently occupied to typify all sorts and conditions of our Dublin folk; the well-to-do, and the not-well-to-do, with the ne'er-do-well, are all in evidence. We watch them all, as well as the flowers; notably a lady with a covetous-looking handbag, a student of botany, mayhap, by the great interest displayed in one of the gardeners who is dismantling a bed of choice succulents. However, to his credit be it said, no specimens are transferred; she goes empty away, and we wander away down by the lake.

Here, at the lake, one enjoys the good taste displayed by the planter. On the opposing bank a bold planting of Tritomas is the right thing in the right place, and some noble foliaged plants naturally disposed in the vicinity of the water scene give the happiest effect. A group of Bullrushes, common as the plant is, suits the margin admirably: one might, in fact, imagine the whole thing to be a piece of Nature's handiwork were it not that, what is doubtless an oversight, the large earthenware supply pipe protrudes rather prosaicly from the bank. We would like to wade out and adorn its mouth with a few rocks; but some stern official eye might be focussed our way, and trouble would ensue. Here, in a secluded nook, is a fine bit of the rockwork builder's art: or is it natural rock, strata upon strata being so cleverly superimposed? An overflow pool is surrounded and centred by handsome foliage. Broad-leaved Aralias, noble Cordylines, and a vigorous growth of Osmunda regalis occupy this sheltered place, which is variously approached from the plateau of the flower grounds by flights of informal steps.

On the bold rockeries above, near the opposite boundary to the city side, things have grown almost too luxuriantly, and notably so on the rock-studded bank which backs up the ribbon border previously noticed. Yet in this particular place the dense overlapping growths of Ivy could not but be admired, being quite a feature in its way. Having returned to this part of the grounds, the new circular fenced-in rosery must not be overlooked. Some two years since we saw it being formed, and all the Roses, including the Teas at the pillars and chains, have grown apace, and look remarkably clean and healthy. The entrance gate to this sanctum is padlocked, and rightly, too; but as the backs of the labels only are visible to interested ones, we would like to climb the fence and face them outwards, that all who run (outside) might read. Near at hand, half a dozen good specimen semi-hardy Palms, spaced out by the side of a walk, are cushioned in Sedum spectabile, now in all the glory of its autumnal bloom. Nothing could be finer as an autumn plant than this Sedum boldly planted on the grass.

Back again to a far corner, in a kind of sub-tropical nook formed by a dense background of evergreens, the most critical of critics could not but derive unqualified pleasure, and one fairly revels among groups of graceful Bamboos and grand specimen Eulalias in variety. Not far away, in a large bed, from a groundwork of smaller things, spring a number of the noble Musa ensete, as yet unscathed by wind or weather. There is no doubt but that much of the beauty and interest pertaining to these charming gardens is to be found in the great number of evergreen shrubs employed in the original planting. Among these luxuriant Hollies in plentiful variety are a feature. The treatment of this planting has also contributed not a little to the good effect, deep bays being formed, and these in turn being utilised for the cultivation of flowering plants. One such was noticed of Lilium lancifolium, which, although now past its best, must up till lately have been very fine.—K.

Notes & Gleanings

EVENTS OF THE WEEK.—So far as we are aware the only event in London during the forthcoming week that will be of particular interest to horticulturists is the meeting of the Royal Horticultural Society. This will, as usual, be held in the Drill Hall on Tuesday, the 26th inst. Considering the weather that we have been experiencing, the display ought to prove a good and an interesting one.

—— WEATHER IN LONDON.—The weather in London since our last issue went to the machines has been characterised mainly by its mildness. On the evening of Friday last it rained rather heavily. Sunday and Monday were exceptionally mild. On the evening of the latter day rain fell, and continued over a large part of Tuesday. Wednesday morning was foggy.

—— WEATHER IN THE NORTH.—The autumn so far has brought more than the average of rain, and considerable difficulty has occurred in securing the grain crops. The thermometer has frequently fallen to the freezing point, and hoar frosts have already been frequent. Snow has fallen over and again on Ben Nevis. On the morning of the 13th 2° of frost, and 8° on Thursday, practically brought the season of outdoor flowers to an end. Since then a great deal of rain has fallen. Tuesday morning was fine, with temperature 54°.—B. D., *S. Perthshire.*

—— ROYAL HORTICULTURAL SOCIETY.—We are requested to announce that the dates fixed for next year's meetings are as follows :—1898 : January 11th, February 8th, March 8th and 22nd, April 12th and 26th, May 10th ; Temple Show, May 25th, 26th, and 27th ; June 14th and 28th, July 12th and 26th, August 9th and 23rd, September 6th and 20th ; Fruit Show, Crystal Palace, September 29th, 30th, and October 1st; October 11th and 25th, November 8th and 22nd, December 13th. Any gentleman willing to deliver a lecture on any of these dates would greatly oblige by communicating *at once* with the Secretary, 117, Victoria Street, S.W.

—— HORTICULTURAL CLUB.—The first dinner and conversazione for the session 1897 and 1898 took place on Tuesday evening last, and there was a good attendance of members. Mr. Harry J. Veitch occupied the chair, and there were present Rev. W. Wilks, Rev. H. Pemberton, Rev. H. H. D'Ombrain, Messrs. Williams, Cockett, C. Pearson, T. Francis Rivers, H. Turner, Gurney Randall, Assbee, Gordon, Geo. Monro, M. Garcia, and Herr Hugo Muller, President of the Pomological Society of Vienna, who was the guest of the Club for the evening; his health was proposed by the Chairman. A paper was read by Mr. T. Francis Rivers on "Orchard Houses and Fruit ;" an interesting discussion followed, and a cordial vote of thanks was awarded to Mr. Rivers for his excellent paper ; this we hope to give in some future issue.

—— AUTUMN LEAF TINTS.—These this season are truly superb. Rarely have they been seen more beautiful. Leafage in every direction, instead of being withered up, is dying off in rich golden or brown tints, so that fleeting as this autumn colouration will be, how much does it compensate us for the long leafless winter season which so many seem to deplore, yet does help us the more fully to appreciate both autumn tints and spring's varied and lovely greens. But there is an inference to be drawn from this high leaf colouration that cannot be ignored. It means that wood and buds have in all directions ripened or matured with almost unusual excellence, and for that reason we are entitled to look with more than ordinary hope for a fruitful season and luxuriant produce on all fruit bearers, whether wild or cultivated. Whilst we had early rains of exceeding value, helping materially to promote root action and wood formation, we have later had a glorious ripening time; indeed, so far almost a perfect autumn. There have been none of those rain floods which marked the autumn of last year, and did so much to demoralise growth and buds. We saw too plainly this summer the results of that demoralisation in the great decrease of crop compared with the excess of bloom. Next spring, there having been no such injurious factor in the case, as the high-coloured foliage now shows, there should be bloom of the most perfect character, and when we have it amply supplied with healthy pollen, rarely, indeed, do a few white frosts produce material injury. Most certainly the present leaf colouration justifies high anticipations of a good fruit crop next year.—A. D.

—— THE QUEEN AND THE ROYAL HORTICULTURAL SOCIETY.—We learn with much pleasure that her Majesty has been graciously pleased to confer the Diamond Jubilee Medal upon Sir Trevor Lawrence, Bart., President of the Royal Horticultural Society, her Majesty being herself patron of the Society.

—— AWARDS AT THE VICTORIAN ERA EXHIBITION.—We are informed that the Jury of the Victorian Era Exhibition at Earl's Court has awarded to Messrs. J. Laing & Sons a diploma and a gold medal in recognition of the manner in which they have planted the numerous beds in the gardens with flowering plants and shrubs.

—— THE LONDON COUNTY COUNCIL AND EDUCATION.—At the meeting of the London County Council on Tuesday the following resolution was adopted :—"That it be referred to the Parks and Open Spaces Committee and to the Technical Education Board to consider and report upon the practicability of laying out plots of ground in certain parks in such manner as will afford assistance to scholars of elementary and secondary schools in the study of practical botany."

—— GARDENING APPOINTMENTS.—Mr. Hugh A. Pettigrew, for some time foreman in the kitchen and fruit gardens, Cardiff Castle, has been appointed gardener to the Right Honourable Lord Windsor, St. Fagan's Castle, Glamorganshire. Mr. George Parrant, for six years general foreman at Ashby St. Ledger's Lodge, Rugby, has been appointed head gardener to A. E. Guest, Esq., The Cedars, Bere Regis, Wareham, Dorset. Mr. Herbert Hall, until recently head gardener at Broadwater, Godalming, as head gardener to R. H. Otter, Esq., Queenwood, Chertsey.

—— PREVENTION OF THE ONION MAGGOT.—I notice your correspondent, W. Rushton (page 370), highly recommends hellebore powder for the prevention of the Onion maggot. The following is a simple preventive given me by an old market gardener in Cumberland some years ago, and since I have used it I have never been troubled by either the Onion or Parsley fly. This simple receipt is to mix Parsley seed amongst the Onion seed when sowing. The old gardener said the Onion fly did not relish the smell of Parsley, nor the Parsley fly the smell of Onions. Whether this is correct or not I cannot say ; but since trying it I have grown splendid crops of both Onions and Parsley on ground where before it seemed an impossibility to grow either.—J. C., *Lancashire.*

—— HILL AND VALLEY TEMPERATURES.—The difference of temperature between stations in a valley and upon a hill is one of considerable importance to agriculturists, and has occasionally engaged the attention of observers both in this country and abroad. The Agricultural School at Scandicci, near Florence, has made comparative observations during the whole of the year 1895 at two stations, one being situated in a plain, and the other about 220 feet higher, on the side of a hill, both having a north aspect, and the thermometers sheltered from rain and terrestrial radiation. The detailed observations and generalisations are published in the "Bollettino Mensile" of the Italian Meteorological Society for August last. The results are very interesting, and show that in the plain the minimum temperature is generally lower, while the maximum is higher than that on the hill ; in other words, the plain is colder during the night and warmer during the day. The mean annual temperature in the plain was nearly 3° below that on the hill.—("Nature.")

—— A FAIR CROP OF APPLES.—While some are bewailing the lightness of their crop of Apples this season, others are rejoicing in a wonderful supply. One of the most remarkable crops I have seen for a long time I noticed a few weeks ago in an orchard connected with the gardens at Wellesbourne House, about seven miles from Warwick. The trees bearing such fine crops were not old stunted ones, but standards in their prime, having health and vigour as well as fruitfulness. Every branch was literally "roped" with fruit, almost as evenly placed as if they had been secured in position by artificial means. One would naturally expect to find the Apples somewhat small on trees carrying such tremendous crops. This, however, was not the case here, for Mr. Liney, the energetic and practical gardener, as soon as he found he had secured so good a "set" of Apples, proceeded to feed the trees in earnest. Liquid manure from stables and cesspools was poured freely around the trees, and as far away as the branches extended. Under this liberal treatment both trees and crops grew apace, till they presented, as at the time of my visit, an object lesson in successful fruit culture. The varieties were Blenheim Orange, Hoary Morning, Golden Spire, Bess Pool, Wealthy, and several others. One favourable point in connection with the situation of the trees is that they are sheltered on the north and east by a fringe of other trees. This is worth the attention of planters.—H. D.

—— ROYAL APPOINTMENT.—Messrs. Dobbie & Co., seed growers and florists to the Queen, have been honoured with the following addition to their Royal Warrant of Appointment:—"The name of Andrew Mitchell is added to this Warrant as one of the firm of Dobbie & Co. by desire of the Lord Steward, the Earl of Pembroke.—Signed, T. C. March, Secretary, Board of Green Cloth, Buckingham Palace, 16th October, 1897."

—— DISTRIBUTION OF VICTORIA MEDALS.—The next meeting of the Committees of the Royal Horticultural Society will be held on Tuesday, October 26th, at the Drill Hall for fruit, vegetables, flowers, and Orchids. At 1.30 punctually the President and Council entertain at luncheon the sixty recipients of the Victoria Medal of Honour, granted by her Majesty's gracious permission in celebration of the completion of the sixtieth year of her reign. The lecture announced for the 26th will be postponed, and instead thereof, at three o'clock, the sixty medals will be distributed to the recipients by the President in the Drill Hall.

—— HERBACEOUS PÆONIES.—Beautiful as these are in the summer, grand indeed as are their flowers, what a penalty has to be paid in the autumn for this beauty, because the leafage dies off to a dirty brown hue so early, and must remain for some time apparently to mature the crowns ere it is safe to cut it away. Is it really needful that the stems should thus remain uncut so long after the leaves have become brown and unsightly? I have been told that early cutting, that is as soon as the leaves begin to decay, would materially weaken the crowns for the succeeding year's blooming. There are few herbaceous plants where such is the case, and of which the growths may be cut so soon as the leafage dies. The various German Irises are also very unsightly in the autumn as the flag-like leaves decay. Really these plants hardly seem worth places in the garden, especially when we get such wondrous beauty from the English and Spanish varieties.—A.

—— THE QUALIFICATIONS AND DUTIES OF A GARDENER.—Mr. J. Mayne, gardener to the Hon. Mark Rolle at Bicton, read the first paper in connection with the autumn session of the Devon and Exeter Gardeners' Association at the Guildhall, Exeter, on Wednesday last, taking for his subject "The Qualifications and Duties of a Gardener." He said that when a youth started to learn gardening he should begin in the kitchen garden. The majority of youths wanted to start under glass, but if they did they did not care to go back and work in the kitchen garden, and so knew next to nothing about the latter very important branch. He considered a youth ought to serve at least two years in the kitchen garden, and, if possible, be moved into the flower garden for another twelve or eighteen months, especially if the latter were away from the kitchen garden any distance, and where a regular staff of men was kept for each department. He would get an insight into bedding arrangements in early summer and again in the autumn, as well as the general routine practised in a well-kept garden, where neatness should always be noted. The youth's next move should be under glass, and his first duty there, for a few months, at any rate, should be to work with the foreman or a good journeyman to get an insight as to airing, shading, and watering. The last-named was of the utmost importance in gardening. He should spend one year at least in the plant and another year or more in the fruit department. Then, if a youth had done between three and four years outside, as advocated, he ought to make a change, and, if possible, get into another county, as the climatic conditions varied so much, and because of the necessity of making experience as wide as possible in that respect. Two years was quite sufficient for a young man to remain in one place after his first post. What he required was to gain fresh experience, because each gardener had his own *modus operandi*, and in after-life he would be able to use his own discretion as to which method or practice would be most successful. Probationers ought in all spare hours to endeavour to educate themselves by reading and studying, make a practice of keeping a diary, so as to be able to enter each day what work had been done under glass as well as outside, which they might, in the future, find of great service as a book of reference. Mr. Mayne proceeded to consider the fully qualified gardener and his duties. When a man took his first head place or new charge his permanent duty should be to find out what his employer's likes and dislikes were respecting fruit, flowers, and vegetables; next to secure discipline and punctuality. He must thoroughly understand pruning, disbudding, and thinning, and should perform such work, as well as the more delicate seed-sowing and the packing of fruit and flowers, as far as possible himself, and should closely superintend watering and outside work. He should also pay nightly visits to see that temperatures of houses were properly maintained. A vote of thanks to the essayist was passed.

—— DEATH OF Mr. I. DAVIES.—There died at Ormskirk, on the 10th inst., one of the old school of nurserymen, Mr. Isaac Davies, of the Brook Lane Nurseries, at the ripe old age of eighty-five. He was the raiser of many good Pelargoniums, Cinerarias, and Calceolarias nearly forty years ago. Azalea and Rhododendron hybrids, through his skill, have found their way into commerce. Azalea Daviesi, Avalanche, and Rhododendron præcox, the beautiful greenhouse varieties, Countess of Derby, Countess of Sefton, and Countess of Skelmersdale, are amongst the many the deceased gentleman put in commerce.—A. O.

—— CYCAS REVOLUTA IN FRUIT.—I send herewith for your notice a fruiting piece of Cycas revoluta. We have two large plants here, and this year one has thrown up a fruiting crown. Will some reader kindly say if it is a common occurrence, also if it will spoil the plant? I believe there are male and female plants, which, no doubt, through want of pollenising, accounts for the small ovules, of which there are several dozen, being hollow. There are only four or five large ovules (as per specimen); these contain a kernel. It is our intention to try if they will germinate. Any information respecting it will be greatly appreciated.—T. LEITH, *Beaurepaire Park, Basingstoke.*

—— "FAKED" POTS OF CHRYSANTHEMUMS.—A fraud that was common a year or two ago seems to have again made its appearance, that is, the "faking" of pots of Chrysanthemums, which are palmed on an unsuspecting public by peripatetic vendors. One day last week a gentleman in Kilburn bought half a dozen pots filled with vigorous looking plants, covered with beautiful blooms, at 1s. 6d. each. An hour or two later while examining his purchase, he had his suspicions excited by noticing a couple of varieties of white in one pot. He emptied it out and found that the spikes had been cut from plants, and firmly embedded in the soil in the pot. Not one of the lot had a root!

—— PRESENTATION AT EASTNOR CASTLE GARDENS. — Mr. F. Harris, who has been head gardener at Eastnor Gardens, has resigned his position, and on Saturday last, after he had entertained the garden staff and a few friends to supper, he was made the recipient of a gold watch and an illuminated address. Inside the case of the watch was the following inscription—"Presented to Frank Harris by those who have been connected with the Eastnor Gardens during the nine years he has lived there, as a token of esteem (October, 1897)." The address spoke in praiseworthy terms of the way Mr. Harris had carried out his duties, and wished him every success in the future. Mr. W. Coleman, agent to Lady H. Somerset, made the presentation. Mr. Harris thanked Mr. Coleman for his kind remarks.

A GARDENER'S HOLIDAY.

As the season comes round, even a gardener looks for a turn somewhere, and in that respect I am one of the fortunate ones, for my employers never fail to remind me to take my holiday.

I have long had a desire to see Aberdeen, so I made my way to Hull, placed my bag on a steamer, and then, having a few hours to spare, went to Beverley to see Mr. G. Swaile's Roses, and was shown a grand collection. The plants, which have not been fed to produce big show blooms, but short solid wood, are dwarf and sturdy, and I feel sure they will produce excellent flowers. I was also shown an interesting garden at Beverley belonging to Mr. Boyes, which is full of seedlings, hardy fruit trees, bees, and birds. I quite expect some of the seedling Apples will be heard of in high quarters in the future. But time and tide will not wait, so I returned to the boat, which arrived in Aberdeen after a twenty-two hours' run. Being Sunday afternoon, everything was very quiet. Sandy was wearing his religious face. However, I took a seven-miles drive up the Deeside, and found it both enjoyable and instructive. The next morning I made one of an English party who took return tickets to Braemar. The railway runs along the beautiful valley of the Dee as far as Balater, thence by coach, passing Balmoral and Old Mar Lodge on the way. I wish I could give readers an idea of this lovely piece of country. Balmoral is situated in the most beautiful valley imaginable. The Pine-covered hills are superb, and such splendid specimens of Araucaria imbricata show the climate must be very temperate there. A hearty lunch at Braemar, and our return journey commenced.

On Tuesday morning I found my way to Messrs. Cocker & Sons' Rose Nursery, and was being shown through the Rose portion when Mr. Cocker, jun., who was acting as guide, was called away to the death bed of his father. The nurseries are situated on a slope facing south, but as the builders are making sad havoc, laying out roads and streets through the middle of the Rose ground, the firm will have to seek for a fresh site very soon.

I was shown over the granite quarries and works, which were very interesting. Aberdeen is a beautifully clean city, and well worth a visit. Nothing could excel the trip back to Hull. The sea was as smooth as oil, the sky lit at night by innumerable stars, light night, and the day warmed by the brilliant sun. After spending a few days on the Lincolnshire coast I returned home to my duties.—J. MALLENDER.

ROSE CRIMSON RAMBLER.

AT the opening meeting of the Torquay Gardeners' Association, the President, Dr. R. H. Ramsay, in his annual address, gave an interesting instanee of an old Rose being reintrodueed with great sueeess as a new variety—namely, Turner's Crimson Rambler. He knew it, he said, forty years ago in the garden of Mr. Jenner of Edinburgh. I am inclined to think he was not correet. Can any reader kindly give me information about it?—C. D. ELLIOTT.

ROSE NOTES.

IT has oeeurred to me that a few notes upon such Roses as invariably give a good autumnal display may be welcome. This year those I will name are even better than usual. For that matter, all our Roses have been good later in the season than is generally the case, and at present (first week in October) our Rose gardens are almost as lovely as is often the case during July. The weather has been favourable; there have been welcome showers, a warm soil, fewer insects and diseases than usual, and, if we exeept a few rather boisterous winds, the late autumn of 1897 has been one of the best for Roses during the last decade.

Several of our best autumnal Roses are not only good at that date, but give us a pleasing show all through the Rose season. It is these we should plant mueh more freely than is the ease in many gardens, there being far too great a tendeney to plant sueh varieties as are seen in grand form at exhibitions. One scarcely ever sees Dr. Grill, G. Nabonnand, Rainbow, Camoens, and others of like form, at an exhibition, unless it be in some of the few garden elasses and displays at the National Rose Society's exhibitions. I would warn any intending purchaser of the absolute neeessity of looking up the habit of a Rose before planting it merely from the fact of seeing it so grand in the exhibitor's stand.

One of the best Roses now in bloom is G. Nabonnand. It is good all through the season, is matchless in colour and perfume, the foliage is particularly handsome, and it is a really grand grower. Camoens is also good; Dr. Grill, Bardou Job, Beauté Inconstante, Comtesse de Casserta, Crimson Bedder, G. Regis, Madame Pernet Dueher, Papa Gontier, Madame Isaac Pereire, William Allen Richardsou, Maman Coehet, Souvenir de la Malmaison, Marquis of Salisbury, Queen of Bedders, Auna Ollivier, Boule de Neige, Mrs. R. G. Sharman-Crawford, Mrs. Rumsey, Mrs. W. C. Whitney, Mrs. W. J. Grant, Caroline Testout, Dupuy Jamain, Marehioness of Lorne, Franeisea Kruger, Madame Hoste, Général Jacqueminot, Homère, La France, Rubens, Safrano, Madame Faleot, Madame Charles, Madame Lambard, Marie Van Houtte, Mrs. John Laing, Perle des Jardins, Souvenir d'un Ami, Marjorie, Edith Gifford, Kaiserin A. Victoria, Red Safrano, Viseountess Folkestone, and Lady Mary Fitzwilliam are others whieh never fail to give a good autumnal crop in my garden, and are also in good form during the earlier part of the season.—ROSARIAN.

ROSES FOR MARKET.

DURING the time Roses are not plentiful out of doors, and also when those in the average amateurs' houses are not in full eut, whieh ranges from about the end of March until the end of May, Roses generally command a paying price in the market. It is when plentiful, and when almost every little greenhouse ean produee a few blooms for the proprietor and friends, that Roses are at the ridiculous priees amateurs reeeive for their small consignments. Unfortunately for them, they imagine they will reeeive mueh the same prices as they were asked for a few blooms some month or six weeks earlier, not allowing for waste, and a small margin as profit to the retail florist; and more important still, forgetting, or not realising that only a couple of weeks bring a vast quantity of Roses in at one time.

During the months of April and May almost every Rose that is growu under glass is in full blossom, and the only really paying seasons are between Oetober and the end of Mareh; the nearer to Christmas and the early part of the year the better. They also rise in value very rapidly after the first smart frost, as up to that time we can eut from the open. Popular as the Chrysanthemum may be as an early winter flower, the public never really deserts the national flower, and Roses are always in demand. Of course, to get them at these desirable seasons we must take a rather different course to that made use of by the average amateur, henee these notes.

First of all I think it would be well to give a short seleetion of varieties, as no objeet is attained in having a large number. The best are the best, and it is only a matter of planting more of these. I have found Niphetos the best pure white; Princesse de Sagan and W. F. Bennett the best short-growing erimsons, and Général Jaequeminot the best red Hybrid Perpetual; Prinee Camille de Rohan and Fisher Holmes the best very dark varieties; Mrs. W. J. Grant, Mrs. W. C. Whitney, Papa Gontier, and Madame Lambard the best deep pinks or rosy erimsons; Souvenir d'un Ami, Catherine Mermet, and Mrs. R. G. Sharman-Crawford, pinks; Isabella Sprunt and Perle des Jardins, yellows; Madame Falcot and Franeisea Kruger, apricot and saffron; with Maréchal Niel, W. Allen Richardson, and Reine Marie Henriette as climbers; G. Nabonnand being a grand salmon pink.

If asked to select six from the above, always bearing in mind that they are wanted to force early and open their flowers well, I would keep to the three climbers, and add G. Nabonnand, Niphetos, and Madame Falcot. Perle des Jardins, Mrs. W. J. Grant, Catherine Mermet, and Général Jaequeminot come next in my estimation.

There are two methods of obtaining Roses between October and the end of March, some establishing the plants in borders, and others keeping the whole of them in pots. We find a combination of these methods the most servieeable, and it may be well to deseribe the house the Roses are grown in, as being the shortest way of dealing with the subjeet. The house runs north and south, thus receiving the morning and afternoon sun, while at midday the rafters afford a partial and welcome shade. It is 22 feet wide, 120 feet long, and 10 feet high. There are uprights through the eentre, and supports to a purline on each side, these supports resting upon the outside walls of the eentre border. The side walls are 3½ feet high, the side borders the same width, as is also the path going round the eentre border, which is 8 feet wide. When empty, the spaee allowed for pathway seems exeessive, but if you will follow me you will see how it is made use of.

The paths are sunk to a depth of 1 foot. This gives more head room without extra height in the structure, and also makes the borders more convenient. All around the eentre border a 9-inch wall is built, about 15 inehes in height, and the top of this is concreted over to make a level surface. The walls keeping up the side borders are one brick thick only; and outside of these, but in the pathway, runs a double row of 4-inch pipes; a single 4-ineh pipe runs along close to the outside walls, and about 6 inehes above the surface of the border. Shelves are fitted to the purline uprights, and come in very useful at many times of the year. There is no bottom or side ventilation, but some fair-sized lights at the top.

Now, a word about the soil in the borders. This consists of good turfy loam, some very stiff earth, and a large proportion of decayed weeds, vegetable refuse, and leaves, upon whieh a quantity of night soil was placed some few months previous to use. By burying this a little all unpleasant odours are lost; but for that matter, if one is to grow for market, the fastidious nose must be left behind, the foliage and flowers feeding upon ammonia from manures to a mueh greater extent than many persons would credit.

Against the side walls are plants of the medium growing varieties already named, these being trained to three wires, and planted about a foot from the wall. Upon each purline support a climber is growing, these running over the cross ties and along the purlines. Pruning must be dealt with in its own place. Each side, and also the eentre border, is used for Roses in pots, and when a row of healthy plants stands around the centre border, upon the 9-inch wall, their growth spreads out so mueh that 3½ feet is barely enough for the pathways, especially as there is overhanging growth from the side borders as well. The house is divided into two seetions, stop valves being fitted so that one section can be heated without influencing the other. So much, then, for the house and its arrangement; we will now go a little closer into cultural details.—PRACTICE.

(To be continued.)

THE ROYAL HORTICULTURAL SOCIETY.

EXHIBITORS' CARDS AT THE DRILL HALL.

I DO not know who is responsible for your report of the doings of the Fruit Committee at the Drill Hall on the 12th inst. I sent up a small collection of Apples with the intention of showing what could be done here amongst the coaldust and smoke, and I was very pleased to hear from the Secretary that I had been awarded a silver Banksian medal. The way in whieh you have alluded to them in the Journal is inaccurate, in fact, reads ridiculous to me. The report says, "J. Ester, Esq., Wakefield, showed a few Apples." I should be extremely obliged if, in your next issue, you would correct it to something like the following:—"J. Easter, gardener to Lord St. Oswald, Nostell Priory, Wakefield, was awarded a silver Banksian medal for a collection of Apples."—JOHN EASTER.

[Well may the award of "J. Ester, Esq.," appear "ridiculous" in the eyes of our correspondent, Lord St. Oswald's able gardener. The Royal Horticultural Soeiety is responsible for the error, which does not appear in our columns alone. Our reporter copied from the card which the officials of the Soeiety attached to the fruit. We do not know whether all exhibitors write their names and addresses fully and clearly or not when making their entries; but we do know that the inscriptions on the R.H.S. cards have many times been incomplete. Errors of a similar description to the one cited have been passed into the Press before, while others have been detected and corrected. It used to be the custom to have the names and addresses of owners of exhibited produce boldly and clearly written on the cards, also the name of the gardener in all such cases as Mr. Easter's. The entry of this exhibit ought to have been as from "Lord St. Oswald, Nostell Priory, Wakefield; gardener, Mr. J. Easter." This is in exact accordance with the instructions of the Royal Horticultural Society in par. 27, page 9, of the Society's "Rules for Judging," and if the injunction had been followed the error in question could not have occurred.]

ORCHIDS

Cypripedium hirsuto-Sallieri.

The collection of Orchids grown at Burford Lodge by Mr. W. H. White for Sir Trevor Lawrence, Bart., is rich in rare species of the greatest interest. As well as these, it comprises numbers of handsome hybrid Orchids of various kinds, and amongst the most beautiful of these must be classed Cypripedium hirsuto-Sallieri. This was shown at the Drill Hall in the spring of this year, and received from the Orchid Committee an award of merit. A flower is depicted in the woodcut (fig. 58). With such a name as this there is no necessity to give the parentage. The flower is of good size and of exceptionally good substance. The dorsal sepal is delicate greenish yellow, surrounded by a broad white band; while the pouch is of a similar hue, but is sparsely suffused with brown. The petals are soft rose at the lip and yellow at the base, so that it may readily be imagined how beautiful is this hybrid.

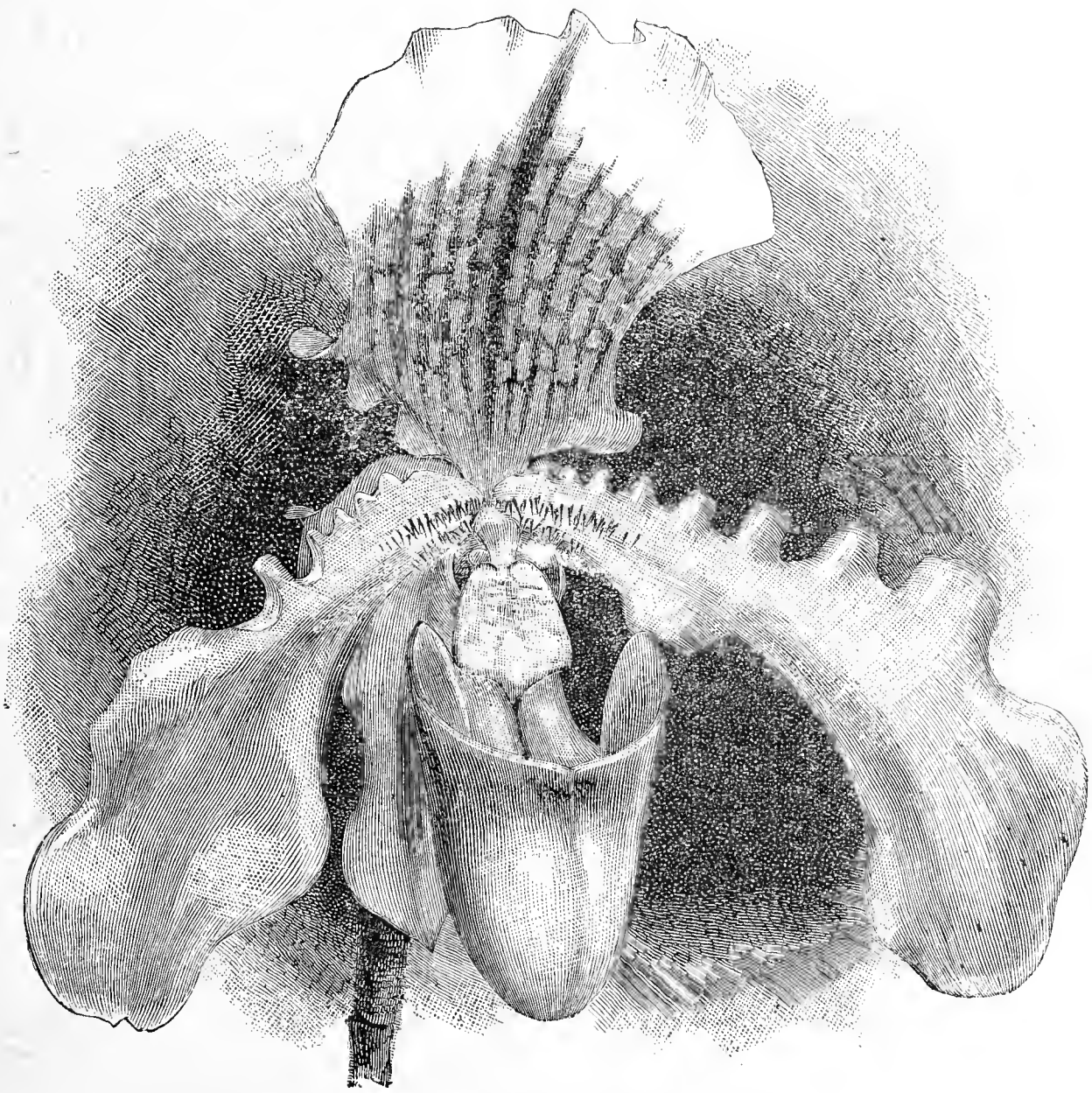

Fig. 58.—Cypripedium hirsuto-Sallieri.

Dendrobium Phalænopsis Schroderianum.

I have posted you two sprays of Dendrobium Phalænopsis Schröderianum for your inspection, thinking they might interest you. The plants we find to be of most easy culture, and are throwing from two to three spikes of bloom to each new pseudo-bulb. I grow fifty plants, and they are now a grand sight.—F. Ashman, *The Gardens, Billing bear Park, Wokingham.*

[We were greatly interested in the spikes of Dendrobium Phalænopsis with which our correspondent favoured us. They were of exceptional length, and the several flowers were beautifully coloured. In form and size the individual blooms compared very favourably with any we have seen. We are much obliged to Mr. Ashman, and are of the opinion that the details of his system of culture would be read by contributors to the Journal with pleasure. The procedure must be good, or such spikes could not be produced.]

Odontoglossum grande.

Had Mr. G. Ure Skinner done no more than discover and introduce this fine species to our gardens he would have rendered a great service to horticulture. It was one of the first Orchids I ever saw in flower, and every season as it comes round increases my admiration for it. A fine specimen I had under my charge in the West of England filled a pan about 15 or 16 inches across, and annually produced five or six spikes of flower. In general appearance the plant is so well known, and the blossoms are so universally admired, that little in the way of introduction or description is necessary. In short, then, it is the largest flowered, the most brilliantly coloured, and most generally useful Odontoglossum in existence, and looking at the number of beautiful plants this favourite genus contains, this is praise indeed.

Its cultivation differs somewhat from that of the crispum, triumphans, and similar sections of the genus. It delights in a rather higher temperature than either of these kinds or their varieties, but, like them, delights in abundant moisture. Its habitat is described as "dark ravines near Guatemala—in situation where it is secure of moisture and abundant shade." But in the usual Odontoglossum house, if this is kept as it should be for the truly Alpine kinds, there is not much fear of O. grande getting too little shade. Indeed, it is more than likely that in nine cases out of ten it is far too heavily shaded to get the best results. It is true the sun must not be allowed to shine on the young leaves and growths, but when these are fully developed and the blossoms past there is no doubt a little sun helps to consolidate the whole system of the plant, and prepares it more thoroughly for its winter rest.

There are in many places ferneries kept at about a greenhouse temperature, fairly heavily shaded during the summer, and kept moist; but in autumn, when the Ferns have finished their growth, or nearly so, more light is allowed. These are ideal places for O. grande, and in a few seasons small bits make fine handy specimens, that from now onward until Christmas may be depended upon to keep up a fine show. Several plants here in 5-inch pots are carrying a dozen and upwards of the characteristic flower, the effect of which when grouped with some of the fine forms of Adiantums, is very fine. In arranging the plants it is wise to let a little of their natural foliage be seen, as this greatly helps the effect.

With regard to the treatment of the roots, their appearance is the best guide to the class of compost needed. It will be noticed that these are considerably larger and more fleshy than those of the plant with which I compared them above, and consequently they require a rougher and very open make-up of material. A clean, well-dried peat, broken in lumps about the size of a pigeon's egg, and fresh green sphagnum moss, in equal proportions, suit the plant well; but as this of itself would run very closely together, plenty of rough material, as potter's ballast, charcoal broken in lumps, or rough crocks, should be added. About two-thirds of the depth of the pots used should be filled with drainage, the remaining third being ample room for compost.

As the roots are fairly strong a pot at least 2 inches larger than the plant every way should be used for large specimens; for smaller ones the margin should be comparatively narrower. In removing the plant from the old pot care is necessary to detach the roots without injury, but is well repaid by the difference in plants so treated and those roughly handled. Any chance bits that may be decayed should be cut out clean, and also the greater portion of the old compost. Often the roots come away with pieces of charcoal or crocks attached, and it is important that these are not severed if it can possibly be avoided. If the pseudo-bulbs are at all crowded and riding on each other a few of the oldest and weakest may with advantage be removed, but never cut away one bearing foliage or one likely to produce a

sound back break. Set the base of the plant well up, and finish off the compost neatly and firmly.

The new material will be found to dry very rapidly at first, and in consequence a good deal of water has to be applied. But it must not be overdone, or the compost gets sour, and the fresh young roots will not enter it freely. When growth is active the plants must be watered almost daily if properly potted and well established; but when the flowers are past, and the plant at rest—for this Odontoglossum has quite a distinct resting season—less will suffice. By no means dry the roots or allow the bulbs to shrivel, but make a distinction in the two seasons. In a properly balanced temperature insects are not usually much trouble; but sometimes scale put in appearance. When first seen let the plants be well sponged leaf by leaf, and continue this until they are thoroughly clean. As noted above, this plant is a native of the vicinity of Guatemala, whence it was introduced in 1839, and flowered for the first time in this country two years afterwards at Woburn.—H. R. R.

IS GARDENING DECAYING?

In a multitude of critics there is—confusion. Full cry, indeed! I should think they are; but, after all, there is very little wool. I am not quite sure in what order I ought to deal with them; so, in the words of wise old Will, I'll stand upon no order at all. Perhaps I am here suggesting a dangerous parallel, since his heroine's mental state was not of the soundest when the adjuration was laid upon her, and she got worse instead of better later on. But I am not quite "gone" yet, and there will have to be a good deal more pungency, as well as cogency, in future rejoinders than in those in the issue of October 7th before my mental balance is disturbed.

The Grapes and their Apologist.

There is such a charm and delicacy of touch in the work of one literary artist that I think he fairly claims first attention, and I hope both he and everybody will perceive at a glance that I am nothing if not fair. This artist, "A. D.," in his sweet and pleasant way, refers to me as a "croaker." Was this correspondent so absorbed in his new character of apologist for Grape growers as to forget that an epithet, however carefully selected, is not argument? Truly, when I bear in mind his recent performances I ought to feel how seriously I have vilified British Grape growers. Anyway, nobody, it is clear, is to blame. What matter if our exhibitors cannot get their bunches to the show without dividing them into sections (like Nile boats) and then putting them together again? "A. D." comes along and proves that all is as right as right can be. As a matter of fact, you only have to look at it in the proper way and you see at once that far from gardening being decaying it is taking on new attributes. Shades of Dickson and of Henderson! What a great honour it must be for these Grape mechanics to be made to shine so brightly under the limelight turned on by the gentle "A. D.!"

The Palace Grapes and "A. D."

But "A. D." has another rod in pickle for the croaker. He shows by the apologetic attitude which he assumes towards them that the Grapes at the Crystal Palace were not what they should be. This might be assumed, without any undue straining of the significance of facts, to be something in the nature of a corroboration of the croak. But not at all. "A. D." triumphantly proves that no weight whatever should be attached to it; indeed, it might almost be imagined that it was a matter for congratulation all round. To employ plain words, his remarks are either a tissue of trivial excuses or else a serious reflection on the good sportsmanship of our Grape growers, and of their loyalty to the leading Society. In the old days our best exhibitors were not such ignoble money-grubbers as to hold aloof from representative shows because the prizes were small. They fought in no small degree for the credit of themselves, their craft, and their country. Has the fever of the gold-hunter spread itself over horticulture? Do we look for a De Beers mine under the roof of the Drill Hall, and a Klondike in the grounds of the Crystal Palace?

The Mutual Admiration Association.

A cool old rider is "Melton." He has no doubt been over a fence or two, and a spill more or less is of small consequence. He thinks me a little hard in girding at the Mutual Admiration Association into which gardening has, in my opinion, resolved itself, but he does not forget to turn the phrase against an opponent. A Mutual Admiration Association of one! How now, "H. D."? Prove that the thing which exists in the unit does not exist in the whole, and you will do horticulture a service, as well as bring down confusion on my offending head. Perhaps you would prefer to suggest that there is no whole and only one unit—the aforesaid "Melton." It would do just as well for me; but I cannot take the Mutual Admiration Association with the same ease that he does. It is an obstacle in the way of real progress, and it might have for its motto an ancient couplet (slightly altered):

> Be to our faults both deaf and blind, in need;
> And to our merits very kind indeed.

The Classes and the Masses.

It occurs to "Chrysanthemum Lover" as a triumphant refutation of my contention that gardening is decaying to advance the spread of flower culture among the dwellers in our great towns. What on earth has that to do with the matter? I am not going to deny the obvious fact that the population is increasing, nor the equally obvious one that with more windows we have more plants. But these people are not gardeners, and what is more, the millions of plants in towns are produced, not by swell gardeners who hob-nob together at shows, but by plain plodding workers whom you never hear praising each other or extolling their own abilities before the world. It is the work of the classes, not the love of the masses, of which I lament the decay. I rejoice to think that the love of flowers is spreading amongst the people as much as I deplore the decline in the standard of professional work, broadly speaking, because, of course, I know there are exceptions—a fact I hardly thought necessary to explain to intelligent men.

The Decorations Question.

I beg to put "Chrysanthemum Lover" a plain question. In the garden which he managed, and in connection with which decorations "on a gigantic scale" were carried out, was there the full round of customary gardener's work? I mean, were there the customary ranges of vineries and Peach houses? were there Cucumber and Melon pits? was there a kitchen garden with fruit walls? and had "Chrysanthemum Lover" charge of them all? I ask these questions because in quite a number of places that I have visited of late years there have been such reductions in other departments as to far more than balance the extra decorative work; and I put it explicitly because on the answer to it depends the entire position. I know of more than one place where the "decorative" man has no fruit to grow at all, but he grumbles as furiously as if the supply of Covent Garden itself was upon his shoulders. If his excuses are not "lame," whose are? As regards "Chrysanthemum Lover's" other remarks, perhaps it will suffice if I set the first line of his second paragraph against the last line of his fourth. Here they are in all their consistency:—

(1). "Is gardening decaying? Certainly not."

(2). "This has been the cause of the serious deterioration in gardening in many places."

Traveller's Tales—and Retorts.

Yes, "Vespa!" I am quite prepared to point the way to better things, and to begin I will venture to give a little lesson in grammar. I cull the following delicate blossom of composition from his second paragraph:—"What would he have when, in flinging down the gauntlet, from the 'rock bed of unassailed accuracy?'" Where is the sequence here? There is no finish to the sentence. If "Vespa" had left out the "when" I could make something of it; as it is I can make nothing. If he will give me the benefit of grammatical criticism I will answer him; in the meantime, this lapse, coupled with some recent criticism on the spelling of fruit names at the Palace Show, suggests one direction in which gardeners may hope to achieve "better things."

The Threatened Boycott.

For a dignified answer to an honest criticism commend me to "Cedo Nulli." He retorts upon me by threatening to give a warm quarter of an hour to the next unfortunate "commercial" who steals tremblingly into his autocratic presence. It would appear from this that "Cedo Nulli's" only conception of a traveller is the man who comes along with an insect wash or a new plant, and because a traveller of another sort, one who moves from place to place, even myself, records the result of observation, the poor commercial is to be snubbed. Not only so, but others are to be punished. Imagine an agent for a "Critic's Educator," "Florists' Instructor," "Gardeners' Dictionary," or any other valuable work approaching "Cedo Nulli!" Author, artist, printer, publisher—all are bundled off unceremoniously in the person of the miserable agent. Is this justice, as administered by the modern gardener? And if it is, what about fair play? Is that decaying, too?

Belated.

I should like to explain to those of my opponents who honour me with attention in various ways, that I cannot always keep up to date in returning the compliments they shower upon me. Many, and often long, journeys forbid, and rests protracted enough for writing are only occasional. The life is, perhaps, on the whole no better than was spent in the days of growing and showing, potting and pruning, digging and decorations, and other items in the gardener's life, but one sees and hears much. Then, in addition, liberty is sweet, and the "crumbs" picked up by the way would be sweeter but for that novelty to gardeners—the income tax.—Traveller.

The several articles which have appeared of late bearing on the decadence of gardening have awakened much interest among the hosts of Journal readers, and although, no doubt, there have been many truths advanced, there is undoubtedly some suspicion of exaggeration in other cases. The contribution by "Chrysanthemum Lover" (page 344) was no less interesting than some other previous articles, and contained many truths concerning the present and past state of gardening.

Your correspondent truly says that gardening is not decaying, but changing in form. In how many private places now is there not some competition with the market men, and this, too, on a reduced staff to carry on the work? This may not be true in the case of smaller gardens surrounding provincial towns and cities, but in large country seats, where incomes are derived mainly from the land, there is this restriction of labour and capital, and a larger output demanded to help to maintain it. In the face of such surroundings, how can gardening in its true sense be carried on? and how can fruit trees on the open walls be trained to the perfection that obtained in the olden days?

There are some gardeners even now who take great pride in their wall trees and make them their hobby. When a gardener has to carry on the work of a garden with one or two men, how can he be expected to have the same smartness as his predecessors of some thirty or forty years since, when twice the number of men were employed to do the same work? It it is an obvious impossibility, and if wall trees must be trained as they were then, something else quite as important must be neglected. My aim has been to try and keep everything under my charge as presentable as circumstances permit without spending unnecessary time on one object at the expense of another

I am quite prepared to admit that a well trained tree is an object of which a gardener, whether he be head or subordinate, may well be proud. The methods adopted now scarcely compare with those of forty years ago; then the object was to build up the tree slowly and perfectly from its base; the more modern system is to furnish the walls in the shortest space of time, and this express method, if it may be so termed, is only a repetition of what occurs daily in other phases of gardening. In many gardens a man was employed expressly for the wall and other trees; very little work beyond that was expected of him in favourable weather; at the present time, and for several years past, this appointment has become obsolete, and yet there are the same number of trees demanding attention from the existing staff, and the best has to be made of the altered circumstances. Unfortunately this is only one out of hundreds of similar cases; but in spite of this I hold that gardening is not a decaying industry, or how can the support of the numerous flower shows, both summer and Chrysanthemum, increase as they do year by year?

"H. D." was taken to task because he advanced decorative work as one reason why fruit trees had less attention paid them outdoors. This explanation is certainly reasonable enough, for certain it is that such work requires much preliminary preparation and study, when it has to be carried out in a large way; and I should say it is a lame argument to snggest that this, and every other extra class of duty that modern times demand, can be done by a limited staff without a corresponding loss to some other department.

Because fruit trees are neglected outdoors on walls, from "Traveller s' point of view, everything else suffers proportionately. No credit is given for Peaches, Nectarines, or other fruit grown under glass; but, judging from inferences, under-glass cultivation is taken to represent an easy-going method, bearing no comparison with outdoor fruit. In the case of Peaches, Nectarines and Figs, or even Pears, Plums and Cherries, who would not grow them under glass protection if they had the means of providing it, to change what might be an uncertain crop into a reliable and unrisky one? Glass cultivation of fruit evidently is taken as representing the decadence of gardening with such as "Traveller," but he will have to write an additional letter or two to the *Journal of Horticulture* before he will carry conviction into the minds of many of its readers, in bearing out such views.

There is another aspect which does not seem to have suggested itself to those who believe in the decay of gardening, and that is the advancement in education, and the greater facilities for learning through the Press. If gardening decays to the extent that is set forth, what becomes of the teachings of the many excellent weekly periodicals, why are they published, and what good do they do if we profit nothing by them? Really the more one reflects on the theme the more monstrous does it appear that gardening, more than any other industry, should be considered not only stationary, but decaying, and this simply because less time is spent on wall trees than was the case forty ago.—A COUNTRY GARDENER.

AMIDST the forces of present day gardeners "Traveller" has fired a shell, and so jubilant is he of his success in silencing the whole army, that he rushes hastily into print, and endeavours to show the horticultural public the soundness of his statements, and the fallacy of any argument in contravention thereof. The fraternity flinches, says "Traveller," from the challenge he has given them, and silent are the men who at shows may be heard laudating their own handiwork.

For how many years "Traveller" may have been watching the decay of gardening we will leave for future consideration, but seeing he claims the temerity to speak what he thinks, why has he not the courage also to disclose his name and whereabouts, when we should probably be better qualified to judge of his experience? Some of us really have more than a year's experience, and if these form the congregation of talkers and writers among whom the shell has dropped, let me assure "Traveller" that, although the company stand amazed and astonished at the great detonation, they are not, as he would have us believe, absolutely driven into the mysterious future, as they will now be found willing and able to maintain their claim to the position of men possessing sound general horticultural ability.

I am not one of those who would allow to sink into insignificance the fact that in the old days there existed men of good general horticultural experience. No, I respect too highly the doings of many who have gone before, but must remind "Traveller" that, where in those days there lived one gardener of superior ability, to-day there may be found ten. Does this assertion savour of decay in gardening?

How many present day gardeners can we find possessing the knowledge to grow all they require for decorative purposes—aye, and have the ability to arrange the same in the most artistic styles? Did "Traveller" ever experience better grouping at shows, more artistically decorated dinner tables, or taste better flavoured fruit and vegetables? Has the gardener of to-day not to maintain in quite as good condition as formerly the flower and kitchen gardens, as well as the ornamental grounds surrounding his employer's abode, to say nothing of present day furnishing, an experience in which "Traveller" lays claim to possess more than ordinary ability?

Probably whilst championing the cause of all-round gardening, he would have us believe that in the old days, when glass structures were heated by the aid of brick flues and the scythe took the place of mowing machines, that those were the days when good all-round gardening was accomplished. Without the least intention to cast reflection upon those ancient horticultural appliances, in the company of which many of us have spent numerous happy days, we acknowledge the advantages of modern science, and can assure "Traveller" of our ability to work with either.

It is said that the growing of wall fruit is neglected that Chrysanthemums may have attention. "Traveller," perhaps, would be afforded a little gratification if, when going his rounds, he visited some establishments where Chrysanthemums claim a goodly portion of the gardener's attention. to witness the condition of the wall trees and the fruits thereof, would probably be to see evidence of the fact that even this particular branch does not escape the gardener's care. A collection of Orchids would probably be more appreciated by "Traveller;" and whilst acknowledging the pleasure afforded to many in this respect, there still remains the contention that we have Orchid as well as Chrysanthemum specialists.

That the extended cultivation of the "autumn queen" has stirred up admiration and interest amongst many at a very dull season of the year, and that a national horticultural industry of more than ordinary importance has resulted therefrom, is a fact over which "Traveller will do well to ponder; and he will realise another fact – that the cultivation of Chrysanthemums is not, as he would have us believe, on the decline, but in the ascendancy.—J. P. LEADBETTER, *The Gardens, Tranby Croft, Hull.*

SILICO-FLUORIDES IN HORTICULTURE.

IT does not seem to be generally known that in fluorine we have perhaps the most efficient of all germicides. For some reason, which is at present unknown, all lower organisms seem to be totally incapable of resisting its action, and it is not impossible that in course of time it may prove to be one of the most important of all the elements in respect of its utility to man. It occurs in nature combined with calcium, and from this substance its compounds are prepared; most of them are solids. The fluoride of potassium is extremely soluble in water, but most other simple fluorides are somewhat insoluble.

On a general review of the possibilities connected with fluorine, it has seemed to me that its characteristic effects would be most generally available in horticulture if a silico-fluoride was employed, and of these the silico-fluoride of ammonium seemed to be the most advantageous. This substance is a solid, easy to produce in a state of purity, and readily dissolving in water, with which it forms a solution having a specific gravity of 1·101 when saturated. The effect of spraying plants infested with aphides and other pests with a very weak solution of the silico-fluoride of ammonium is not only immediate death to the insects, but when the substance is eventually washed off the plants into the earth it decomposes there, liberating ammonia very slowly at their roots; so that in addition to destroying the insects it is also valuable as a manure.

The silico-fluoride of ammonium is not at present known in commerce, but no doubt if a demand for it sprung up it could be manufactured and sold for about 20s. per cwt. Meanwhile I shall be glad to send any of your readers, who would like to experiment with it, a certain small quantity in time for next year s operations. If, however, they would prefer to make it themselves the following method of manufacture may be adopted. Equal quantities of hydrofluoric acid and rain water are treated with excess of fine silver sand; the mixture is made in a leaden vessel and stirred up occasionally for a month or so. At the end of that period it is filtered from the sand, almost neutralised with weak ammonia, and evaporated to dryness.—W. MILLS, 14, *Westbourne Road, Forest Hill, S.E.*

[Mr. Mills has informed us that he is not a manufacturer of anything he has mentioned, his only object being to find "something superior to Bordeaux mixture and other foreign empiricisms" for use in British gardens; and as he thinks it desirable that silico-fluoride of ammonium should be tried against different garden pests by different persons, he is willing to send samples for that purpose. Stamped directed envelopes should be enclosed with applications to the address given.

Relative to the home manufacture described, and fearing the possibility of danger in using hydrofluoric acid, we consulted an eminent agricultural chemist, who has devoted especial attention to the question of insecticides and germicides. He favours with the following observations on the subject generally:—

"The point raised with regard to *silico-fluorides* is interesting. The material suggested is not new, and some years ago I had intended to try it as a remedy for Hop mould, but found other and more suitable material. I find on reference that the use of silico-fluorides has been patented by W. Thompson, and that it has been taken up for application to calicoes, and for precipitating sewage. It has also been suggested as an antiseptic in surgical operations. Although I have not actually tested it, I believe the material suggested by your correspondent is possessed of no insecticidal value apart from its *acidity* and its consequent danger to the plant.

"As a fungicide, it may be of service, but it has certain grave practical drawbacks. It requires pure, soft water, and cannot be mixed with soap. Anyone who has used washes knows how essential 'lathering-power' is

to the successful working of a plant remedy - a plain solution beads off the mycelium growth or the bodies of the insects, and does no adequate execution.

"The potash salt is sold in commerce under the name 'Salufer,' as an antiseptic of similar application to boric acid and borates. Your readers should be warned *not* to make it by the method suggested. Hydrofluoric acid is frightful stuff for the most careful person to deal with, let alone a gardener. I know a man who lost two fingers through accidental contact with the acid.

"Silico-fluorides can be made very cheaply by roasting Derby spar, sand, and charcoal, and leading the gaseous product into water. It is then neutralised with the alkali or base, and evaporated down to dryness.

"With regard to the suggested inferiority of Bordeaux mixture, it should be noted that nothing has yet been found to equal it for dressing Vines, Potatoes, and other plants against fungoid attacks, and that owing to its adherence to the foliage it acts as a preventive for weeks, while the silico-fluoride, at best, could only destroy such fungi as it encountered at the time of application.

"My opinion is that silico-fluoride is not suitable for garden use, though perhaps a serviceable antiseptic for other purposes. I also advise you to warn gardeners that no reliable evidence is yet to hand that the stuff is either effective or non-injurious, two fundamental requirements of a garden remedy."

Mr. G. Abbey says he "knows fluoride of potassium to be a powerful fungicide and insecticide, very deliquescent and soluble in water, one part in 1000 parts water acting promptly and effectively on germs." He has "not tried silico-fluoride of ammonium $(NH_4)_2S_2F_8$, but thinks it ought to prove what Mr. Mills claims for it as a germicide and fertiliser." Mr. Abbey must try it. We are glad in being able to put both sides of the question before our readers, and leave those of them who desire to do so to test the product for themselves.]

CEANOTHUS.

The value of the various species and varieties of Ceanothus for the ornamentation of gardens can hardly be over-estimated. Some are first-rate shrubs for covering walls, others are useful for beds or groups, while a few grown in pots will be found very acceptable for conservatory work. When grown on a wall, two or three species are among the first of early spring shrubs to flower. Others flower during summer, whilst a few reserve their energies to make a grand display for fully three months during late summer and early autumn, a time when really good flowering shrubs become scarce. Most of the Ceanothus which are in general use are very showy. The flowers are produced with great freedom, and vary in colour from white to blue of various shades, and also tints of pink. The only objection that can be raised against the extended cultivation of these handsome shrubs is that several of the species are rather tender. The latter, however, can be grown against a wall, and by this means escape uninjured through all but the most severe winters.

The most useful for general cultivation are C. americanus, C. azureus, C. Arnoldi, C. divarieatus, C. papillosus, C. rigidus, and C. Veitchianus, together with several very good garden varieties of C. azureus. Of these the three former with the varieties of C. azureus are the most hardy. C. americanus is a native of the Eastern United States, where it is said to cover large tracts of land, and make a splendid sight when in flower. It makes a moderate sized bush a few feet high. The white flowers are upright and cymose, resembling very much a branched raceme, but individually are small. The flowering period is from the end of May to the end of July. In North Ameriea this plant is known as the "New Jersey Tea," the leaves having at times been used as a substitute for that beverage.

C. azureus (with its varieties) is possibly the most useful of the genus from a horticultural point of view. It has larger foliage than C. americanus, and also larger blooms. The flowers are light blue and produeed with great freedom. The varieties are chiefly of continental origin, and are for the most part very beautiful, and superior to the type. They vary greatly in colour, the majority being of various shades of blue. Possibly none is better than that known as C. Gloire de Versailles. The foliage of this is in shape similar to that of the parent, but larger, many of the leaves being 4 inches or more in length by 2 in width. The growth is stronger than the type, and the infloreseences are correspondingly large, many being 6 or more inches in length. The flowers are bright blue. It commences to flower early in June, and continues until frost stops the growth in autumn.

Several of the other varieties have equally good flowers and strong growths. C. Arnoldi is of a pinkish hue and is very free blooming during late summer and early autumn. For this section, especially the varieties of C. azureus, it is advisable to put a good layer of dry leaves about the plants on the approach of severe weather; this will give them a much better chance of coming safely through the winter. In spring they should be pruned back fairly hard.

Those mentioned for growing on walls are quite distinct from those recommended for the open, and also from each other. C. rigidus is the earliest to flower, and possibly the richest coloured of all. In a mild spring the earlier flowers begin to open about the third week in March. The young growths are very stiff. The flowers are a dark, rich shade of blue, and are produced from almost every joint of the young wood, making the whole shoot a spike of blossoms. C. papillosus flowers a month or so later than C. rigidus. The flowers are light blue, and produeed in loose racemes. C. Veitchianus appears to be more tender than either of the others. The flowers are pale blue. It can be grown well in pots, and makes a good plant for the greenhouse.

C. divarieatus is the hardiest of those mentioned for walls, and can be grown in the open, but does not flower so well as when grown on a wall. It branches freely, these being thin and pendulous. The flowers are pale blue, and it is at its best about the middle of April.

A fairly rich, lightish loam is suitable for all mentioned, and with the exception of C. rigidus each may be rooted fairly well from cuttings. C. rigidus requires layering. It is as well to keep a set of plants in small pots of the tender kinds, so that they can be given proteetion in case very severe weather is experienced in the winter. All will stand moderate winters well; but by keeping plants under cover a stock is insured in case any of the plants are killed by a long spell of frost. Although they require a little more eare in winter than some other shrubs, the trouble is well repaid by their exceptional beauty when in flower.—W. D.

HINTS ON WATERING PLANTS.

I read with much interest "T. D.'s" capital article on potting, which appeared on page 298 of the Journal, and I feel constrained to offer a few remarks to supplement it, if I may be allowed to do so, on the watering of plants. I readily admit and agree with "T. D." that the judicious potting of plants is one of the most important operations we have to deal with, and in my opinion the proper watering of them should rank as another equally essential point in the successful cultivation of all kinds of plants in pots.

Observation more than justifies me in saying that a great number of our young gardeners do not realise the necessity for that close attention and watchfulness which each individual plant under their charge requires, and I think we may place some portion of the injudicious watering of plants to want of thought and close observance.

Many times have I seen young men in charge of a collection of plants kick the pots when standing on the ground of such plants as Chrysanthemums, Azaleas, and others which are placed out of the houses for the summer months. Now I defy anyone to know by this dilatory test whether a plant is in need of water or not. I have always found the safest and most efficient method is to rap the pots smartly with the knuckles, or in the case of plants (especially valuable specimens) growing in houses to lift them bodily, and so judge by their weight. This system cannot be too strongly recommended in the cultivation of greenhouse plants of every description, for with few exceptions these are delieate rooted. To insure success the cultivators ought to keep in mind the conditions under which the various plants exist in their native country, and following a course of proeedure as nearly allied to Nature as circumstances will permit.

I well remember some years ago (in the absence of my chief) showing a gardener of note through the houses, when he observed a journeyman testing and watering plants by the system I have described above, and he made the following remark:—"Ah, young man, it is a pleasure to see that method of watering; it is a safe one, and one that now (unfortunately) is seldom praetised."

Every collection of plants ought to be closely looked over every day, and those that require it should be properly watered—*i.e.*, given sufficient to thoroughly moisten the whole of the soil in the pot. If the pots are too full of soil, as sometimes happens, the operation should be repeated until such times as the water has thoroughly permeated the whole mass. In the case of large plants, which may be standing on a slate slab stage, it is a good plan to elevate them on two pieces of well-seasoned wood of about 1½ inch in thickness. This simple plan has much to recommend it. First, it allows for a free circulation of air to pass under and about the pot, thereby keeping the roots in a healthy state; and second, when applying water the operator is apprised when the plant has had sufficient by the water passing through the drainage of the pot.

To conclude these few remarks I would urge all young gardeners to thoroughly digest "T. D.'s" article on the judicious draining and potting of all species of plants under their charge, after which they may with advantage read and follow the simple directions here laid down, always remembering that these are by far the most important operations connected with the cultivation of plants in pots.—Epacris.

Fantastic Summer Bedding.—The note on this subjeet by "A. D." on page 362 is to the point, and in warning British gardeners against this class of thing he is giving them good adviee. The pictures, or some of them, have not even the charm of novelty about them, and anything more ridiculous it would be difficult to conceive. That there is need for "A. D.'s" warning the following will show. I have just returned from a visit to a pretty old garden in the neighbourhood, where there are many grand old herbaceous plants and shrubs, some pretty bits of underwood, and other interesting features. The gardener stopped at a pretty part of a hardy fernery, from which the lawn sloped away to a piece of ornamental water. "I have planted this piece of turf with Snowdrops," he said. "Oh, indeed; they are very pretty I should say in spring." Then it came out that they had been planted to form the initials of the proprietor and the name of the plaee. And this in, perhaps, the pleasantest bit of the whole garden. What the proprietor had to say about the arrangement did not transpire, but tastes differ, and possibly he approves of it.—H. R. R.

COMBE ABBEY.

WARWICKSHIRE is rich in memories of bygone days; its people are proud to have produced that splendid genius the "Bard of Avon," whose memory the whole world delights to honour; they are proud, too, of the grand old castles, abbeys and monasteries with which their verdant county is richly endowed. Combe Abbey—the seat of the Earl of Craven—is one of the most extensive among them; it covers an enormous area, and the following particulars concerning it I glean from "Kelly's Directory:"—"Combe Abbey is situated two miles north from Brandon Station on the London and North-Western Railway, was erected on the foundation of the first monastery of the Cistercian order settled in this county, in the reign of King Stephen, by a grant to the Abbot of Waverley, in Surrey, by whose monks, therefore, this religious house was established A.D. 1150. In 1616 it came into the possession of Sir W. Craven, who was Lord Mayor of London in 1611, from whom it is descended to its present noble owner. In 1864 the work of complete restoration, or more correctly, a rebuilding of the Abbey, was begun, the Norman style of architecture being maintained at the base, changing in the upper stories to that of the thirteenth century. The gardens projected by William, second Earl of Craven, were very extensive, occupying an area of upwards of 40 acres, and were laid out by Mr. W. Miller, the well-known head gardener and sub-agent." To these gardens I lately paid a visit in the company of a horticultural friend, and the following briet notes are intended to convey a few of the impressions formed during a pleasant — but far too short—September afternoon.

After leaving the main road from Brandon Station we began to traverse a drive which led straight as an arrow up to the quaint old Abbey. This drive must be well nigh two miles in length. At its beginning a shady bower is formed for some distance by a stretch of woodland on each side; further on the view widens into an open expanse of park, which extends to a great distance in some directions and narrows down considerably in others. The drive through this park is bordered by lines of trees; some of them are gnarled old giants which have withstood the storms of ages, others are young, having been planted to fill up gaps. When some distance from the Abbey we diverge to the right, pass lawns, shrubberies, and well-trimmed Yew hedges, till the kitchen gardens are reached, where we find Mr. Miller ready to welcome us beside his pleasant home.

No time is lost before we begin the work of inspection, for it is apparent at a glance that the gardens, like the Abbey, are very extensive. In front of Mr. Miller's house the kitchen garden and glass structures are situated. The former is a model of what a good kitchen garden should be, for the situation is open, the walls substantially built, and the walks well arranged, one wide one running through the entire length and a water tank forming the centre. Four acres are thus enclosed, but many vegetables are also grown in other quarters. The ground is in all directions closely cropped and in a clean condition. We noticed splendid crops of Celery, Spinach, Turnips, Lettuce, and Cauliflower advancing. There should certainly be no lack of these to satisfy all parties in due season. The principal range of fruit houses, about 380 feet in length, is built against a wall, which, instead of being due south, is slightly inclined to the east, a situation which Mr. Miller favours, as he believes in the early morning sunshine and a long afternoon for syringing and watering, after the full force of the sun has left the houses. After entering these houses it does not take long to discover that Mr. Miller is a fruit grower *par excellence*, for where the crops have already been gathered we find healthy Vines, with hard nut-brown wood, or Peach trees with clean foliage, thinly disposed shoots, and shapely form. The back wall of the whole of this range is covered with such useful plants as Oranges, Lemons, Passiflora edulis, Monstera deliciosa, Camellias, and several uncommon plants, which supply either fruit or flowers.

After passing through several compartments, from which the crops had been removed, we came upon a fine house of late Grapes, in it Lady Downe's, Alicante, and Gros Colman were in strong force—in fact, it is not often that the first-named variety is seen in such good form, as the bunches were large, shapely, and beautifully coloured. Passing onward we entered another house in which the Grapes were ripe. Our guide walked quietly forward, but said not a word. I looked at the grand bunches hanging on the Vines, noted their perfect colour, and for a moment hesitated as to what variety it was. Closer inspection soon revealed that they were Black Hamburghs, yet so large in bunch and berry as to resemble Gros Colman; indeed, on this point hangs a tale, told in true Scotch fashion by Mr. Miller. Here it is. A visiting gardener on entering the house some time previous to our visit, exclaimed, "Ah! a fine lot of 'Colmans.'" No reply from his guide. He looked again and again, till gradually it dawned upon him that the foliage was not that of Gros Colman, but of Black Hamburgh. A general laugh followed, then the tasting of a few berries, and the visitor's appetite for dinner was completely spoiled. I have seen many houses of fine Grapes, but have not met with so grand a lot of this variety for a long time, and I question if a better one could be found in Britain just at the present moment.

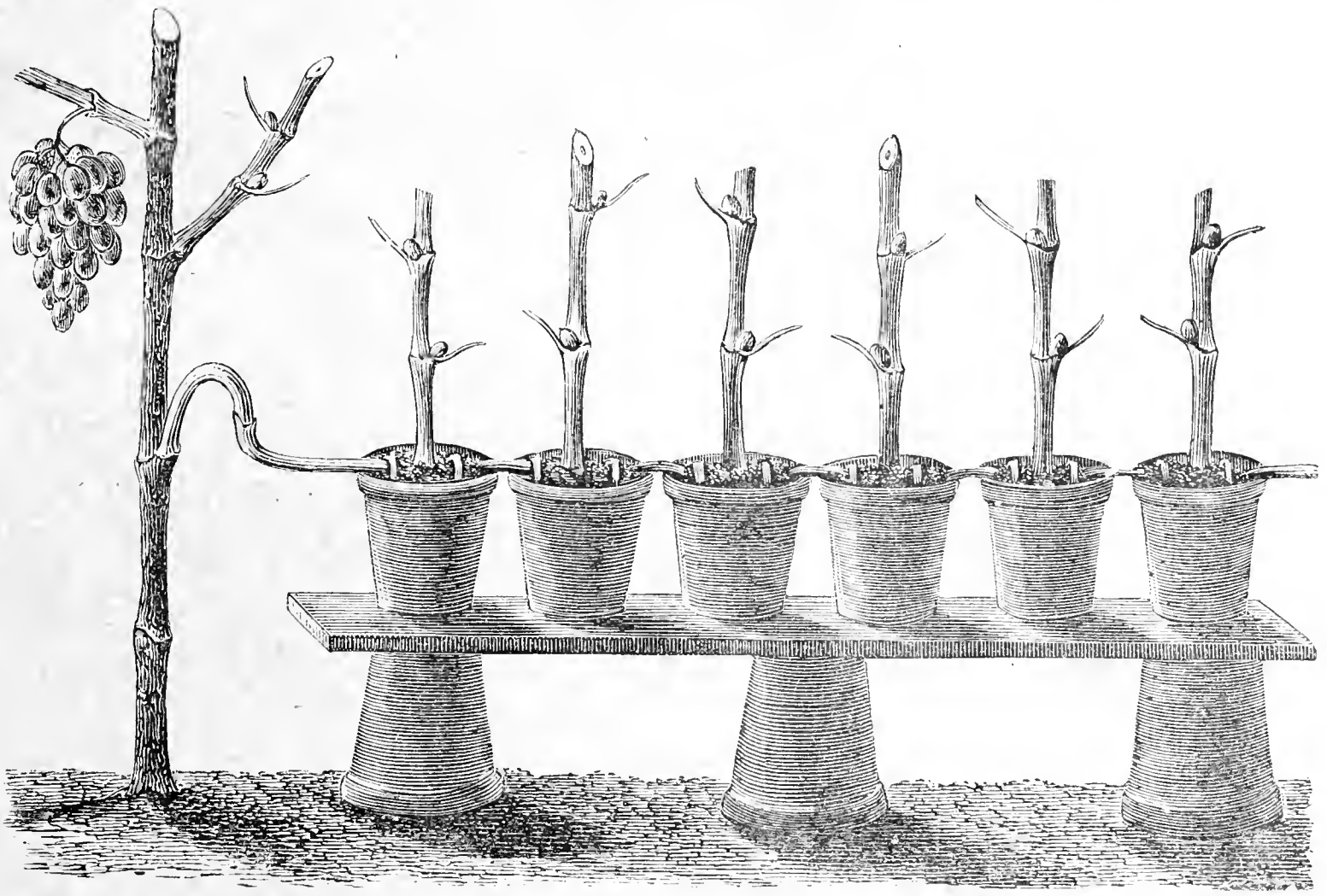

FIG. 59.—RAISING VINES AT COMBE ABBEY.

Mr. Miller pursues one practice which is very uncommon, although he has written about it years ago. It is this—the greater part of his Vine and Peach borders are covered with bricks or tiles. The advantages he claims for the practice are, that surface root-action is greatly increased, and that they are kept cool and healthy under the bricks. If these are removed in summer time white healthy roots may always be found in abundance. Another advantage which I can see in the plan is, that when plants are placed upon the borders there is always a good bottom to stand them on, and there is, therefore, no necessity to trample on wet soil after the borders have been watered. These bricks are removed in winter to give the border a dressing, the soil is then raked level, and the bricks simply placed closely together upon the surface. In some cases they are also again removed in April or May to give the borders a dressing of bonemeal or Thomson's Vine manure. Abundance of water right up to the time when the leaves fall is another cultural practice in which Mr. Miller has great faith.

Before leaving this part of my subject let me give a few remarks upon an "express system" of raising and fruiting Vines which has been successfully practised by the intelligent gardener-manager at Combe. I noticed several young Vines in 7 or 8-inch pots, each carrying a bunch of well-coloured Grapes. An inquiry elicited the fact that they were only about seven or eight months old, having been grown in the following way. A strong young rod along the front of one of the houses was selected for operating upon. Under this a strong plank was placed, supporting pots filled with good loam. The Vines were then notched under the buds, covered with moss, and pegged firmly into the soil (fig. 59). Roots were formed so quickly that each young Vine was severed from the parent cane six weeks from the date of pegging down. From that time they grew on uncheeked, pushing, as I have previously pointed out, strong canes and ripe Grapes.

I must say a few words upon the fine vigorous Peach trees growing in two old upright houses. These trees show to anyone that Mr. Miller knows the value of keeping shoots thinly disposed and free from insects. The style of training adopted is in most instances the "Seymour" one, but along the front of the house a novelty in the way of horizontally trained Peach trees may be seen, the system answering here as well as the usual method. It is, in fact, another illustration of the well-known truth that successful fruit culture is not a matter of following a particular style of training but of attending to all the details of culture in an intelligent manner. Strawberry plants in pots having plump crowns, such as the forcer delights in, occupied a sunny position in the open air, and I was pleased to see that grand old variety, Auguste Nicaise, among them. The plant houses are very numerous—in fact, there is quite a little town of glass at Combe; but there is yet so much to write about that I shall touch lightly upon them. The stoves are filled with a good assortment of plants of a useful size for decorative purposes, and I noticed some strong Bananas with huge bunches of fruit.

A very conveniently arranged fernery, with Orchids on the side stage, showed the latter plants are now being taken in hand, and I doubt not the collection will speedily increase in size. Several plants of those two fine early flowering Chrysanthemums, Mrs. Hawkins and Madame Desgrange, displayed their charms in a long lean-to structure, and useful they were for supplying cut flowers. Other houses were filled with Roses, Camellias, Azaleas, Callas, and some were being fitted up for the reception of bedding plants. Onward we press again, through the kitchen garden toward the mansion; but stop, let us look one moment at these long beds of Violet Marie Louise, grand indeed, having hosts of flowers fully developed, and showing great promise for a succession of fine blooms during the winter months.

We reach the Abbey, ascend the grand staircase, and look out of the windows on a lovely scene beneath and beyond. Below us a terrace runs round the mansion, grassy slopes are formed from this to the level stretch of turf in front, enlivened by flower beds worked out in a beautiful scroll design. Still further ahead is a magnificent piece of water, 90 acres in extent, bounded on one side by grassy banks, on the other by the park, while in the distance are acres of bog, with a luxuriant growth of Reeds. It will thus be seen that from the windows of the Abbey one looks down upon a true garden scene, in which bright colour, green grass, and water each play a special part; then, as the eye wanders in the distance, a view of wild grandeur is caught, the combination being one not often met with, and therefore characteristic of the place.

The flower garden immediately beneath the windows, from which the above view is obtained, is deserving of more than a passing notice, as it is of quite an original design, and was laid out by Mr. Miller during the spring of the present year. A straight gravel walk runs through the centre; on each side is a level piece of turf, oblong in shape. In this turf a scroll forming one continuous design is cut out, the turf on each side of the central walk being treated in exactly the same way. When well planted, as in this case, with suitable flowering plants, the effect produced is novel, striking and beautiful.

Hours might be pleasantly spent in wandering about the delightful pleasure grounds of this old English home, where stretches of grass and winding walks lead to pretty bits of garden scenery, which show plainly that the master hand laid out the grounds, had the knowledge and instinct of a true landscape gardener. Many choice Coniferæ have also been freely and well planted, with the result that to-day many magnificent specimens may be seen at Combe. Noteworthy among them are large and perfectly shaped ones of Picea pinsapo and P. pinsapo glauca. Isolated specimens and lines of Cupressus Lawsoniana are to be seen in abundance. In fact the whole place abounds in vigorous examples of ornamental trees.

The above are a few brief notes about a fine and well managed garden, the conduct of which has been in the hands of Mr. W. Miller for thirty-six years. He went to Combe at a time when it practically possessed no garden, and during his term of service has laid out the whole of the grounds and kitchen gardens, built houses, furnished them with plants, splendid Vines and fruitful trees. A man who does such things as these helps to raise the status of gardeners, adds to the prosperity and progress of horticulture, and is therefore deserving of recognition when honours to horticulturists are again passed round. Fortunately the present Lord and Lady Craven are young, and as they gradually settle down in their Warwickshire home, will perhaps add new features to their fine gardens, especially as they have the right man in the right place to carry them out. In conclusion I beg to tender, on behalf of my companion and myself, our heartiest thanks to Mr. and Mrs. Miller for the kind hospitality extended to us at the time of our visit.—H. D.

DENDROMECON RIGIDUM.—Mr. E. D. Sturtevant writes to the "Garden and Forest" from Los Angeles, California, with reference to this plant, which in California is considered one of the finest native shrubs. The flowers are of the brightest pure yellow colour, about 2 inches across, and produced for a long period. The foliage is a peculiar greyish green, but the flowers are so beautiful that this may well be overlooked. Unfortunately, it is difficult to transplant; but if successfully moved it grows well in gardens there.

FRUITS AND FLOWERS AT LANGLEY.

TRAVELLERS on our great railway systems, who leave the metropolis on pleasure or business bent in their millions, have much for which to thank our nurserymen. These have in many instances established themselves by the railway sides, and thus provide floral and arboricultural treats, the parallels of which are not to be found elsewhere. "They have done it," some may say, "with a view to advertising themselves." True, but it will be acknowledged that only a small per-centage of the travelling public is a purchasing public, and the remaining vast majority see the displays and appreciate them as they pass by. Other firms advertise their cure-alls or wash-alls by immense boards, which, however useful, are by no means ornamental. The beautiful flowers and the shapely shrubs and trees adorn our already charming English landscapes, but the boards do the exact reverse, so that though both have the same object, the one is advantageous, while the other is an eyesore and a nuisance.

The journey that more especially called forth the above remarks was made from Paddington to the West of England in August, when the exceptional beauty of Messrs. J. Veitch & Sons', Ltd., Langley Nursery, caused the determination to pay an early visit to this land of fruit and of flowers. For going on to two decades this nursery can be remembered by the writer, and each year it has been passed at least once at some period or the other. Never, however, has the spectacle been a more glorious one than this. Each bed has been a picture in itself, and the whole has been appreciated by hundreds of thousands of people. There were flowers of all colours and shapes, plants of varying heights and habits, with hundreds, nay, thousands of fruit trees to be seen from the windows of the, for the moment, too rapidly running train. After thus generalising we must particularise for a little in order that Journal readers who have not been on the Great Western this year may see Veitch's by proxy, which, it is hoped, will be better than not seeing it at all.

GOOSEBERRIES AND CURRANTS.

Most visitors to a fruit nursery when penning their description of its contents commence with the Apples and Pears, passing thence to the smaller fruits. In this instance the order will be reversed, so that the notes may claim some atom of originality in their sequence, if in nothing else. At Langley all forms of training Gooseberries are adopted save one. There are cordons, single, double, and five-stemmed, fan and cup-shaped bushes, standards on 9-inch or 12-inch stems, but the old-fashioned stool bush was conspicuous by its absence. Asked why this was the case, our conductor stated that there was no demand for them nowadays. "Growers," he added, "recognised the distinct advantages of plants on straight, clean trunks, and will have no others from us." The thousands so grown are as perfect specimens as anyone need wish to have. As proof of the care taken in removing the eyes from the part below the soil it may be mentioned that in no single instance was a sucker growth observed.

For fruit-bearing properties, perhaps, the shape of tree which may be termed the five-stemmed cordon must have the place of honour for bulk of crop. But for size of individual fruits and quality commend us to the single-stemmed cordon, which appears to be unrivalled. The other forms of training the bushes undoubtedly give splendid returns for the space occupied, and if the cup-shaped ones are a trifle formal they are nevertheless very handsome when roped with fruits. For many positions in gardens they are well adapted, and would look considerably better than an ordinary bush. In one respect the several forms were alike, and that was in the splendid growth and cleanliness. Such wood and foliage would satisfy the most hypercritical of mortals. "What," we hinted, "was the secret of such results?" With promptitude came the reply, "Simply good cultivation." It may be added, parenthetically, that the "good cultivation" included the best stable manure procurable.

From the spiny Gooseberries (there were no spineless ones to be seen) an adjournment was made to the Red and White Currants. Again were found some half-dozen forms of training, rendering it a most easy matter to choose a shape for any conceivable position where a Currant will grow. Haunters of the London Scottish Drill Hall on show days will remember these with the Gooseberries that the firm has staged so splendidly from its Buckinghamshire emporium. The attention devoted to the Reds and Whites is equalled by that given to the Blacks, but the training of the latter is, as may be imagined, much more simple. No writer would have the temerity to commence naming the varieties of the two fruits that have been mentioned. Let it suffice to say that probably every known variety is there to be found, though not in equal numbers. Of one there will be thousands, and possibly of others dozens would easily cover the stock that is grown. Both Gooseberries and Currants have cropped splendidly in these nurseries this year.

STRAWBERRIES.

These, the pigmies, so far as height is concerned, of the fruit world must not be omitted, or the opportunity of referring in laudatory terms to the grand Veitch's Perfection would be lost. If anyone present on a certain occasion at the Drill Hall had a lingering doubt as to the quality of this variety being of the best, it must have been rudely dispelled when he saw the avidity with which the best of judges disposed of several pounds of fruits that had been sent for testing. The writer knew the lusciousness of it, and though it is one of his principles to be "in" on such an occasion, he was hopelessly "out" on this one, and, moreover, has never ceased to regret it. It must rank with the very best, and does so with those who have grown it, for in addition to

the desirable attribute, it is a splendid cropper and of excellent constitution. The plants of this and many others are in the best of condition, and give abundant promise of producing heavy crops next season. In the performanee of their duty, too, it is perhaps superfluous to say the many thousands will be expected to produee several thousands more, and one may feel safe in saying that they will do so.

Plums and Cherries.

It is a novelty to go to Langley in September and not be able to find a few Plums with which to refresh the thirsty scribbler. But this was exactly the state of affairs on this oeeasion, for almost without exception the whole of the fruits were knocked off by the Jubilee hailstorm. The trees of these two delicious stone fruits were in excellent condition, and the standards here, with the trained trees yonder, were models of what trees ought to be. Straight and clean was the growth on all of them, and it is probable that next season the trees whieh are fruited yearly will render a good aecount of themselves, and thus make up for the defieieney of this. The foliage was perfectly clean, as visitations from inseet pests are always being sought for, so that if one appear it must pay promptly by death for its rashness; thus they never get a firm hold, and as a consequenee give eomparatively little trouble, whereas when once they become established it is no easy matter to dislodge them.

Apples and Pears.

These, in combination, oecupy a very large area, and whichever way one turns one is eonfronted by Apples or Pears in some shape or another. They may be bushes, espaliers, pyramids, standards, or some other shape, but there they are in thousands. Miniature bush trees scarcely 4 feet in height produee handsome fruits, espeeially of some varieties, others not apparently taking kindly to this system of culture. This is the style of tree which is rapidly beeoming more and more popular, for it eommences to bear fruit in a very small state, and continues with comparatively little trouble in respeet of pruning over a very considerable time. Another advantage that weighs in its favour is the fact that it does not take up very much ground space. For affording fruits, however, over the very longest period, of course we have the standard either of Pear or Apple, but it is some time before these are bearing profitably. Then, too, they, by their great spread of branches, are unsuitable for cultures of limited area where it is desirable to get heavy crops of vegetables from the ground. Cropping can be donc beneath the trees, but the results are never entirely satisfactory, for obvious reasons.

The Langley standards, however, are amongst the best of their kind. The stems are clean and straight, with no wounds or blemishes on them, while the summits are crowned by a beautifully formed head. The most careful attention is devoted to the perfecting of all essential points, both in the formation of these and other shapes of trees, for the firm aets up to the old adage, which says, "If a thing is worth doing at all it is worth doing well." But good top growth is of comparatively little use unless there be a eorrespondingly good root growth to balance and support it. This is always kept in view, and every tree to be seen, whether large or small, may be expected to lift with numbers of those fibrous feeders which delight the heart of the fruit tree planter. Splendidly is the ground worked for all, and those that are, so to speak, getting on in years are moved annually, so as to insure the roots being close at home, and make the final transplantation as certain as anything can be. The crops of Apples and Pears have this season been light, but the trees have been benefited thereby, as may be readily seen in the fine wood that has been produced.

Trained Trees.

Beneath this simple heading we would include, as well as the fruits already named, Peaches, Nectarines, Apricots, and Cherries. All these are cultivated in the form of either espaliers, gridiron, candelabra, fan, or other shape, and both at Langley and at the firm's Fulham nurseries at Southfields they are magnifieent. The greatest care is exercised in the selection of the wood, and when that is chosen the training is done on the best possible lines. There is no "sweating" in the labour. The operator has to do his work well, no matter how long it takes, and if he is not equal to it then he is put on to other work that he is able to do properly. That the trees produce fruits might be proved to demonstration by making periodical visits during the season of bearing to both the nurseries named. No gross, sappy, over-luxuriant growths are utilised, but only those that will give the best results in all respects.

Amongst the Flowers.

Floriculture, as has been said, is a feature at Langley, and the collections of hardy flowers, including annuals, biennials, with shrubby and herbaceous perennials, are magnificent. The beds seen from the railway by no means represent the whole of the area under flower culture, for on the other side of the canal, with which the ground is divided, there are scores of beds equally well stocked and exceedingly beautiful. Then there is an admirably managed trial ground where the stocks of seeds are tested, so that the result produced by any seeds from Chelsea may be seen under identical conditions. To give individual reference to all the kinds grown in the beds would be a serious undertaking, and would involve the utilisation of several columns of the *Journal of Horticulture*, so with one single exception no specific mention will be made. Scores can be recognised from the train, and the beauty of the whole will be admitted by everyone.

Michaelmas Daisies.

Taking two things into consideration—namely, the growing popularity of these plants and the completeness of the Veitchian collection, it will be permissible to give these a special paragraph. There have flowered this season seventy-two varieties, but many of these not being worthy of specific names the number is being very largely reduced. Only those of deeided merit are to be retained, and it cannot be doubted that the deeision is a wise one from all points of view. Large numbers were flowering when this visit was paid, and the names here given may be aceepted as being some of the best, both as regards habit and floriferousness. Half a seore only were ehosen, and comprised acris, amellus bessarabieus, candida, longifolius formosus, F. W. Burbidge, Herveyi, Riehard Parker, densus, eordifolius, and formosissimus. Others equal these no doubt, but few or none are better.—Visitor.

IRIS BAKERIANA.

There are some growers of alpine flowers who do not care to admit flowers of bulbous habit to their roek gardens. It is gratifying to see that this feeling is not generally found, and is rapidly giving way to a keen appreeiation of the beauty of the flowers yielded by what are known, unscienti cally but broadly, as "bulbs." Among the host of desirable flowers belonging to these the dwarfer Irises yield to none in beauty, and these, again, give few more suitable speeies than the one under notice. I. Bakeriana is, in a word, a gem of the first water, and not unworthy of the great botanist who, among other things of highest value, has given us a most useful and convenient handbook of the genus to which it belongs.

I. Bakeriana is a native of Armenia, and is quite hardy in our climate, although it flowers so early that its blooms have sometimes to be proteeted from the inelemeney of the weather. It usually blooms before Iris reticulata and its varieties, and in the South opens early in February. The flowers have sky-blue standards, and the falls, which have the ground eolour white, are beautifully blotehed and spotted with dark violet-blue. It only grows about 6 inches high, and no more appropriate plaee can exist for it than a sunny nook among the ehoieer alpine flowers.

Those who wish to possess this eharming Iris should proeure it as early as possible and plant it about 3 inches deep in sandy peat or other light soil. In gardens subjeet to wireworm it will be found advisable to place a few pieces of Potato just under the surface of the soil near the plaee in which the eorm or bulb is planted, and to examine these occasionally, destroying any wireworms which may be seen.—Alpinus.

THE YOUNG GARDENERS' DOMAIN.

Figs under Glass.

Among dessert fruits found on our English tables a dish of well-grown Figs deservedly takes a prominent position, also on the exhibition table it carries great weight. I purpose now to give a short artiele on their cultivation. The first point to observe is thorough eleanliness, and as most of the leaves will have fallen when this appears in print, the time will be opportune to eommenee a thorough cleaning of the trees and their surroundings, the former by eareful scrubbing with a soft brush, using a strong solution of Gishurst compound, warm (insecticides are always more effective when used warm), and the structure by scrubbing well with soft-soap and petroleum dissolved in hot water.

Previous to cleansing, however, the trees will require to be pruned. Shoots of medium strength of the current season's growth should be left full length in sufficient number to be distributed over the trellis at an average distance of say 9 inches apart; this will allow of next year's bearing wood being laid in between them. I am speaking now of trees trained close to the glass in the same manner as Peach trees; therefore, if this last rule be observed, the trees will require to be shaded with a double thickness of herring nets, as partial shade is very necessary to the well-doing of Figs.

It has been proved that the most satisfactory results have been obtained from trees having a restricted root area (ours are growing in large boxes about 5 feet square). The best compost is a porous one with ample drainage below, such as a good turfy loam with a liberal admixture of lime rubble and $\frac{1}{4}$-inch bones pressed down firmly.

Provided everything is in readiness a start may be made to force the earliest house at Christmas, from which ripe fruits may be expected at the end of April. If at all dry give the roots a thorough watering with clear water, afterwards liquid manure. Figs should never be allowed to become dry at the roots; this, in my opinion, being one of the ehief causes of the first fruits falling off prematurely. It must be remembered that no sooner has a tree yielded one crop of fruit than its energies are being directed towards the formation of the next crop; therefore if the roots become dry, especially during autumn, the embryo fruits will certainly suffer.

A temperature of 50° at night, with a corresponding rise of 5° by day with fire heat and 10° with sun heat, will be sufficient for the first six weeks. Syringe the trees lightly on fine days, admit air cautiously, and close early, to bottle up all sun heat obtainable.—Youngster.

Culture of the Grape Vine.

(*Continued from page* 299.)

After planting, endeavour to obtain good growth by the maintenance of a moist atmosphere, oeeasional syringings to keep the young Vines clean, and careful ventilation. Do not resort to stopping practices, while as the season advances gradually admit more air, and reduce the atmospheric moisture until the canes go to rest. Keep the Vines as cool as possible during winter, the house being thrown open on all favourable occasions.

If the Vines in the first year after planting are intended for early forcing the house must be closed about the middle of January, allowing a

temperature of 40° to 45° by night. On the other hand, if the Grapes are intended for later use, the Vines may be allowed to break naturally without the aid of fire heat. Examine the border, and if dry afford a good supply of tepid water. As the buds begin to push, raise the temperature to 50°, 55° by night. Slightly syringe the canes twice a day, and as growth advanees raise the temperature to 60°, 65° by night. Be very careful in giving air, as a sudden rush will often cripple the tender young growths. Let this be governed by the outside conditions of the weather, admitting very little at first, with a gradual inerease, until the maximum which is thought safe is reaehed. Close the house early, endeavouring to keep a genial atmosphere, and the Vines free from insect pests. Do not stop any of the growths, neither leader nor laterals, as it must be borne in mind the more foliage our young Vines make the more roots we shall have. The laterals should be tied to the wires as growth advances, to avoid a mass, and to allow the sun to get at the wood as mueh as possible. See that the young Vines do not suffer from laek of water, but do not afford too much, or it may make the border sour. As the season advanees gradually harden the growth made, but do not on any aeeount remove any leaves. All the leaves having fallen, rest the Vines, allowing plenty of air day and night.

Some time before starting the house, in the seeond year, which should be one month earlier than in the first, the young canes must be cut off to within 2 feet of the wires, the laterals being pruned to a single eye, dressing the wounds with either knotting or styptic to prevent bleeding. The treatment this year will be very similar to last, only the laterals must be stopped at four or five leaves, and any bunehes whieh show should be pinched off.

The Vines ought now to be thoroughly established. In pruning during the third year, cut the cane to about 8 feet from the wire, and the side shoots to the first good eye. Make all clean by thoroughly washing the glass and woodwork of the house, and afford the Vines a dressing of Gishurst compound, used according to the direetions. Slightly fork the surface of the border, giving a top-dressing of good loam in whieh a little wood ashes and soot are mixed. Close the house about the middle of November with a temperature of 40° to 45°. Give the border a thorough watering with clear water, used at a temperature of 80°. We will now leave our young Vines to break, and endeavour to give the future cultivation in further articles.—SEMPER.

HARDY FRUIT GARDEN.

Lifting Fruit Trees.—Young trees planted in the course of recent years frequently develop a tendeney to grow too vigorously, making wood growth, and showing few signs of forming fruit buds. At first it is desirable to eneourage considerable freedom in the formation of wood, so that the trees may build up a regular and substantial framework of branches. After a certain stage such freedom of growth is undesirable. Should it continue and thus retard the fruiting condition being reaehed, a mild and judieious cheek may advisedly be resorted to. Such a eheek as lifting and replanting will probably accomplish the object sought for.

The present month is a suitable season to carry out the operation, ehoosing the smaller and more portable of the trees or bushes whieh require checking. Large and unwieldly examples are not suitable for this form of treatment owing to their size rendering them awkward to move about. Another objeetion is the larger extent of young wood and foliage present, whieh complete lifting of the roots might cause to suffer. As a eheek to such trees, root-pruning is the proper method.

Lifting and replanting young trees at the proper time may render root-pruning in subsequent years unneeessary, as in the former operation it is possible to carefully cut baek any strong deseending roots and regulate the rest in a spreading, horizontal direction. Lifting trees is adopted, not only as a cheek to exuberant growth, but to bring the roots nearer the surfaee where they have the benefit of pulverised and aërated soil, and are more easily fed and watered. The operation requires to be carried out quiekly. Fresh soil for plaeing among the roots should be at hand, and the roots, especially the delicate fibres, ought not to be exposed longer than neeessary to the drying influenees of air. In adding soil, either under or among the roots, compress it firmly. Cut smoothly all damaged or bruised ends of roots, spreading them out in a horizontal direetion to their full extent. Stake eaeh tree firmly, and mulch over the roots with short littery manure.

Root-pruning Fruit Trees.—The fruitfulness of most hardy fruits largely depends on the character of the roots. Strong roots strike deeply, and, becoming stronger from the excess of moisture available, cause the stems and branches to increase in size more rapidly than is desirable. A rieh, loose, deep root-run favonrs the descent of roots into the subsoil. A firm, but fairly rich rooting medium induces roots to spread more and partake of a fibrous character, while the wood produced is of medium strength, having a tendency to form both wood and fruit buds in due proportion.

Trees Requiring Root-pruning.—An unfruitful condition from over-luxurianee is the principal indication that the roots should be checked. Root-pruning must be carried out with judgment, and only with trees that can produce their fibrous roots near the stem, and not at a distance away, as in the case of trees grafted on wildling stocks. Apples on the Paradise stoek, Cherries on the Mahaleb, and Pears on the Quince have the habit of producing their best roots near the stems, and continue to do so under favourable conditions of soil and position. Unsuitable treatment and other causes may encourage roots to extend beyond a desirable radius or to descend deeper than is beneficial.

Effects of Root-pruning.—When carried out judiciously and not too severely it affords a check, limiting the produetion of strong sappy wood, and concentrating the energy of the trees in the more liberal formation of fruit buds.

Approved Methods.—The method of carrying out root-pruning consists in first cutting a trench round trees 3 or 4 feet away from stems, severing all the roots found to a fair depth. Roots of slender size and fibrous may be preserved intact if possible. When the trench has been excavated to a sufficient depth, undermine the ball of roots. Cut off the strong, perpendicular roots with a clean transverse eut as a finish. The thick roots entering the trench from the side of ball must be carefully pruned with a cut slanting upward. No roots should be left without smoothly pruning the ends, or the principal object of root-pruning—the emission and multiplication of fibrous roots—will be frustrated. Roots left in their damaged state by the rough severanee of the spade cannot properly heal and send forth new rootlets, but instead they die back.

When root-pruning must necessarily be severe to effeet an improvement only treat half the roots at a time, leaving the remaining half for the next season.

In filling in the soil again round the roots add a little fresh compost to the old material and compress the whole firmly. A mulch of littery manure spread on the surfaee over the roots will be of service.

FRUIT FORCING.

Cucumbers.—The autumn fruiters being in full bearing must not be overcropped, but the plants will bear enormously if well supplied with nourishment. Cut the fruit directly it becomes fit for use, also remove tendrils, male blossoms, and an excess of fruit blossoms or deformed fruits. Supply a little fresh loam to the surface of the beds as often as the roots appear, and let it be warmed through before using. Examine the plants at least once a week for the removal of bad leaves, and for stopping and cutting away the superfluous growths. Sweetened horse droppings sprinkled on the beds occasionally act as a gentle excitant to the roots, supply nourishment to the soil, and ammonia to the atmosphere. Spare no effort to keep the foliage clean and healthy, and do not permit accumulations of dirt on the glass.

Allow the winter fruiters to extend well up the trellis before stopping them; train the shoots right and left at about 1 foot distance apart, crowding being fatal to well-developed foliage, and the sturdier the plants are grown the better will they be able to withstand the trying ordeal of continued dull or prolonged severe weather. Earth the roots as they protrude from the hillocks or ridges, supply water as required, not less in temperature than that of the bed, being careful not to overwater, or allow the plants to laek needful supplies of that element and liquid manure, or surfaee dressings of fertilisers washed in. Maintain a night temperature of 65° to 70 in mild weather, 60° to 65° when the nights are cold, 70 to 75° by day artificially, advancing to 80°, 85°, or 90° with sun heat. Admit a little air at the top of the house whenever the weather is favourable, but avoid cold currents; indeed it must be done without lowering the temperature or drying the air too much, and lose no opportunity of closing early in the afternoon on days when a little ventilation has been given in the early part of the day. On dull days little moisture will be required, but on very fine days the plants may be lightly dewed, and the floors and walls damped in the morning and afternoon, also when much fire heat is used in the evening.

Figs.—*Early Forced Trees in Pots.*—Trees that are to be started gently about the middle of November to afford a supply of ripe fruit at the close of April or early in May, will now need to have the wood brushed over, using petroleum softsoap, 4 ozs. to a gallon of water, applying the solution with a brush at a temperature of 120° to 140°, and reaching every part, being careful not to rub off the embryonic Figs, or to injure the shoots, as those of the current year are very brittle. If trees have to be purchased, select those with single stems, and such as have not been hard second cropped, thoroughly ripe in the wood, and having Fig buds in evidence of cropping. The large fruits will not come to anything, it is the small rounded fruit or buds that give the first crop. The trees may be potted if they require a shift, but let it be small; in fact it is wisest to merely cut off the drainage portion of the ball, loosen the soil at the sides, and remove the loose surface soil, shortening any straggling roots, and return to the same size of pot, or such as will admit of a little fresh soil under, around, and over the ball, all pressed as firmly as possible. Figs like a calcareous soil, say three parts yellow fibrous loam, one part old mortar rubbish, one part road scrapings, and one part stable manure, with a 9-inch potful of quarter-inch bones to 3 bushels of the compost, and a similar proportion of charcoal, all well mixed. Suitable varieties for early forcing are St. John's, Early Violet, Pingo de Mel, and Brown Turkey.

Early Forced Planted-out Trees.—Those planted in borders and intended to afford ripe fruit at the end of May or early in June, they being started at the new year, must now be untied from the trellis and pruned. Trees restricted at the roots to firm small borders will, from their short-jointed and sturdy growths, require little more in the shape of pruning than thinning-out the shoots where too crowded, and cutting away the

parts which have reached the extremities of the trellis, and become bare of fruitful wood. Those not having the roots restricted will require hard pruning at the upper part of the trellis, allowing room for the growth of the successional branches; but severe pruning only induces stronger and less fruitful growths. Such trees should be lifted, and have the roots confined to narrower well-drained borders of firm soil. Remove the surface soil down to the roots, pick out the old soil from amongst them carefully, and supply a top-dressing of fresh loam, with some old mortar rubbish added and intermixed. Ventilate fully at all times, except when frost prevails, and at such times heat should only be used to exclude it, though the trees will not take any harm unless the weather is very severe.

Succession Houses.—When the leaves have fallen prune the trees and well wash them with a soapy solution, using a brush, which will do much to dislodge the insects, and after the woodwork and walls have been scalded with hot water, keeping it off the trees, the latter may be dressed with an insecticide and the walls limewashed. Complete any root-pruning, lifting and laying the roots in fresh compost. Fig trees with the roots restricted are more manageable and fruitful than those with an unlimited rooting area, therefore lift and root-prune any unfruitful trees, and restrict the roots to moderate sized borders, making the soil firm, and employing good loam with a sixth of old mortar rubbish and a similar amount of road scrapings, good drainage being afforded.

Late House.—The trees should have the wood cut out that has borne fruit and is no longer required, and any trees having a tendency to cast their fruit through over-luxuriance should be lifted and have the borders lessened so as to restrict the roots. When the leaves fall the trees must be unloosened from the trellis, and being tied together they should be made safe against frost by placing a little hay or straw amongst them and covering them with the latter or mats, for trees in cool houses suffer nearly as much from frost as those against walls outdoors. The roots near the collar are better with a slight protection of dry material.

Peaches and Nectarines.—*Early Forced Trees.*—Where the supply of fruit in late April or early in May is from trees of Stirling Castle and Royal George Peaches, Lord Napier and Stanwick Elruge Nectarines, forcing must commence in earnest at the beginning of December. The trees, therefore, must be got into proper order without further delay, not, however, putting on the roof-lights to make things comfortable, as they are better off until the time stated, and there are favourable opportunities for attending to the necessary work, though it is better done as soon as the trees become leafless.

Succession Houses.—When the leaves are all down, there not being any forcible means taken to secure that end until they part freely from the trees, unfasten the trees from the trellis, and prune them, also thoroughly cleanse the house, washing the trees with soapy water and following with an insecticide, secure them to the trellis, leaving room for the branches to swell, as tight tying is one of the most prolific sources of gumming. Clear away the loose surface soil or mulching, pick some of the old soil from amongst the roots and supply fresh rather strong loam. If the roof-lights are not moveable, give a thorough supply of water to the inside borders, and do not allow them to become dry during the resting season, ventilating fully. It is better, however, to remove the roof-lights, and let the rain cleanse and refresh the trees, also moisten and enrich the soil through to the drainage. Attend to any lifting, or the introduction of fresh trees, as this work and root-pruning should be performed before the leaves have dropped, yet the wood ripe and the buds plumped. Trees for planting in houses are best two or three years trained to walls, and, lifted in the preceding year, they transplant with an abundance of fibres, and can be forced very well the first year if not started until January, not brought on too rapidly, and not overcropped. Trees, however, that have been grown under glass have the wood better ripened, and are more suitable for early forcing. If young trees must be planted, select such as have no trace of gum, but are clean in growth, not very strong in the wood, shapely, not over-furnished with branches. The sooner they are planted after they are in a fit condition the better.

Late Houses.—Cut away the non-extension wood that has borne fruit, as well as other growths not required, as this lets daylight reach those that are left, and nothing is so prejudicial as too much wood in late houses. Any trees in an unsatisfactory condition should be lifted as soon as the leaves commence falling, laying the roots in fresh, firm, sound material.

PLANT HOUSES.

Allamandas.—These will continue to flower for some weeks longer, provided they are liberally supplied with stimulants. Plants grown in pots will be crowded with roots, and a dressing of decayed manure on the surface will help them to develop their flowers; in addition to liquid manure frequently, artificials may be applied to the surface. If the plants are not well supplied with food the flowers will be small and only poorly developed. Growths that have done flowering should be thinned out, so that the energy of the plants may be devoted to the development of the flower buds that are formed. Light will also be admitted to the occupants beneath and also to the flowers, which will be of a brighter colour.

Gesneras.—Be careful not to water these on their foliage or they will be browned and disfigured. At this period of the year until they come into flower they do best on a shelf fairly close to the glass, where a good heat and a fair amount of moisture is maintained. Give these plants clear soot water every time they need water. Be careful not to allow them to become dry; on the other hand they should not be kept wet.

Tydæas.—Those that are coming into flower may be removed to the stove proper, but they should have the driest position or the foliage will damp. The remaining portion of the stock may be given the treatment advised for Gesneras. Spring-flowering kinds of the Madame Heine type that do not make underground stems may have a temperature of about 50°. These do best standing on some moisture-holding material.

Crotons.—Plants that are needed for room decoration should be given slightly cooler treatment than the main stock of Crotons. When well hardened these plants last in such positions for a very much longer period of time; in fact, double the length of time than when removed from a close moist structure where a high temperature is maintained. Growth should now be complete, and no attempt must be made to force these plants to grow. Young leaves made at this season rarely colour, and if used in rooms before these are developed they invariably flag and frequently fall off.

Acalyphas.—Plants grown for winter decoration in rooms should not be kept too warm, or they will continue to grow and the young leaves flag when removed to cooler and more draughty quarters. These plants should occupy an intermediate structure where air can be given daily. This not only prevents further growth but hardens the plants so that they bear room decoration fairly well for a time without losing their foliage. For the conservatory in summer these plants will in future replace Coleus altogether. When properly grown for this purpose they stand well and are much more effective, being choicer in appearance than Coleus. Plants that have become shabby may be cut down and placed in heat to break. Keep them on the dry side at first or the roots will perish.

Poinsettias.—The earliest plants will have commenced to show their bracts, and these may have a temperature of 65°. The plants, if strong and well grown, will develop large bracts in this temperature. Keep them as near the glass as possible; on this depends whether the bracts are brilliant in colour or the reverse. Feed with weak stimulants every time water is needed. Later plants should be kept at 60° with a little air daily until growth is completed, when the temperature may be raised. If kept too warm before the completion of growth the plants often start growing, and only poor bracts are produced.

Euphorbia jacquiniæflora.—Keep plants at 55° to 60° until they display their flower buds; if the growths have not been well ripened and are kept too warm they will start into growth instead of flowering. Once they do this all chance of their blooming satisfactorily is over. Do not overwater these plants, for they are very liable to go off at their roots if kept too wet. Justicia flavicoma, not yet showing flower, may have the same treatment. Plants that are showing flower may be brought into bloom in the temperature advised.

Celosias.—Plants that have been kept in a temperature of 55° to 60° to bring them into flower should be carefully and gradually hardened before they are placed in the conservatory. When forced in heat and removed direct to a lower temperature they are liable to damp off just above the soil. When care is taken to harden them they should be watered judiciously, and then they will last a long time.

THE BEE-KEEPER.

NOTES FROM THE HEATHER.

IN this county of broad acres there is a wide expanse of Heather, and within thirty miles of my apiary there are thousands of acres that in the season form a mass of bloom, a very small percentage of which is visited by the bees. Although bee-keeping has advanced by leaps and bounds during the past quarter of a century, it is an acknowledged fact that less honey is now obtained from the Heather than was formerly the case. As the honey obtained from this source is often preferred to any other, it would appear at first sight as if apiculture was declining in this country; but that such is not the case we have ample proof. What, then, is the reason that so few bee-keepers now send their bees to the moors so as to obtain a surplus from the Heather?

It is owing to the unfavourable weather usually experienced when the Heather is in bloom and the honey flow at its height. The past season has not been an exception, as from our own observations and reports to hand from bee-keepers who, after great expense and labour in taking their bees to the moors, pronounce the yield as nil. This is the more disappointing after the bright weather experienced in July and early in August. Owing to the excessive heat the Heather was a few days earlier than usual in coming into bloom. Under these favourable conditions more bees than usual were sent, with the result as stated above. This was caused by a rapid change; high winds and a low temperature prevailed, the much-needed rain for all vegetation throughout the country came down in torrents, and with it the bee-keeper's hopes fell to zero.

The unfavourable weather, from a bee-keeper's point of view, continued until the early days of September, when there was a sudden change to bright sunshine again. Too late, however, for the bees to derive any benefit from the Heather. Such being the case, nothing remained but to bring the bees home again, and as the hoped-for profits from the Heather had all evaporated, the bees in most instances

had to be fed with syrup, and that freely, to help them to tide over the winter. Only in a few favoured spots has there been a surplus stored this season from the Heather. No wonder, then, that some bee-keepers are found who vow they will not take their bees to the Heather again. But as there have been some good yields in the past, so there doubtless will be again in the future.

Autumn Flowers.

Gardens are still gay with autumn flowers, many of which are of some benefit to the bees, and as the weather continues fine, with a fair amount of bright sunshine nearly every day, the bees are not slow to take advantage of it, and may be seen during the middle of the day returning home heavily laden with pollen. But from what source is it chiefly obtained at this season? Ivy, which has been in bloom for the past few weeks, and which yields a large amount of pollen, is the last tree to bloom in the autumn that is of benefit to the bees. In the neighbourhood of my apiary there are numerous old trees and walls that are covered with huge masses of this creeper, which are never pruned or otherwise interfered with, consequently they bloom profusely. At the present moment, whilst the sun is shining brightly, those trees that are situated in a sunny spot are alive with bees and wasps, whose merry hum may be heard before they are seen, reminding one of the Lime trees when in full bloom in July.

Mignonette is also much frequented by bees at all seasons. The early plants seeded rapidly owing to the dry weather, but at the present time large masses of Mignonette are simply perfection and much appreciated by the bees. Anemone japonica, and the Autumn Crocus, which grows wild in this district, are also useful for bees, and are much admired when grown in the garden.

Winter Passages.

Are winter passages necessary for the well-being of the bees? I answer in the negative. A few years ago they were recommended by many bee-keepers, and still are by some, but after experimenting with several colonies I came to the conclusion there was no benefit to be derived from them. Winter passages are simply holes cut in each comb so that the bees may pass from one to the other to obtain food in cold weather without having to pass round the ends or the bottoms of the frames, where they would be liable to become chilled. Bees, when left to themselves, often make provision for this by forming pop holes in several of the frames, which anyone may observe by examining the combs in a hive. If passages are really necessary it is better to lay a few laths on the top of the frames, as this will allow the bees to go from one comb to the other without any danger of becoming chilled. An extra covering must be placed on the top so as to make all secure.—An English Bee-keeper.

TO CORRESPONDENTS

*** All correspondence relating to editorial matters should, until further notice, be directed to "The Editor," **8, Rose Hill Road, Wandsworth, London, S.W.**, and **NOT** to Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Books (*F. W. P.*).—The translation of the majority of Latin horticultural expressions will be found at the end of the latest edition of "Johnson's Gardeners' Dictionary." If you have not this work you should purchase it, for it contains much valuable information. It may be procured from the *Journal of Horticulture* office, 171, Fleet Street, E.C. "Fruit Culture Under Glass," by D. Thomson, would probably suit you. It is published by Messrs. W. Blackwood & Sons, London and Edinburgh at less than half the price you state.

Diseased Chrysanthemum Leaves (*J. O. M.*).—The leaves are badly infested by Chrysanthemum leaf-rust fungus (Trichobasis or Uredo Artemisiæ, or an evolved form of it), which is described on page 381.

Training Peach Trees (*Mrs. M.*).—The main points to keep in mind are two. 1, To have the lower branches so far as may be practicable longer than those above them. 2, To dispose the branches evenly over the surface, and at distances so that the leaves of one branch do not overlap those of the other. If there are sufficient branches for this there need be no shortening; if too many, thin some of them out. One may be cut back here and there where there is much more space to be occupied than there are branches for covering it. Rank robber growths should not be allowed to form, but rubbed out or suppressed in the summer. Their character is apparent when quite young. Any of an excessively gross nature may be removed, and others not allowed to extend next year. The more uniform the strength of the branches the better, and these should be uniformly disposed with a foot of wall space between them, and even then many of the pushing young shoots will have to be taken out when they are an inch or less in length in the spring, or the trees will soon be much too crowded to be productive. If the lower branches are too weak training them as much above the horizontal position as can be easily done will have a tendency to strengthen them, while depressing those which are too strong will have a contrary effect, and by these methods something can be done towards effecting an even balance in the growths of a tree.

Iceland Poppies (*N. H. B.*).—The white, yellow, and terra-cotta forms of Iceland Poppies (Papaver nudicaule) all come true from seed, and are very easily grown. Autumn-raised plants would flower strongly next summer, but quite as good results attend the practice of sowing early in the year. The seedlings transplant badly, and we advise you, therefore, to sow the seed in small or 2½-inch pots, and transplant direct from these into the open border. Late in February is a good time to sow, and seeing that nearly every seed will germinate sow very thinly, place in gentle heat, and when the seedlings appear raise the pots well up to the glass. Directly the plants can be handled thin them out to about three or four in each pot, and still keep them near the glass. By the time the plants are beginning to spread over the sides of the pots they ought to be sufficiently hardened to admit of their being planted out where they are to flower. Very warm borders do not suit them, nor do they thrive well in an over-damp site. If located in mixed borders, notably those fringing garden walks, with fruit trees dotted along them, the time will soon come when abundance of self-sown seedlings will be always forthcoming. These Iceland Poppies will, as before stated, flower well during the same season they are planted, but bloom earlier and more profusely the second year, after which they are not nearly so serviceable. It will thus be seen that they can be treated either as annuals, biennials, or perennials, and are perhaps the most admired of all Poppies.

Pruning Young Fruit Trees (*Mrs. M.*).—Assuming that the trees were properly planted—namely, the ground broken up to a depth of at least 18 inches, and to a distance of 2 feet from the stems, the roots spread out with the soil between the layers, the uppermost not covered more than 4 inches deep, and the stems not sunk deeper than they were before the trees were taken up, free healthy growth may be expected next year, if the young branches are shortened more than half their length towards the end of the present month. Had they been cut back in July the young growths resulting would not have had time to mature, and the action of severe frost on them might have been followed by canker. Summer pruning does not consist in cutting back all the main branches of young trees, but in shortening side growths from the mains for preventing the great evil of overcrowding. With the same object it is often desirable to cut some of the main branches entirely out, if these are too numerous, or so cross each other as to make the interior of the tree resemble a thicket. This may be done in summer or now. The main branches of fruit trees should be far enough asunder for the sun to shine between them when the trees are in full leaf. For the purpose of obtaining a sufficient number of branches for forming a head for bearing, the few shoots of young trees are cut back, two growths usually resulting from each cut, so that a three-branched tree soon becomes six-branched, or six branches are increased to twelve—a generally sufficient number for bearing; and, as a rule, the less these are shortened the better; but it is most important that they be far enough apart, or the summer growths shortened to prevent the leaves of one branch meeting those of its neighbours. The main branches of bearing trees should be nearer 2 feet asunder than 18 inches. The peeling of the bark off the young branches of your trees that were not cut back after planting, leaving something like wounds, is due to the inability of the scanty leafage to manufacture sufficient organised matter for deposition and the healthy thickening of the stems. If a good free root run is provided for the trees they will make very different growth and leaves another year if the branches are well shortened this autumn, and in all probability the wounds will gradually heal over; but we should cut below the worst of them where practicable. As to "keeping the height of the trees down" permanently, this can only be done at the sacrifice of fruit; in fact, if all the branches made in summer after the heads of the trees are formed be cut back to near their base in winter you will never have crops of fruit worthy of the name. If the standard trees will be too tall for their positions, the better plan will be to plant them elsewhere at the end of this month, and procure dwarf trees of compact growing varieties for taking their places if you wish the site to be occupied with Apples, Pears, and Plums.

EDITORIAL NOTICE.—It is particularly desired that all communications, parcels, catalogues, and newspapers intended for the Editor, be sent direct to 8, Rose Hill Road, Wandsworth, S.W.

Late Pears and Gooseberries (*Inquirer*).—The letter is mislaid, but this reply will be recognised. Good Pears for following Doyenné du Comice are Marie Benoist and Nouvelle Fulvie, large; Josephine de Malines and Ollivier de Serres, medium sized and later. If, as we gather, you intend raising your own cordon Gooseberries, choose upright growers, and take particular care to cut clean out every bud from the part of each cutting that is to be inserted in the soil, also from the part that will be a few inches above it. It would no doubt be better to purchase well rooted plants. A foot apart is a good distance for planting, and they may be trained vertically. If the wall is low the cordons, when they reach the top, can be depressed if you like. It does not matter in which direction. If you slant them at first you will check their extension and force the issue of side growth unduly.

Lycium europæum (*G. C. P.*).—This shrub is a native of the South of Europe, but appears to have become naturalised in some parts of this country. Loudon in his "Encyclopædia of Trees and Shrubs" describes it as "valuable for covering naked walls, as it grows with extreme rapidity, and flowers and fruits freely in almost any soil or situation. Established plants in good soil will make shoots 10 or 12 feet in length in one season, and the plant when trained against a house or high wall will reach the height of 30 or 40 feet, as may be seen in some courts in Paris. Trained to a strong iron rod to the height of 20 or 30 feet, and then allowed to spread over an umbrella head, it would make a splendid bower. Its shoots would hang down to the ground and form a complete screen on every side, ornamented from top to bottom with ripe fruit, which is bright scarlet or yellow, and very showy; with unripe fruit, which is of a lurid purple; or with blossoms, which are purple and white.

Mushrooms on Bench (*T. Q.*).—The proper place for a Mushroom bed is under the stage, not on it, along which hot-water pipes run. These would dry the bed too much, cover them as you might. What Mushrooms enjoy is the mild, moist warmth, that is generated by steadily fermenting manure. With a board a foot wide, firmly fixed on the floor flush with the front of the stage, you would have an excellent enclosure for growing Mushrooms. If you collect and prepare manure as advised in *Mushrooms for the Million*, and when it is sweet, warm, and moist, beat it down firmly with a brick; thrust a couple of pointed sticks in it for withdrawing at intervals for testing the heat; insert good spawn at the right time, and three or four days afterwards spread sound, damp, loamy soil, 3 inches thick, on the surface, beating it down to 1 inch or so; cover with rather damp litter to prevent the evaporation of moisture from the bed, Mushrooms may be expected to grow in abundance. In grasping the sticks with the hand you may find the heat rise from day to day, and not until it has ceased rising and commenced falling must the spawn be inserted. A thermometer closely inserted 3 inches in the bed will indicate the warmth. When this falls below 90°, after it has risen above that point, the spawning may be safely done, but never with a rising thermometer. If by regulating the coverings you can maintain a temperature of about 70° in the bed for three weeks, good spawn will be sure to spread, provided the manure is in the right condition, by the retention of moisture, and Mushrooms will then be bound to follow in due time. One of the chief factors in success is found in keeping the beds uniformly moist without watering them, and this can be done.

Names of Fruits.—*Notice.*—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. *In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing.* The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. *They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state.* (*H. T. M.*).—1, Lord Derby; 2, Reinette Grise; 3, affected with fungus, possibly Cellini; 4, Norfolk Beefing; 5, not recognised; 6. Gravenstein. (*T. M. G.*).—1, Not known, probably local; 2, Warner's King; 3, New Hawthornden; 4, Cox's Orange Pippin; 5, King of the Pippins; 6, possibly an inferior seedling from No. 5. (*H. S.*).—1, Irish Peach; 2, not known, and we should think not worth growing; 3, Court of Wick. 4, Minchull Crab; 5, Winter Greening; 6, Greenup's Pippin. (*P. J. P.*). —The Pears were rotten. The Apple is probably a seedling from Cellini. (*J. B.*).—All the fruits were rotten.

Names of Plants.—We only undertake to name species of plants, not varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*C. C. U.*).—1, Abelia rupestris; 2, Swainsonia alba; 3, Ceanothus Gloire de Versailles; 4, Escallonia macrantha. (*B. W.*).—1, Aster amellus bessarabicus; 2, A. candidus; 3, unknown; 4, Helenium autumnale striatum. (*E. S. W.*).—Withered; possibly a Japanese Acer. (*A. W.*).—Specimen insufficient; send fertile frond.

TRADE CATALOGUES RECEIVED.

Bruant, Poitiers.—*Fruit and other Trees.*
G. Bunyard & Co., Maidstone.—*Fruit.*
H. Cannell & Sons, Swanley.—*Reference Book in Horticulture.*
Dicksons & Co., 1, Waterloo Place, Edinburgh.—*Fruit Trees.*
F. C. Heineman, Erfurt.—*Trade List of Specialities.*
Kelway & Son, Langport.—*Wholesale List of Gladioli.*
Laing & Mather, Kelso, N.B.—*Carnations.*
H. Merryweather, Southwell, Notts.—*Fruit Trees, Shrubs, and Roses.*
W. Rumsey, Joynings Nurseries, Waltham Cross.—*Roses and Fruit Trees.*
J. Turner, Wetherby, Yorks.—*Bulbs and Plants.*
R. Wallace & Co., Colchester.—*Hardy Bulbs and Plants.*
J. Walters, Mount Radford Nurseries, Exeter.—*Fruit Trees and Roses.*

COVENT GARDEN MARKET.—Oct. 20th.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	1 0	to 3 0	Grapes, lb....	0 8	to 2 0
Cobs	22 6	24 0	Lemons, case	11 0	14 0
Filberts, 100 lbs.	0 0	0 0	St. Michael's Pines, each	3 0	8 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, ½ sieve	0 0	0 0	Onions, bushel	3 6	4 0
Beet, Red, doz.	1 0	0 0	Parsley, doz. bnchs.... ...	2 0	3 0
Carrots, bunch	0 3	0 4	Parsnips, doz.	1 0	0 0
Cauliflowers, doz.	2 0	3 0	Potatoes, cwt.	2 0	4 0
Celery, bundle	1 0	0 0	Salsafy, bundle...	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Seakale, basket...	1 6	1 9
Cucumbers...	0 4	0 8	Scorzonera, bundle	1 6	0 0
Endive, doz.	1 3	1 6	Shallots, lb.	0 3	0 4
Herbs, bunch	0 3	0 0	Spinach, pad	0 0	0 0
Leeks, bunch	0 2	0 0	Sprouts, ½ sieve...	1 6	1 9
Lettuce, doz.	1 3	0 0	Tomatoes, lb.	0 4	0 0
Mushrooms, lb.	0 6	0 8	Turnips, bunch	0 3	0 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6 0	to 36 0	Ficus elastica, each... ...	1 0	to 7 0
Aspidistra, doz.	18 0	36 0	Foliage plants, var., each	1 0	5 0
Aspidistra, specimen ...	5 0	10 6	Heliotropes, doz.	3 0	5 0
Chrysanthemums, doz. ...	4 0	9 0	Lilium Harrisi, doz.... ...	12 0	18 0
,, ,, single plants	1 6	2 0	Lycopodiums, doz.	3 0	4 0
Coleus, doz.	2 6	4 0	Marguerite Daisy, doz. ...	4 0	9 0
Dracæna, var., doz.... ...	12 0	30 0	Mignonette, doz.	4 0	6 0
Dracæna viridis, doz. ...	9 0	18 0	Myrtles, doz.	6 0	9 0
Euonymus, var., doz. ...	6 0	18 0	Palms, in var., each... ...	1 0	15 0
Evergreeens, var., doz. ...	4 0	18 0	,, specimens	21 0	63 0
Ferns, var., doz.	4 0	18 0	Pelargoniums, scarlet, doz.	2 0	4 0
Ferns, small, 100	4 0	6 0			

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms ...	3 0	to 5 0	Lily of the Valley, 12 sprays	1 0	to 2 0
Asparagus Fern, bunch ...	1 0	2 6	Marguerites, doz. bnchs....	2 0	3 0
Asters, bunch	0 4	0 8	Maidenhair Fern, doz. bnchs.	4 0	8 0
Bouvardias, bunch	0 6	0 8	Mignonette, doz. bnchs. ...	2 0	4 0
Carnations, 12 blooms ...	1 0	3 0	Narciss, white (French) bunch	0 6	0 9
,, doz. bnchs. ...	4 0	9 0	Orchids, var., doz. blooms	1 6	12 0
Chrysanthemums, 12 bnchs.	4 0	6 0	Pelargoniums, doz. bnchs.	4 0	6 0
,, ,, 12 blooms	0 6	2 6	Pyrethrum, doz. bnchs. ...	1 6	4 0
Dahlias, doz. bnchs.... ...	2 6	6 0	Roses (indoor), doz.... ...	0 6	1 0
Eucharis, doz.	2 0	3 0	,, Tea, white, doz. ...	1 0	2 0
Gardenias, doz.	1 6	2 0	,, Yellow, doz. (Niels)	1 6	4 0
Geranium, scarlet, doz. bnchs.	4 0	6 0	,, Red, doz. blooms ...	0 9	1 0
Gladioli, doz. bnchs. ...	6 0	18 0	,, Safrano (English)doz.	1 0	2 0
Lilac (French), bunch ...	5 0	6 0	,, Pink, doz.	1 0	2 6
Lilium lancifolium, bnch.	1 6	2 0	,, outdoor, doz. bnchs.	3 0	6 0
Lilium laneifolium, short, per 12 blooms	1 0	1 6	Smilax, bunch	1 6	2 6
Lilium longiflorum, 12 blooms	4 0	6 0	Tuberoses, 12 blooms ...	0 3	0 4
			Violets, doz. bnchs.	1 6	2 0

AUTUMN MANURING.

At the first glance the question of the application of manure in autumn appears a very simple one. For one thing, very few farmers would dream of putting artificials on in autumn, and the average man would put his muck on lea for Wheat because he found a

convenient interval of leisure before harvest during which he could put the manure on the land. We are not going to argue that farmyard manure is not a good thing for the Wheat crop, but we think it may be used to better advantage than by spreading on the land and ploughing in for Wheat. If there is much herbage to plough in, the addition of a good dressing of muck ploughed in with it tends to make the seed-bed too light, and unless the season be very favourable for the roller, the wireworm has a splendid chance, and may do very serious damage.

We have seen manure put on after the Wheat has come up, and with very successful results. The manure on the surface appears to act as a protection from frost. Of course, it requires to be well spread and shaken out, so that the young Wheat can get its head out.

But with the advance in agricultural science we are becoming more and more convinced that, even with the price at 40s., the Wheat crop is not the one that benefits the most by an immediately previous application of farmyard manure, and would prefer to apply it in autumn, say any time before Christmas, to the young seeds, or, better still, to yearling seeds, if such are to be grazed again; for the pasture will be of so much more value and carry so much more stock, that the following crop, be it Wheat, Oats or Potatoes, will benefit quite as much, nay more, than it would from the direct application of the manure.

Though farmyard manure is more or less beneficial to all soils and all crops, it is not always the best thing to use, and though it contains phosphoric acid and potash it is sometimes necessary, where a soil through natural poverty or overcropping is very deficient in those constituents, to supply them in much larger quantities than would be possible or advisable in the form of muck.

Phosphate of lime can be bought at the cheapest rate in the form of basic slag, the next cheapest being superphosphate of lime; the latter costs about 2s. per unit of phosphate, whereas the basic slag costs only about half that price. The chief practical difference between the two is in the solubility of the phosphate—that is, the solubility in water. The phosphate in the form of basic slag is not readily soluble, and therefore not in a state to immediately benefit plants after application, but when applied to land which is of a sour or acid nature, and deficient in lime and phosphate, it is only a matter of time for the phosphates to become soluble and available as food for plant life.

If we consider, then, the great relative difference in the cost of superphosphate and basic slag, it is obvious that the latter must be the cheaper form to use, but only on one condition, and that is that it is put on the land and harrowed in before the end of the year. Thus there is plenty of time for it to become soluble before the growth of spring requires a supply of readily available phosphatic manure.

What we have said of basic slag may be said with equal force of kainit, which is the cheapest available form of potash, at any rate in an innocuous form. Muriate of potash is relatively as cheap, but the action of muriatic acid is—at least, we have found it so—injurious to plants, though it is in a readily available form. Sulphate of potash is good, but dearer than kainit per potash unit. So kainit seems to be the thing to use, but to reap the greatest benefit it should be applied in autumn. Light soils if heavily cropped are most liable to become poor in potash, and a sure sign of this being the state of things is weakness in the straw of corn crops. Strong soils are seldom deficient in potash, and the straw is generally stiff and bright in colour; but when you see a crop of Barley, about 30 inches in length, laid nearly flat, there must be something wrong, and that something is almost sure to be a shortage in the supply of potash.

Ammoniacal manures should not be put on in autumn unless for Wheat where the land is exceedingly poor, and then only in very small quantities, for double the quantity will be required in spring to keep the crop going.

For a stolen crop of Wheat—that is, one taken out of course, say corn after corn, with no farmyard manure available, we should sow the following mixture—250 lbs. kainit, 300 lbs. basic slag, and 56 lbs. sulphate of ammonia; mix the kainit and sulphate together and sow it, the slag being sown separately; 112 lbs. of nitrate of soda per acre in April will keep the crop growing, and if the land be worth cultivating it should be a good one.

For Barley or Oats miss out the sulphate in autumn, and sow 160 lbs. sulphate of ammonia with the seed in March. No nitrate of soda will then be required. Kainit and slag to be sown in autumn same as for Wheat.

For Turnips, again, we cannot see why slag applied in autumn should not be the best form of phosphate to use, though perhaps a little superphosphate at drilling time might be beneficial.

Professor Long says:—"As between slag and superphosphate, which have been again tested, slag is preferred from the point of view of cost. Nevertheless, it can scarcely be denied that experience teaches the value of mixed manures." Certainly! But a mixture of what? Our mixture for Turnips would be basic slag, applied in autumn with either farmyard manure before sowing, or a mixture of kainit 2 cwt. and nitrate of soda 1 cwt. per acre, sown broadcast and harrowed in before drilling the seed. The kainit might be sown in autumn, and better so if the farmer has quite decided to use it.

WORK ON THE HOME FARM.

We are progressing well with Potato lifting, and the continuance of fine weather is a great boon. The roots go together in fine dry condition, and it is so much easier work for the pickers, who are thus enabled to do more work. There is just a doubt as to some kinds being ready to store, as is shown by several ruffled skins, but fine weather is of such importance, and the season is getting so nearly over, that we shall go on; but at the same time take every precaution to prevent the tubers going wrong in the pie. We are leaving them without soil for three days, and then only soiling them three-fourths of the way up the side, so as to leave a wide outlet for the steam or heat to escape.

Some people are lifting Mangold, and they will soon be ready to store. We like ours to get fairly ripe, and then we put them in heaps 12 feet wide, and holding three cartloads to the yard run; they will keep well in such a heap, and take less covering than if the heaps are made smaller. Some people store Mangold roots, tops, and all, but they bulk up more, and take more covering; and the trimmed bulbs keep equally well, if not better—*i.e.*, with the tops cut off—of course we do not touch the roots. Swedes, on the other hand, pied in small heaps may have the tops left on, and need only to be covered with soil. Mid-November will be soon enough to store Swedes.

Mangolds here are a full plant, but are not large, owing to a late start. Still they should be a fair crop, and considering the shortage in the Turnip crop must be extremely valuable. How serviceable they are! If well taken care of they will keep until August, and are most valuable either for pigs or lambs about midsummer; whilst if wanted during winter they are good for any kind of cattle, and especially for ewes during lambing time. Of course they require heavy tillage and well growing, whilst the early seed-time is a little drawback where the land is not already clean; but the heavy crop and good keeping qualities repay the grower over and over again for the extra cost and trouble.

Sheep are doing well on Turnips, but are travelling too rapidly over the ground. This was, however, expected. We see many cattle out still, and they look very shivery at nightfall; they would be better up. Hay and Clover are in demand, and advancing in price.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

DATE. 1897. October.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp of soil at 1 foot.	IN THE DAY. Shade Temperature. Max.	IN THE DAY. Shade Temperature. Min.	IN THE DAY. Radiation Temperature. In Sun.	IN THE DAY. Radiation Temperature. On Grass.	Rain.
	Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Inchs.
Sunday 10	30·209	4·8	46·2	W.	49·9	55·0	47·2	72·1	42·6	0·062
Monday 11	29·96	53·4	48·1	N.W.	50·2	58·2	4·6	102·7	45·0	—
Tuesday 12	29·992	43·8	41·4	W.	49·5	54·7	37·1	91·1	30·9	—
Wednesday.. 13	29·857	44·5	42·0	N.W.	48·2	53·9	36·9	90·0	30·2	0·019
Thursday.... 14	29·756	53·3	52·1	S.	48·9	61·6	43·9	79·9	42·4	—
Friday 15	29·522	59·2	55·3	S.E.	50·4	64·8	52·3	87·2	43·0	0·060
Saturday .. 16	29·654	58·5	54·6	W.	52·3	65·0	54·1	101·3	49·4	—
	29·851	51·8	48·5		49·9	59·0	45·9	89·2	40·5	0·141

REMARKS.

10th.—Fair morning, with gleams of sun; overcast afternoon.
11th.—Rain at 5 a.m.; bright sun from sunrise almost all day.
12th.—Bright sunshine almost throughout; cloudy evening.
13th.—Foggy early, a little sun at times; overcast evening, and slight rain at night.
14th.—Generally overcast and drizzly till 10.30 a.m., and a little sun in the middle of the day.
15th.—Sunny morning; overcast afternoon, with spots of rain and showers at midnight.
16th.—Fair early; bright sun all day.

A mild fine week; no frost in air, and very slight on grass.—G. J. SYMONS.

Journal of Horticulture.

THURSDAY, OCTOBER 28, 1897.

THE JOURNAL OF HORTICULTURE *can be obtained from the Office*, 171, *Fleet St., London, post free for a Quarter*, 3/9. **Editorial communications must be addressed to 8, Rose Hill Rd., Wandsworth, S.W.**

HONOURS IN HORTICULTURE.

PRESENTATION OF VICTORIA MEDALS.

WHENEVER honours are accorded, no matter in what form, in clerical, diplomatic, legal, scientific, or any other circles, differences of opinion arise as to their exact appropriateness. This is only to be expected in a world which contains so many persons who may, for all practical purposes, be equally entitled as participants. There are, moreover, always a few excellent men who cannot see the necessity for any honours at all, even though they may have been compelled to be decorated with sundry alphabeticals—well won and worthily borne.

Few honours, beyond the winning of prizes at shows, are provided and distributed in the domain of horticulture; and it may fairly be said that the Victoria Medal of Honour, instituted by the Royal Horticultural Society, in commemoration of the wonderful reign of its Royal patroness, was a great departure from orthodox routine. It undoubtedly was; and even though few, very few, may have dissented from its form, it was, judging by the gathering in Westminster on Tuesday last, and the tone of that great meeting, one of the most popular, if not *the* most popular, "departure" the Royal Horticultural Society has made for a very long time.

Never before has such a crowd assembled in the Hall in St. James Street at a meeting of the Society as on the occasion of the distribution of the medals in question, and this function, with the luncheon preceding, cannot be otherwise regarded than as a distinct success. Not a hitch occurred to mar the harmony of the proceedings, and the hundreds of on-lookers were evidently as happy in their plaudits as were all those of the "sixty" who could attend, as apparently nearly all of them did, to receive the golden symbol in honour of an event so unique that its parallel can scarcely be expected to occur again. The occasion, then, was historic, and the method of celebration was unmistakeably regarded with distinct approval.

As to the recipients of the honour conferred, it may be fully conceded that there are those, and even many, as well entitled to receive it as were at least several of those who were chosen as worthy, in

some way or other, by the Council of the Royal Horticultural Society. We do not say that the equals of all could be found who, in their respective spheres, have rendered signal service in the scientific, practical, or administrative aspects of horticulture; for, to cite no others, there is only one Sir Joseph Hooker, one Dean Hole, or one Baron Schröder, and it may be said that no recipients of the Victoria medal appreciated the distinction conferred on them by its possession more than they did, and none on receiving it at the hands of the President received warmer greetings from the densely packed audience.

The Council of the Society has naturally, from time to time, had many difficult problems to consider and to solve, but it is questionable if, during recent years at any rate, any one of them has given cause for more anxious thought and serious consideration than the weighing of the claims of hundreds of able persons whose names must in the very nature of things have been brought under review. The task of determining the final choice must have been in its way herculean; but as was clearly set forth in the admirable speech of the President at the luncheon, to which the elected Victorianists were invited, the decision did not turn so much on individuals as on groups and their representatives, such as, for instance, the scientific and commercial sections, with amateur patrons of gardening, and actual workers in it. That has clearly been the principle on which the decisions were based.

It cannot be said that gardeners have not had their full share of recognition, and this, no doubt, accounts largely for the general approval with which the decisions have been met, though we thoroughly believe there are no men who value more highly the important work of their scientific coadjutors than do the intelligent working gardeners of Britain. They could not, in fact, have been so accomplished as they are had they not made themselves, as far as they could, acquainted with the researches of men whose patient investigations have done so much in showing the way—the true way—to the achievement of the useful objects in view.

Perhaps if there is one section of horticulturists who, in proportion to the work they have done, and are doing, who are the most sparsely represented, it is that known as growers of garden produce for market—men who, by their remarkable enterprise and cultural skill, have accomplished so much in bringing the wholesome influences of gardening into the homes of the people and brightening their lives. Even this section is not forgotten, and in time the great and good work that is done in the direction indicated will be more fully understood and appreciated. But after all only sixty persons —the number corresponding with the years of her Majesty's reign— could be chosen out of thousands, while none of the members of Council could be elected—a pity, since they have done so much for British horticulture.

The proceedings of the historic event of the 26th inst. are narrated in the report on page 414.

HEALTHY FRUIT TREES.

The articles in the *Journal of Horticulture* on fruit culture have been of much interest. To me it seems that some writers pin their faith to one method too securely, as being the right and only manner in which the production of fruit or successful combatting of tree diseases can be accomplished, and this without inquiring into the predisposing cause of fruitlessness or tendency to disease. Take, for instance, canker. Has not deep-rooting something to answer for, this imparting to the tree a tendency to become susceptible to attacks of diseases? Certain it is that the removal of the roots from unaërated subsoil, that frequently contains quantities of injurious iron, into well aërated soil near the surface, has a powerfully beneficial effect on the tree; and if, in addition, this soil contains the necessary quantities in proper form of the chemicals required for sustaining healthy growth, it will matter little how they are supplied, whether as "ate" or "ide," or as "just manure," only keep the proportions true. This will assist greatly in warding off attacks of disease, or defeating them when existent. Trees, when properly supported, are enabled to maintain a healthful, fruitful condition. The knife will only be needed for regulating the branches.

The secret of successful culture undoubtedly lies in sound, firm, clean healthy trees, and this is most easily secured when the roots are kept near the surface, where they derive the most benefit from, say a judicious application of "just manure," seasoned with "ate and ide." Under most circumstances such a blend will prove beneficial, if properly balanced and applied at the right times.

Much could yet be written by such men as Mr. Abbey (long may he live to write) as to how trees take their food from the soil by means of the root hairs; how it is manufactured in the leaf and stored in the fruit, or otherwise employed in building up the different parts of the tree; what that food consists of; how it is obtained from the film of moisture surrounding the particles of earth, and how or in what form additions to present quantities can best be made; also as to the influences on fertilisers, on the colour and flavour of fruit.—Fifer.

FRUIT AND TABLE DECORATIONS.

In thanking "H. D." for his efforts to remove the wrong impressions he fancies I am labouring under, I should like to know if there is any mistake where he says that at one time the young men used to turn out *en masse* to prune and nail wall trees. I have always regarded pruning as an important part in the cultivation of fruit, and one which some experience was necessary to carry out successfully. Has "H. D." given us the index to the decadence in wall fruit culture? I shall be surprised to hear that young men were permitted to use the knife on the well-trained and fruitful examples referred to by himself and his friend "Melton" unless under the watchful eye of the chief.

I am still under the impression that plant and floral decorations are not the cause of the many bad instances of cultivation we see, or that they can be held responsible for the deprivation of the assistance at one time given by the young men in nailing and pruning. What our fruit trees on walls and in the open are suffering from is the want of men who have both the knowledge and inclination to show their men how to work. There are still many places where work is not so pressing at this period of the year, but that the men might be directed how to improve unsatisfactory trees which ought to be made to pay for the labour of attending to them, or make room for others that will.

Those who cannot look after the trees and fruit themselves, should place them in the hands of an intelligent labourer. Give him a respectable wage, with a comfortable house and garden. Satisfy yourself that he is the man for the place, and fix him to it. Teach him to snatch the superfluous shoots off in summer, to shorten back spurs, not only on wall trees but those in the open, to discriminate between branches that are healthy and those that are brown half through. Such a man will be found invaluable also in the gathering and storing of fruit. Most gardeners know how difficult it is to impress on old and young men the necessity of careful handling. I do not intend to convey that such a man would have fruit trees as his primary object, he would be equally useful in other departments.

We have our share of decorative work, and know the value of 200 or so of Chrysanthemum plants for cutting from to carry us on until the end of January, in addition to those grown for exhibition. There are, also, 300 or 400 Cyclamens in 5, 6, and 7-inch pots; 100 or so of Arums in 8, 9, and 10-inch pots kept in them through the summer, specimen Azaleas and other plants now so generally employed in decorating, to be attended to. Yet the young men (and this is the point) have been able to help with fruit gathering (not a small matter with us for a private establishment this year) the watering of trees against walls and those in the open; also Celery (our water is applied with buckets), and the men are now ready to give a little assistance with nailing, lifting, or planting, or any other work where it is advantageous to concentrate labour. Are we more favourably situated than others generally? I shall have no difficulty in showing that we are not.

With respect to table decorations it seems I have been misled. My employer, in whose taste and knowledge I have the greatest confidence, orders the fruit to be placed on the table. I am always anxious to learn, and have gone to some expense to add to obtained knowledge in this important part of a gardener's duties. I should like to know what is meant by "Highest Circles." Does it include those who have fruit of their own, similar to what is seen at Chester, Shrewsbury, and other places on the fruit and decorative tables, or does it mean those who buy what fruit they want and employ decorators?

There is an advantage in having fruit handed round, an advantage I fear too many are ready to avail themselves of. I had looked upon the dessert tables at our best shows as a boon to gardeners who have much decorative work to do. "H. D." has "set me longing," and to use a frequent expression of our young men, I should like to see what others do. Horticultural societies have done much to help gardeners; could they still add another class? There are others, beside myself, who would like to see what is done in the "Highest Circles."—S. B. O.

[It is highly creditable to young men to give willing aid in outdoor work of the nature indicated. It is excellent practice, and they will

never regret doing their best outside their particular domain under glass. It is this combination of work in their youthful days that has made most of our leading gardeners what they are now, and no doubt "S. B. O." had his share of useful outdoor work in his probationary days.]

CHILLINGHAM CASTLE.

A FEW notes taken during the month of August at this fine old Border castle in Northumberland may interest the readers of the Journal. The name of Chillingham is generally associated with the famous wild cattle, which together with numerous herds of red and fallow deer, find a home in a spacious park nine miles in circumference. These animals still retain their wild nature, and are generally supposed to be survivors of the wild cattle that in days gone by roamed the Caledonian forests. The castle itself is very ancient, and is approached from the western, or main entrance, by a magnificent avenue of Limes a straight quarter of a mile in length.

The flower garden (fig. 60) is very extensive, and at the time of my visit was perhaps seen at its best. A border runs the entire length, and this was especially gay with hundreds of "Geraniums," Begonias, Calceolarias, and Lobelias, the whole backed by a fine old wall on which climbers and creepers of various kinds find a congenial home. Very noticeable were clusters of Crimson Rambler Rose, Tropæolum speciosum, Clematises, and others. Some fine masses of Hyacinthus candicans in two large beds had a striking effect springing from a groundwork of green Ferns. All edgings to walks are formed of Box, kept neatly clipped, which gives a finished appearance to the whole. The southern boundary is formed by a beautiful terrace, topped by the Yew hedges already mentioned in the Journal, where the Flame Tropæolum has made itself at home, these hedges being 100 yards long.

Broad sweeps of gravel and lawn, broken by a short avenue of magnificent Elms, complete the views on this side; so returning by way of the flower gardens, we pass through the pleasure grounds to the north of the mansion, where fine masses of Azaleas and Rhododendrons are noticed. In a few minutes we are within the kitchen garden walls which enclose six acres, devoted to fruit and vegetables. Conspicuous among many varieties of Apples were fine fruits of Lane's Prince Albert, Gravenstein, Cellini, Ecklinville, Emperor Alexander, Golden Noble, Mère de Ménage, Peasgood's Nonesuch (very fine), Northern Dumpling (a Codlin-shaped fruit), Hawthornden, Fearn's Pippin, and Yorkshire Beauty. Apricots on a south wall were carrying a good crop, but Pears and Cherries were under average. A large area outside the kitchen garden is devoted to Strawberries, John Ruskin and Noble being favoured early varieties, the former being some days in advance of the latter at Chillingham; and as a main crop Keen's Seedling is still relied upon, Elton Pine following on as a good late sort.

A look through the fruit houses revealed excellent crops of Grapes, Figs, and Peaches, whilst in numerous heated pits and frames Melons, Tomatoes, and Cucumbers are grown in great quantities, suitable for the requirements of a large establishment. In conclusion it is pleasing to add that Lord Tankerville, the noble owner, though fast verging on the nineties, still takes a great interest and pride in his gardens; the clean appearance and fine crops of which testify to the skill of Mr. Henderson, the esteemed head gardener, who was a worthy pupil of the late Mr. Wm. Thomson at Dalkeith.—T. H. BOLTON.

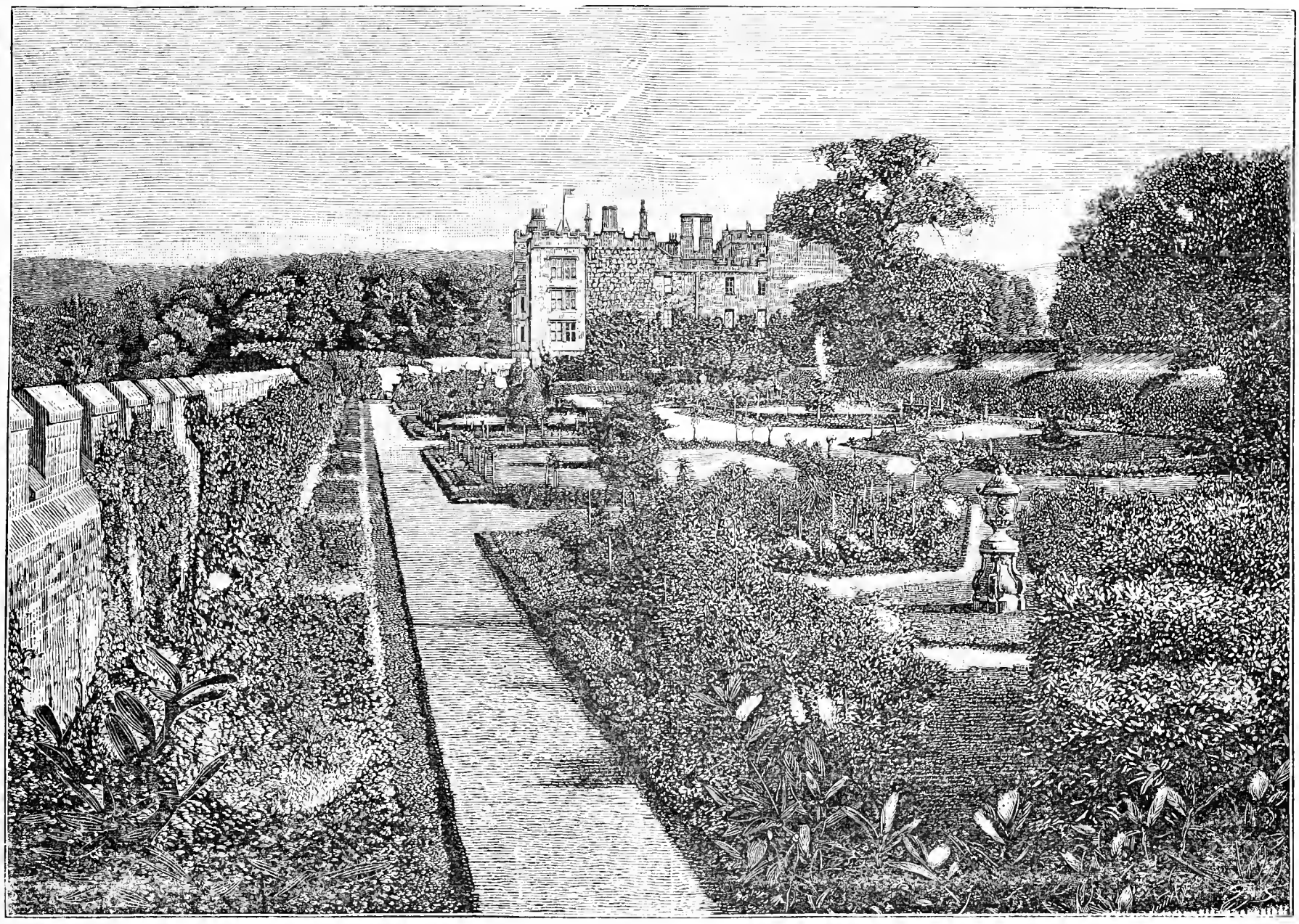

FIG. 60.—CHILLINGHAM CASTLE.

THE MANAGEMENT OF MEN.

WHEN a young gardener is called upon to take the responsibilities of his first head place he is confronted by many difficulties, to which he may not hitherto have attached due importance. Not the least of these is assuming the sole direction of other workers, and many a worthy young man has come to grief over this matter at the very commencement of the most critical portion of his career. All who have made any study of life know full well that there are some men who, from a lack of self-reliance or from some weakness of character, never seem to become qualified for the charge of others, though they may be admirable and skilled workers under proper direction. It is well when such men are aware of their own disposition, and have the good sense to make themselves contented if they are lucky enough to secure a good subordinate position. They can and do perform much useful service, which a wise superior will always duly value and recompense; they are usually free from the anxieties which often perplex a head gardener, and beyond that they commonly have a more secure office. The majority of young men who may have devoted ten or twelve years to a study of their calling are, however, sufficiently self-reliant to assume the cares of office, and to them the following remarks are addressed by one who was first placed in charge of men

over twenty years ago, and who has studied the art of management as an essential part of a gardener's duties.

It is of primary importance that the man in charge should not only understand every department of his calling, but be able to himself efficiently perform every operation connected with it. Without this thoroughness no head gardener can secure the respect and confidence of his men; and young men who in their learning days affect to despise those who apply themselves more industriously to the mastering of every detail may discover when it is too late that they have missed the road to success which their more assiduous fellow workers have found. Nothing places the authority of the master man upon a firmer basis than quietly proving to those under him that he is fully qualified for his position in the one respect at least which the men can judge—knowledge of the work.

It is needful also to make a study of men's varying dispositions, characteristics, and aptitude for particular work. Very much depends upon the overseer's skill in judging a man quickly in these respects; it gives him a natural power of direction which is soon appreciated, apart from the authority vested in his office. It facilitates the working of the whole establishment and increases the contentment of the men.

Whether a large or small establishment has to be dealt with, a code of rules is advisable, which, if only indicating the hours of work and for meals, with the conditions under which the men are engaged, more particularly in reference to the labourers, will assist in the maintenance of order. It seems unnecessary to speak of rules for a small establishment of three or four men, but there are always some understood and perhaps frequently disregarded, and it would be just as easy to have them in writing. Besides, order is as beneficial in a small body of men as in a large number, and it is something to teach men that it is to their own advantage, as well as to the employer's, to cultivate regularity.

Two points must be made essential; one is obedience to the chief, the other is punctuality. These should be as the laws of the Medes and Persians, and the wilful breaking of which must be punished by dismissal, if reprimand has failed to have any effect. No responsible man can carry on his charge satisfactorily if he cannot rely upon the implicit obedience of those under his direction, and for the same reason employers should never weaken their head men's authority by giving orders to subordinates. A true gentleman (or lady either) will recognise the evils resulting from such inconsiderate conduct, which are entirely contrary to their interests in every respect.

Whatever form the rules may take—and the more simple the better—they must be enforced, for nothing tends to a general laxity so much as overlooking the repeated infraction of a law. The enforcement must be done with judgment, however, and not arbitrarily, the object being to show that what is desired is regularity. In dealing with a very large body of men it will not be possible to exercise the same discretion in particular cases; general rules must be rigorously enforced or the "morale" of the whole place will be destroyed. If a new establishment is being started, or indeed, in any case, it is a wise precaution to submit the rules to the employer, as his sanction will strengthen the chief's hands greatly.

There are certain qualities which a gardener must possess and strengthen if he wish to rule satisfactorily, and two of these are firmness and an even temper. Everything must be well thought out before it is commenced, so that there may be no wavering or uncertainty afterwards. Let all orders and instructions be as definite and precise as possible, and if the enforcement of a rule becomes necessary there should be no hesitation, but decisive action must be taken. Then, too, if difficulties arise and a chief loses his temper habitually, he lessens his influence with the men, because he loses their respect, and because there is an innate recognition of the fact that to control others a man must first learn to control himself. I know men holding high and responsible horticultural posts, whose quiet manner might lead the unobservant to suppose they were extremely easy and even lax, but who, on the contrary, rule with exceptional firmness. It is an example of the kid glove covering a strong hand, the principle of the old Latin motto "*Sauviter in modo, fortiter in re*," freely translated as "Gentle in manner, firm in deed."

A superintendent of others must also be consistent in his decisions; a man who alters his opinion or behaviour frequently will not secure much attention. Another essential point is justice, which must be dealt out equally in the employer's interests and on behalf of the men. A really even-handed course of conduct is soon understood and appreciated, for there is a considerable amount of sound common sense in the great body of working men. They recognise that in exchanging their labour for the means of subsistence justice is due to them as much as to the employer. It is one of the head gardener's difficulties to balance the two interests, which should not be regarded as conflicting. Properly they are mutual interests, and it would be better for the work of the world if this truth were more generally recognised.

Lastly, the head gardener should be able to give both consideration and encouragement to his men where it is deserved. I have considerable faith in the majority of working men if they are treated well and ruled rightly, but there are exceptions, of course, who may be very troublesome. A really wrong-headed man, who will not recognise the obligations of life, should be disposed of at once; it is better for the master, and it may prove better for the man if there is any chance of a severe lesson effecting a reformation. For the obedient, industrious, and persevering, an occasional word of encouragement is a great help, particularly if it be followed when possible and prudent by more substantial recognition of worth.

These notes are not put forward as mere theorising about possibilities, but they indicate the course which experience with large bodies of men under difficulties of exceptional character has proved to be the most advantageous. It is not possible to smooth away all the difficulties of life, but these hints may be suggestive to young men and to them they are addressed.—SUPERINTENDENT.

CHRYSANTHEMUM SHOWS.

As is usual at this time of the year we have received numerous intimations of Chrysanthemum shows which are to be held during the coming season. Space, however, can only be found for mentioning those that have been advertised in our columns. If any have been omitted we shall be glad to add them to the following list. We append the names and addresses of the various Secretaries.

Oct. 29th and 30th.—BATTERSEA.—J. O. Langrish, 167, Elsley Road Lavender Hill, S.W.
Nov. 2nd and 3rd.—BRIGHTON.—J. Lewis, 37, Preston Road, Brighton.
„ 2nd and 3rd.—PLYMOUTH (West of England).—C. Wilson, 4, North Hill, Plymouth.
„ 2nd and 3rd.—CROYDON.—W. B. Beckett, 272, Portland Road, South Norwood.
„ 3rd and 4th.—WOKING.—H. W. Robertson, Chertsey Villa, Woking.
„ 3rd and 4th.—LOWESTOFT.—H. W. Bevan, 9, High Street, Lowestoft.
„ 3rd and 4th.—CARDIFF.—H. Gillett, 66, Woodville Road, Cardiff.
„ 3rd and 4th.—BLACKHEATH (Kent County).—F. Fox, The Cedars Gardens, Lee.
„ 5th and 6th.—ALTRINCHAM.—A. Hay, Navigation Road, Altrincham.
„ 9th and 10th.—LEEDS.—J. Campbell, Methley Park, Leeds.
„ 9th, 10th, and 11th.—ROYAL AQUARIUM (N.C.S.).—R. Dean, Ranelagh Road, Ealing.
„ 9th, 10th, and 11th.—BIRMINGHAM.—J. Hughes, 140, High Street, Harborne.
„ 10th and 11th.—HANLEY.—J. and A. Kent, Hanley Park.
„ 12th and 13th.—BRADFORD.—R. Eichel, 16, Westcliffe Road, Shipley.
„ 12th and 13th.—ECCLES.—H. Huber, Hazeldene, Winton, Patricroft.
„ 17th and 18th.—SOUTH SHIELDS.—B. Cowan, Harton, South Shields.
„ 17th and 18th.—HULL.—E. Harland and J. Dixon, Manor Street, Hull.
„ 17th and 18th.—BRISTOL.—E. G. Cooper, Mervyn Road, Bishopston, Bristol.

N.C.S. FLORAL COMMITTEE.

A MEETING of the Floral Committee of this Society was held at the Royal Aquarium on Monday afternoon last, the chair being taken by Mr. T. Bevan. There was a large quantity of blooms on view, and the quality was good. First-class certificates were awarded as under:—

Lady Hanham.—A sport from Viviand Morel. The colour is pale cream and salmon rose. Shown by Mr. W. Wells.

Mrs. S. C. Probin.—A very fine incurved Japanese. Broad florets and of good substance; colour flesh pink, reverse paler.

Pride of the Market.—A very free-flowering Japanese; colour golden yellow, suffused with reddish crimson. Exhibited by Mr. N. Davis.

Ella Curtis.—A Japanese, considered to be an improvement on the old Boule d'Or. Broad, curly, and intermingling florets; colour rich golden yellow inside, with reverse of pale yellow. From Mr. W. J. Godfrey.

Lady Ridgway.—An immense massive looking Japanese, with deeply grooved incurving florets of great breadth; colour reddish bronze, reverse light bronze. Also from Mr. Godfrey.

N.C.S. GENERAL COMMITTEE.

AT Anderton's Hotel, Fleet Street, on Monday evening last, there was a meeting of the General Committee of this Society, the Chairman

being Mr. T. W. Sanders. The minutes of the previous meeting were read and confirmed, and a good deal of correspondence and ordinary routine work disposed of.

The dates of the Society's shows for 1898 are proposed as follows :—September 6th, 7th, and 8th ; October 11th, 12th, and 13th ; November 8th, 9th, and 10th ; December 6th, 7th, and 8th. The Secretary then presented a rough financial statement concerning the cost and sale of the Society's Jubilee edition of the catalogue, which was, considering everything, regarded as satisfactory. The demand is steady, and it is expected that there will be a good demand for this work during the present season. Mr. Bevan called attention to the fact that at present there was no Catalogue Committee in existence, none having been elected early in the year, and he thought this was a matter that should be settled without delay.

It was announced that the Society's annual outing for 1898 had been fixed, and arrangements made with the G.E.R. Company to undertake entire charge of the party. This event is fixed for the 18th July. Stewards for the November Exhibition were elected, the following gentlemen being elected—viz., Messrs. Langdon, Simpson, Taylor, Willis, Ingamels, and Reeve. Following an old-established precedent, the Committee have invited members of the Floral Committee to dine together on the evening of the last day on which they meet—namely, 13th December, in consideration of their services to the Society.

Mr. Harman Payne called attention to a letter he had received from the President of the French National Chrysanthemum Society, M. Maxime de la Rocheterie, offering a cordial invitation to the members of the English Society at the Orleans Conference on the 6th November, and expressing a wish to see some blooms staged of English cultivation. No proposal, however, was made, there being apparently nobody desirous of making the journey, the French Show unfortunately clashing with the one at the Aquarium. It was announced that the annual dinner of the Society was fixed for Wednesday, the 24th November, at Anderton's Hotel, and that Mr. T. W. Sanders, the Chairman of the General Committee, would preside on that occasion. Thirty-one new members were elected, and the following Societies were admitted in affiliation :—The Wolverhampton Chrysanthemum Society and the Romford Society.

Honours for Chrysanthemum Raisers.

Some of our readers will be interested in learning that Mons. Ernest Calvat has recently been promoted from Chevalier to Officer of the Order of the Mérité Agricole, and that Mons. Alfred Chantrier, a raiser of more recent repute, has been appointed Chevalier of the same Order.

Chrysanthemum Leaf Rust.

It would be interesting to know if some varieties of Chrysanthemums are proof against the leaf rust. I grow some half-dozen varieties for producing medium-sized flowers for cutting, and amongst them every plant of Niveus is attacked rather badly, but I cannot find a leaf affected on any other variety. No incurved are grown.—Wm. Taylor.

Early Flowering Chrysanthemums.

Much excellent work has been done by the Royal Horticultural Society in its Gardens at Chiswick, and the careful trial of early flowering Chysanthemums that has been conducted, is another score to their record. In the experienced hands of Mr. S. T. Wright the trial has been admirably conducted, and the results most interesting as well as instructive. One long border, with two or three smaller beds, were requisitioned, and in the early part of this month there was a grand display. Some of the very early varieties were then almost over, while others were still only in bud ; but the majority were at the highest stage of their beauty. The Floral Committee of the Society visited the collection, and after careful inspection, awarded marks of honour in several instances. Many varieties had previously received recognition, and were not again given marks. A few varieties were of inferior merit and not worth growing.

Though we do not propose to particularise all those that secured awards of merit, we may advantageously make brief references to a few of the best in the collection. No effort was made to put them down in order of merit, but instead brief notes were made when in walking along a variety of special merit was seen. We may commence with L'Ami Conderchet, which in habit of growth strikingly resembles Aster acris. The numerous flowers are of a soft primrose shade. The dwarf free-flowering Madame Ed. Lefort, with its old gold coloured blooms, is certain to be admired, and the same remarks apply to Anastasia, of which the flowers are of a pinkish purple hue. A beautiful bronze is Fred Maronet, while Canari is a superb yellow. Both of these are dwarf and free. Another yellow of merit is Flora, which is exceedingly useful for cutting. White St. Croats and Mdlle. Jolivart are both pure white, though the first named has a conspicuous yellow centre. Longfellow, another white of pyramidal habit, is unsurpassed for cutting.

For dwarfness pride of place must be accorded to Dodo, which attains a height of only about 9 inches. As the plants are upwards of three-quarters of a yard through, and covered with bright yellow flowers, the effect they produce can easily be imagined. Madame M. Masse may be described as a deeply coloured Viviand Morel, and is of good quality. Mrs. Selby, rose pink in colour and very dwarf, must not be omitted, while Mytchett White must have a place in every collection. White Lady is also very fine. The lady's flower is Toreador, which is of a deep bronze colour. Piercy's Seedling and Golden Fleece are yellows of the highest quality, and with them this brief reference must close. The trial is a credit to the Society and to Mr. S. T. Wright.—D. R.

Early Flowering Chrysanthemums at the Aquarium.

Some decidedly good useful varieties of early flowering Chrysanthemums were exhibited at the recent Aquarium Show of the National Chrysanthemum Society. The varieties enumerated below were set up in bunches, these being sufficiently numerous not only to indicate the characteristics of each variety, but to show the effect produced by the liberal use of one variety. The varieties belonged largely to the smaller flowered section of the Japanese, and most of them will probably flower as well outdoors in a favourable position as under glass in pots

The description of colour may not in all cases be strictly as the flowers were seen under artificial light. Not any one variety can be said to be unworthy of employment in decoration, as the flowers were bright and fresh, producing an excellent display. They were also light and graceful, and formed a distinct contrast to the ever-increasing number of the imposing large-flowered varieties which bloom in October.

Albert Chausson is a rich orange, tipped yellow; Orange Child, a lemon yellow ; Notaire Croz, deep lilac or heliotrope ; Eclaireur, a good purple Japanese variety : Puisart Courboillier, crimson Japanese ; De la Guille, bronzy yellow ; Claret Belle, rich claret colour ; Ernest Mathieu, neat short-petalled flower ; Ambrose Thomas, crimson red, long narrow florets ; Montague, deep rich purple ; M. Backman, deep bronze ; Ivy Elphic, pink ; Mons. E. P. Van Geirt, yellow, striped red, erect pointed petals ; Queen of the Earlies, pearly white Japanese, broad florets, a lovely acquisition to early flowering decorative white Chrysanthemums ; Bronze Dwarf, colour, as its name implies, good ; Madame Eulalie Morel, lilac, florets yellow as opening ; President Lefevre, rose and white ; Sunshine, splendid rich bright yellow, a globular flower with broad petals ; Sam Barlow, narrow twisted florets, deep pink or lilac ; Rose Queen, rose lilac, incurving petals ; Roi des Précoces, deep crimson, a good and desirable variety, though not of recent introduction ; Mychett White, narrow florets, good ; Bronze Prince, bronze, yellow underneath petals.

Calvat's Introductions.

Among the recent introductions of the French raiser, Mons. Calvat, a very pretty and useful medium sized Chrysanthemum is Soleil d'Octobre. This is a canary yellow, rich and clear. The incurved variety Perle Dauphinoise is a good mid-October variety ; colour old gold. Madame Gustave Henry, with pure white long tubular florets, is in splendid condition about the same time ; so also is Mons. Hoste. This variety has very wide florets, being a Japanese reflexed. The colour is rosy white, tinted yellow. Vt. Roger de Chezelles, a lovely old gold and orange, is really a splendid flower with drooping florets.

Prominent New Varieties.

Mrs. G. W. Palmer is a sport from Mrs. C. H. Payne ; colour bronze, and the florets broad ; the flower is of large size. Geo. Seward is a fine orange bronze. Elthorne Beauty has full deep blooms, of a deep pink, the florets being very numerous, long and drooping. Simplicity is a remarkably fine white, forming a beautiful flower, with the petals incurving at the points. Emily Silsbury is another addition to white Japanese varieties. It has a creamy shade, but when rich and clear and the blooms fresh it is a chaste addition. John Neville is a massive bloom, crimson carmine colour, the reverse of the florets yellow. Red Warrior, a deep bronze. Mrs. H. Vachoul, purple, reverse of florets silver, and curiously twisted. Admiral Ito is a lemon yellow, full blooms of splendid size. A beautiful white with an unpronounceable name is Comtesse Jean de Lavochefoucauet.* Wm. Laycock is a lemon yellow with broad florets, twisted, incurving, and recurving. Mrs. Tucker Payne is a deep maroon with silver reverse.—E. D. S.

Chrysanthemums Damping.

For the edification or instruction of the younger members of the Chrysanthemum-loving fraternity, as well as to enlighten any who may be in a state of embarrassment caused by the, I may say, greatest evil a "Mum" grower has to contend with—viz., the damping of the blooms, I am prompted to contribute a few remarks to the columns of "our Journal" touching on this most important subject.

Damping arises from various causes. For instance, if the season be a wet one, or the weather be heavy or foggy, the evil is sure to be more or less felt ; again, if the houses in which the plants are placed are badly glazed it will put in an appearance, accompanied by mildew upon the foliage ; but to my mind overfeeding is at the bottom of the major portion of the trouble. Having been a grower for many years I have long held this conviction, and this year I am more than ever convinced that such is the case. Some six weeks ago it fell to my lot to take charge of a quantity of Chrysanthemums, which at first sight appeared to be all that one could desire, but when closely examined I quickly found that artificial stimulants had been applied too freely, the growths being exceedingly gross and thick, and lacking that rich colour and solidity of bark and wood which healthy and well-grown plants present. I at once saw that my only remedy to avert disaster from damping was to withhold stimulants altogether ; this I did, of course gradually, with the result that the majority of the plants that were then in bud have, as fast as the petals commenced to unfold themselves, been attacked, whilst others that were not so forward are expanding their blooms satisfactorily.

Taking the above facts into consideration, every thoughtful reader will at once come to the conclusion that the reason of the results achieved is not far to seek. The plants, having been gorged with stimulants, had, comparatively speaking, gone on all right ; but as soon as the growth

* Is it spelt correctly ? Perhaps if given its right name this might be more manageable.

ceased, and the formation of the bud took place, there was a temporary lull in the system of the plants, which, together with the condition of the roots caused by excess of various manures, brought on the disastrous results before stated. The reason of the later plants escaping the evil is, therefore, quite obvious, as the continuation of growth after withholding stimulants, having exhausted the manurial properties from the soil, the roots with the top growth were more in unison one with the other.

Respecting remedies for damping I do not think there is anything really effectual. Certainly, when caused by reason of heavy, foggy, or wet weather, and drip, it may be obviated to a certain extent by paying careful and strict attention to ventilating, by avoiding draughts or too sudden change of temperature, and by applying just sufficient fire heat to keep the air dry and sweet. But in cases of overfeeding, which, as before stated, I contend is in nine cases out of every ten at the very root of the mischief, I do not think there is any remedy.

In conclusion, I would say in reference to the use of artificial stimulants, let your motto be "Discretion with forethought."—G. PARRANT, *Wareham, Dorset.*

How Chrysanthemum Growers are Made.

THE Chrysanthemum shows up so brilliantly at this particular season that any gilding of "the golden flower" by a humble grower would be not only unnecessary but decidedly superfluous. As a gardener who ten years ago knew little more of the matter than the man in the moon, and having in that comparatively short period waxed and waned as a grower of exhibition blooms, I venture to express a few thoughts upon a matter in which so many are directly concerned. Moreover, to me at least, my present standpoint seems particularly favourable for a dispassionate view. The same influences, too, which forced me, an unwilling competitor, into the thick of Chrysanthemum contests, are sufficiently powerful and far-reaching to account for a great number, possibly the majority, of those who now pose as big bloom growers. Hence, in speaking for myself, I may perhaps be the mouthpiece of many similarly situated—gentlemen's gardeners.

As first impressions often go a long way, mine, derived from the first exhibition I witnessed, may commence this review. This exhibition was at Woolwich, and although some twenty-six years have elapsed since that genial old gardener, B——, my master, arranged to meet me and walk over in the evening after we had "cleaned up," one or two things recall it vividly to mind. Certainly the Chrysanthemums have but little to do with it, for so far as the show was concerned there was nothing to pay and, comparatively, but little to see. However, curiosity ran rather high, it being the first time anything of the kind had been heard of by me, and expectation, perhaps, went higher still on finding B—— at the trysting place in all the glory of a swallow-tailed coat and chimney-pot hat, this with a great deal of the chimney in it. Well, the show, which was styled a conversazione, consisting of more of the latter than the former, the buzz of which, assisted by a piano and a young lady who sang, helped the proceedings considerably.

Here and there a few "specialists"—these, I suppose, were born, not made—hovered around specimens, chiefly of the Rundle family, severely trained in the way they should go to cover balloon and umbrella trellises. What is now lacking in data upon the methods employed and results obtained by these pioneers of Chrysanthemum exhibiting must be compensated for in remarking that Woolwichians thought their show sufficiently important to invite the late Emperor Napoleon, then residing at Chislehurst, to pay it a visit. His Majesty responded, and had it all to himself, owing to the committee appointed to receive him presuming upon Imperial punctuality, finding when they were ready that the august visitor had been and seen and departed up to time.

Links all but invisible connect these first impressions with a show held a dozen years later, when the big blooms came very much as a surprise to me, although at this time a head gardener and grower of the usual complement to be found at that period in most private places. Peter the Great was a great thing then, Maiden's Blush and La Triomphante being also conspicuous among the Japs. Chrysanthemum society was at that time divided into two classes (and very strongly divided, too)—viz., those who grew big blooms, and those who did not. To the latter class, which was not slow in expressing pity, mingled with a little contempt, for the former misguided beings, I thought myself fortunate to belong, and possibly should still, had not circumstances beyond control rudely converted me. And how many gardeners are impelled by the same means! From this time very distinct was the advance in culture noted each year at our show, varieties annually waxing larger and brighter and better, and the more that this was the case the more did we outside the charmed circle condemn the whole system. I, in particular, had neither desire, nor room, nor time for such misapplied energy, but somehow each year found us at the show, where we ostensibly went to critisise, but covertly to condemn.

Speaking now for myself, and not for that great condemnatory party, which has apparently dwindled into comparative insignificance, I must openly confess that those big blooms, so fresh, so bright, so perfect, began to exert a talismanic influence, although the method of their production was still a mystery. But these big blooms eventually became the topic of higher circles—our masters and mistresses, principally the latter, who began to throw out hints, which clearly showed which way the wind was blowing. "Mrs. So-and-so would like you to go over and see her Chrysanthemums." "Mr. This will give you some cuttings of large kinds; and Lady That wonders you do not grow a few for the show." Soon hints became wishes, and an employer's wish is wisely interpreted as a command. Very reluctantly, and in a half-hearted way, I started on my exhibition career with 100 plants; went for the cup, and went nowhere near it, receiving a few more hints from head-quarters. Well, I did not say much, but thought a lot; in fact was fairly mettled—or nettled, perhaps being stung in sundry tender parts; so the succeeding year found me with Molyneux's little book and 300 plants, all for big blooms; but the cup, now so tantalising, went to another, whose conversion dated considerably further back.

There was less disappointment at this—the second venture—for my power over these plants now began to assert itself, and the following year with more plants, more knowledge, and the fever fairly raging, there was no slip 'twixt the cup and our stand of Japs, not to speak of a trophy for incurveds and sundry prizes in smaller classes. I can only say that it was with deep regret, from circumstances over which I had no control, that exhibiting had to be discontinued, and so far as my employers are concerned they like the small flowers for general decorative purposes, but insist upon having the big blooms as well for their own delectation and that of their friends. Hence we now grow those best suited for present purposes, without the high tension experienced in exhibiting, at the waxing of which, and the waning of which, I found, as doubtless hundreds have found, that "Discretion was the better part of valour."—EX-EXHIBITOR.

Chrysanthemum Prospects Round Bolton.

NOTWITHSTANDING the adverse atmospherical conditions, it is gratifying to note the many excellent collections grown in this neighbourhood. The season, in fact, promises to be the finest on record. Enthusiasm runs high amongst local growers, and with the show near at hand fine displays are anticipated, which arouses a healthy spirit of emulation. It is not my intention to enumerate what I found at each place separately. Suffice it to say that where they are grown for the exhibition board, or specimen plants, or for grouping, the outlook is most hopeful.

The most noteworthy amongst the Japanese are—Australian Gold, Arona, Mrs. Marling Grant, Mrs. Hume Long, Col. T. C. Bourne, C. W. Richardson, Modesto, L'Emindra, Indiana, Baron Ad. de Rothschild, Belle Mauve, Australie, Lady Byron, Lady Ridgway, Mons. Chenon de Leche, Mons. Demay Taillandier, Madame Ad. Chatin, Madame Carnot, Mrs. John Shrimpton, Mutual Friend, John Seward, Deuil de Jules Ferry, Emily Silsbury, Mrs. Briscoe Ironside, Mrs. W. H. Lees, Nyanza, and Amiral Avellan.

Amongst the incurved the most noticeable are Mrs. John Gardiner, L'Amethiste, Ma Perfection, John Fulford, Globe d'Or, Charles H. Curtis, J. Agate, Owen's Crimson, William Tunnington, Baron Hirsch, and Major Bonnaffon. The Queen and Princess family are especially good, and well timed for our coming show on November 19th and 20th, for which a very comprehensive schedule has been prepared, and liberal prizes are offered.

The leading class in the open section is twelve incurved and twelve Japanese blooms. The prizes for these are £5, £3, £2, and a 10-guinea challenge cup; other prizes in this section are especially good. The great event to the Bolton people is the President's (John Heywood, Esq., J.P.) prize, a silver cup, for twelve incurved and twelve Japanese blooms. This class is confined to growers residing within eight miles round Bolton.—R. S.

Glasgow Botanic Gardens.

FIFTEEN years ago I paid my first visit to the Glasgow Botanic Gardens, and have, with a few exceptions, made a rule to call at least once every year since. I again had the pleasure of looking through them on the 22nd inst., and also had the privilege of being shown the private departments personally by Mr. Dewar. I was so much struck by the healthy appearance of the Chrysanthemums that I thought a few remarks anent them would not be out of place, seeing we are about to enter another season of the autumn queen.

There are close on 4000 plants grown in 450 varieties. In the first place, I looked through two large span-roofed houses full of early varieties. I noticed several very good specimen blooms, and, the colours being nicely blended, they made a fine show. These, of course, were open to the general public, and in the private department there were several houses filled with the later varieties, and were well timed for the great exhibition to be held in the middle of next month. Each house, surveyed from a higher level than the plants, showed thousands of prominent buds, thrown well up above healthy, dark foliage, which cannot fail to make a handsome show. I also noticed that the grower thoroughly understands the art of feeding, as the surface of the pots was matted with healthy roots, which plainly denoted that there had been no gorging. Although they have passed through several thick fogs, I was told that there had been no damping.

Several of the earlier ones were in full flower, others were developing promising blooms, and amongst the best I noticed the following varieties:—Mutual Friend, Emily Silsbury (very good), Commandant Blusset, Madame Rouviere Houles, Edith Tabor, Simplicity, Lady Ridgway (pretty), Pride of Maidenhead (large), Mrs. W. H. Lees, Modesto, Amy Shea, Souvenir de Grenoble, Madame Gustave Henry (extra good), Mr. A. Newell, Duchess of York, Mrs. J. Shrimpton, H. Woolman, Phœbus, Mrs. G. Gover, Eva Knowles, Miss Rita Schroeter, Mrs. Bilsland, Mrs. Dewar (a grand white), and an unnamed seedling. The three latter are of Mr. Dewar's own raising, of which more will be heard. New York, Yellow Madame Carnot, Amiral Avellan, and Australian Gold. The Corporation of Glasgow encourages these exhibitions both in the Botanic Gardens and at Camp Hill, and a large winter garden on the green is now being erected for public displays, which are usually accompanied with first-class music. The citizens show their approval in thousands.

They may well be proud of their parks and gardens, and it would be good if other towns would follow more closely in their footsteps in such a worthy cause. W. RUSHTON.

STONELEIGH ABBEY.

GARDENERS are not a class who care to take many holidays, they are too much interested in attending to their duties at home. Sometimes, however, it is desirable for them to pay a little round of visits to some brother of the craft. A few days ago I managed to get a little diversion of that kind, and among other places visited Stoneleigh Abbey, Kenilworth, Lord Leigh's beautiful Warwickshire home. In the gardens I found Mr. T. Martin, busy, but still with time enough to show me round. In a span-roofed vinery some grand Alicante Grapes were growing, size of bunch, colour, and finish being of the first order.

I found, too, some splendid Chrysanthemums. The plants had been grown strongly from start to finish, yet it seemed not too strongly, for blooms as well as plants were grand. The varieties were principally Japanese ones, but I noticed in the incurved section wonderfully massive blooms of Baron Hirsch, neat examples of D. B. Crane, and the popular favourite, C. Curtis, gave promise for something good a little later on. Among the Japanese Mrs. W. H. Lees, Deuil de Jules Ferry, Eva Knowles, Graphic, Mons. Ch. Molin, Pallanza, Pride of Madford, Violetta, Edith Tabor, John Shrimpton, Phœbus, Miss D. Shea, Souvenir de Petite Amie, and Ethel Addison were conspicuous by reason of their good blooms. Mr. Martin has not grown his flowers with the object of showing them, but they are a good lot, and I think some of them ought to be placed under the eye of the public.—WANDERER.

CHRYSANTHEMUMS AT CHELSEA.

MESSRS. J. VEITCH & SONS of the Royal Exotic Nursery, Chelsea, have just now on view an interesting and comprehensive collection of the popular flower. French novelties are well represented, being mingled with a proportionate selection of American and home-raised varieties. The best of Calvat's novelties at Chelsea are Louise, Reine d'Angleterre, Le Moucherotte, Australian Gold, Mons. Chenon de Leché, President Borel, Amiral Avellan, M. G. Montigny, Souvenir de Petite Amie, L'Emindra, Japanese, white, slightly tinted; M. Geo. Biron, President Armand, Boule d'Or, and Commandant Blusset.

Another continental novelty worthy of notice is Leocadie Gentils, a pale lemon yellow sport, we think, from L'Enfant des Deux Mondes, or White Louis Boehmer as it is more generally known. This sport is large in size, and being of a pure tone of yellow will be a welcome addition to the hairy section. Octoroon, a large crimson and gold Japanese, and Mrs. S. C. Probin, Japanese incurved, with grooved pointed florets, are two American seedlings of promise. In yellows Mrs. Oporto Tait, A. H. Fewkes, Marjorie Kinder, Modesto, Sunflower, H. L. Sunderbruch, and Gold Dust are striking and effective. Lady Hanham, a beautiful large-sized flower, a pale rose and salmon buff sport from Viviand Morel, needs a special commendation, and is destined to become a very valuable addition to the showboard. In whites we find Emily Silsbury, Lady Byron, Pride of Exmouth, C. B. Haywood, Mrs. C. Blick, and Simplicity.

Mrs. G. W. Palmer is a sport from Mrs. C. Harman Payne, in colour varying from golden bronze to a rosy bronze. The well-known American varieties, Eva Prass, W. Tricker, Col. W. B. Smith, still remain favourites and are well done. Incurved are not numerous, but we noticed Baron Hirsch in good form, Prince of Wales, and Golden Beverley Mrs. Herman Kloss, a new Japanese, very rich warm terra cotta and gold; John Neville, Mutual Friend, Pride of Madford, Mrs. F. Jameson, Queen of Buffs, Mrs. C. Orchard (yellow), and others, show the extensiveness of the Chelsea collection.—VISITOR.

CALVAT'S NOVELTIES AT SWANLEY.

IN Messrs. Cannell & Sons' collection at Swanley there is a large number of very finely developed blooms of Mr. Calvat's raising. Some of the well-known varieties, such as Madame Carnot, Australian Gold, Ma Perfection, Le Moucherotte, Madame Gustave Henry, and Mrs. J. Lewis, need no description; but there are others, introduced last year and this, that appear worthy of a few notes.

Most striking of all is Madame Ed. Roger, a Japanese incurved with grooved florets, and a compactly built flower; the colour is an undoubted pure sea green, which, of course, grows paler as the flower ages. As a novelty Madame Ed. Roger is certainly entitled to be considered such, for it is the only green Chrysanthemum we have seen that deserves the name. Baronne Ad. Rothschild is a fine white Japanese of last year's set. N.C.S. Jubilee is a promising looking flower. It is solid and compact, and belongs to the Japanese incurved section, having florets grooved and rather broad; the colour is most attractive, being of a pale silvery lavender pink. M. B. Verlot is of the same type, but has narrow grooved florets; colour rosy mauve, reverse silvery pink. Madame K. Grenier, very pure white, a Japanese with grooved florets, is one of last year's set; so, too, is Capt. L. Chauré, big and solid, and of a rich golden yellow bronze. M. G. Chabanne is pretty; it belongs to the medium sized Japanese incurves, and has curly tips; colour gold bronze.

Souvenir de Molines is quite new; a solid compactly built flower, colour crimson bronze tipped and reverse gold. Iserette is another belonging to the present year's set, and was well shown at the Aquarium Show. It has medium-sized florets, and the colour is a rich golden bronze with orange chestnut inside. Another novelty is M. Massange de Louvrex, a fine yellow Jap. Madame A. Roussea, also quite new, is of medium size, colour rosy mauve, reverse silvery; Beauté Grenobloise, large white; Secretaire Fierens, very long florets, colour golden yellow and crimson bronze; Directeur Liébert, purple rose; Princesse de Galles, big blooms, colour pale pink shaded purple; and Mdlle. Lawrence Zédé, large lilac purple, are all of this season's set and worthy of looking out for.

Soleil d'Octobre is a very pure shade of yellow and an October-flowering variety of fair average size; President Nonin, yellowish buff shaded straw yellow; and Topaze Orientale, Japanese incurved, very close and compact, colour straw yellow; Madame Ferlat, pure white; M. Ed. André, Congrès de Bourges, Madame X. Rey, Jouvin, Madame G. Bruant, are others from the same grower. One of the best new whites is Mdlle. Lucie Faure, a fine compact Japanese incurved that was shown in first-class form last year at the Paris Show.—P.

CHRYSANTHEMUMS IN THE NORTH.

THE Committees of the numerous shows now find much difficulty in dating their fixtures so as to avoid clashing. The Harrogate Show, for this reason, has been fixed on the exceptionally early date for the district of November 4th. When passing through this popular health resort three weeks ago we took the opportunity to ascertain how the Chrysanthemums were going to respond to the demand of being to time in so late a district and cool autumn climate for which Harrogate is noted. We were fortunate in meeting Mr. Townshend, gardener to Mr. Becker Faber, Belvedere, just inside the station, and received a cordial invitation to look through the Chrysanthemums. The greater proportion of a large collection have been grown for grouping purposes. We found all the standard varieties for this purpose on the crown buds far advanced towards showing, their first developed florets giving promise of opening freely. We expressed some surprise to find them so early, and had doubts of about their being too forward, but were informed that on account of the cool situation there was nothing to fear in that respect. Mr. Townshend considers the prospect of a good bloom at least equal to previous years; but as he relies on well tried older varieties it is needless to record names.

CROW NEST PARK, DEWSBURY.

This collection is one of the best in the North. It is made up of more than 1000 plants: 500 are grown in first-class exhibition form, including the best up to date varieties of incurved, Japanese, and Anemones. The remainder are the freest blooming Japanese, Pompons of every grade, and all the best single varieties. The large flowering varieties are effectively staged in the middle of the large show house, and the smaller ones at the sides. Mr. Daniels, the park superintendent, has had in the past a long and successful exhibiting career, and is now as enthusiastic a cultivator as when he was winning prizes and silver cups. Although Crow Nest stands both high and bleak, by the closest attention in the earlier stages, and a knowledge of the constitution of each variety, he times his buds to the best advantage with the most satisfactory results.

Last year, during the three weeks the Chrysanthemums were on view, over 10,000 persons passed through the house. This year an equally rich treat is in store for Dewsbury people and neighbourhood, whilst Chrysanthemum lovers further afield will not begrudge time or expense after paying them a visit. Most of the large flowering varieties have been carried on to the second crown, and are now developing finely coloured flowers freely.

Of the newer varieties the following are proving reliable and good—Incurved: Bonnie Dundee, C. H. Curtis, D. B. Crane, Duchess of Fife, Globe d'Or, Lord Rosebery, and Mrs. R. C. Kingston. Amongst the older sorts some fine examples of all the types in the Queen and Princess of Wales families will be in evidence. A host of newer Japanese are grown, and remarkably fine examples of the following varieties will be in evidence—Beauty of Teignmouth, Boule d'Or (Calvat's), Col. Richardson, Charles Blick, Duchess of Wellington, Edith Tabor, Modesto, Miss Elsie Teichman, Miss Rita Schroeter, M. Gruyer, M. Demay Taillandier, Mutual Friend, Princess Ena Oceana, Palanza, Phœbus, Simplicity, and Duke of York.

SAND HUTTON, YORK.

Mr. Folkard, the well-known grower at Sand Hutton, writes: -"I am pleased to be able to state that the outlook in this neighbourhood seems to be a bright one, with perhaps one exception—viz., the Queen family. So far as one can judge at present, and from previous experience, I do not think they will be shown up to average form, owing chiefly to too early bud formation. The varieties alluded to are quite useless for show purposes, if the buds appear a few days too early, particularly if the weather is fine and bright after, as it is at the present time.

"I am of the opinion that it is not so much a question of 'ripe' wood as it is the time of bud formation suitable to the variety. I remember once having the best blooms of Madame C. Audiguier I ever saw, and the plants that produced the blooms were housed a fortnight before the buds appeared, and the shoots were more like young Willows, and could almost be tied in a knot. On the other hand, I am quite aware there are many varieties that are of little use in buds formed after the third week in August. A large majority of our buds appeared at favourable dates, and if 'ripe' wood and exquisitely tinted foliage is any criterion of good blooms, there certainly should be no lack of the latter. I never remember seeing the leaves of Chrysanthemums so beautiful.

"The Princesses are very promising, as also are the Tecks; C. H. Curtis, Mrs. R. C. Kingston, Lord Rosebery, Mrs. Tunnington, Jeanne d'Arc (very fine), and many others. Amongst the newer incurved Duchess of Fife and Miss F. Fowler are coming on fast; although crown buds of the former did not appear till the first week in September, they

are now unfolding their florets. Of the newer Japanese the following are very promising—Modesto (fine), Phœbus, Australie (very tall), Beauty of Teignmouth, General Roberts, Pride of Swanley, Australian Gold (on second crown), Dorothy Seward (very promising), Simplicity, a fine white, but rather early; the same with Lady Byron. Mrs. H. Weeks is a failure; plants stopped early in April did not show a bud till the middle of this month. I have nine promising buds of G. J. Warren opening freely. This variety appears to have a much better constitution than Madame Carnot, of which it is a sport."—A Yorkshire Grower.

Notes & Gleanings

Events of the Week. During the next few weeks horticulturists throughout the country will be busy amongst the Chrysanthemums. Shows are fixed for almost every day, and on one or two favoured dates there are about a dozen. On Friday, Oct. 29th, there will be Battersea; on Tuesday, Nov. 2nd, there will be Croydon, Plymouth, and Brighton; while Wednesday, Nov. 3rd, has been chosen for Woking, Cardiff, Lowestoft, and Kent County.

—— Weather in London.—The mildness that characterised the opening days of last week has scarcely been maintained since our last note was written. Thursday and Friday were slightly cooler, a little rain falling on the latter day. Saturday, Sunday, and Monday, though foggy in the mornings, were fine later in the day, and rather cool in the evenings. Tuesday was dull and wet, but Wednesday morning was finer.

—— Watering Fruit Trees.—It would be advisable in the present dry state of the weather if those having charge of fruit trees outside would ascertain the condition of the soil about the roots of their trees, particularly those against walls. In lifting some Peach trees recently they were found to be much drier than I like to see them at this season. These trees had been copiously supplied with water, but a gravelly subsoil accounts for their dry state. If fruit trees were better attended to in the matter of water at this season, and also liquid manure in the case of old trees, it is, I think, quite possible we might hear less of what is at times termed over-ripening or exhaustion after such a dry season as we have experienced.—W. S. G.

—— A Fruit Evening at York.—Under the auspices of the Ancient Society of York Florists both a pleasant and instructive meeting appears to have been held in the old city last Friday evening. The Rev. Gordon Salmon read an interesting paper on "Fruit Trees," and very fine fruit was sent by the following able cultivators:—Mr. G. Picker, Hesslewood, Hull; Mr. C. Lawton, Welton House, Brough; Mr. D. Williams, Duncombe Park; Mr. J. Allsopp, Dalton Hall, Hull; Mr. G. Harris, Alnwick Castle; Mr. Wrazzel, Bishopthorpe Palace; Mr. J. McIndoe, Hutton Hall, Guisborough; Mr. G. Taylor, Byram Hall, Pontefract; Mr. J. Hornby, Heslington Hall; Mr. Macintosh, North Riding Asylum; the Rev. Gordon Salmon, Overton Vicarage; Messrs. Backhouse & Sons, York; Mr. Everard, Holgate Lodge; and Messrs. G. Bunyard & Co., Maidstone.

—— Hessle Gardeners' Society.—A meeting of the above Society was held on Tuesday, October 19th, in the Parish School, Mr. Geo. Picker, Hesslewood, occupying the chair. The essayist for the evening was Mr. Garnett, St. John's Gardens, Wakefield, and the subject "Chrysanthemums." The Chairman, when introducing the essayist to the company, stated to what an extent Mr. Garnett was acquainted with Chrysanthemums, both in the capacity of grower and judge. The essayist took for his base the ripening process, and pointed out the complications caused by having over-ripe and under-ripe growths, also the difficulties the northern growers have to contend with to obtain the "happy" medium. At the close of the essay a discussion took place, and the number of questions asked showed that he had indeed fallen upon a hotbed of Chrysanthemum growers. The Chairman had some good blooms on the table, the varieties being Mrs. Hume Long, Phœbus, Boule d'Or, Emily Silsbury, Lady Byron, Baron Hirsch, and Mons. R. Bahuant. Mr. Blakey showed plants of Odontoglossum crispum and Cattleya labiata in flower. The meeting was the largest the Society has had, and this no doubt was caused by the subject and the essayist being so popular. The Secretary reported having received subscriptions from several gentlemen in the locality. A vote of thanks to the essayist terminated a very pleasant evening.—G. W. G.

—— Death of the Rev. C. S. P. Parish.—The death of this gentleman occurred recently at his residence, Roughmoor, Somerset, at the age of seventy-five years. The deceased was much interested in botany and Orchids. A Vanda, a Cypripedium, and other Orchids bear his name.

—— The Royal Gardens, Kew.—Messrs. Mackenzie and Moncur, Ltd., have been entrusted by H.M. Board of Works with the erection of a large temperate house in Kew Gardens. The house is to be constructed with iron girders, and teak sashes and sashbars. The carrying out of the contract will take about a year.

—— The Maidstone Nurseries.—Messrs. George Bunyard and Co. desire us to state that visitors can safely inspect their nurseries, as they are on high ground, two miles from the town, and in no way connected therewith by drainage or water supply. Upwards of a dozen medical officers certify that in their opinion the fever has been altogether due to the drinking of contaminated water, and that there is no possible danger to persons visiting the town. One of our representatives is looking forward with pleasure to a visit to the nurseries, near Barming Station, on the London, Chatham, and Dover Railway.

—— Railway Accidents or Negligence.—I had ten boxes of plants in pots down recently. Two of these boxes had been dropped, or something heavy put on them, and two-thirds of the pots and plants were smashed and rendered unsaleable. I made a claim on the Company, which they disallowed, on the ground that they were carried at owner's risk. Surely this does not permit of damage from carelessness?—St. Julien Arabin. [We always thought that railway companies were responsible for damage resulting from the negligence or carelessness of their officials. Possibly some of our readers may be able to give information on the subject.]

—— Birmingham Gardeners' Association.—The inaugural meeting of the autumn session took place on the 18th inst. at the Athletic Institute, Mr. W. B. Latham, the Botanical Gardens, Edgbaston, in the chair. Prizes in the shape of valuable and appropriate books were offered for collections of dried native wild flowers. The only contributor was Mr. C. Raffil, a student in the Botanical Gardens. The collection was a very good representative one, and comprised upwards of sixty species. Mr. C. R. Bick, gardener to Walter Chamberlain, Esq., contributed several freshly gathered wild flowers and autumn berries, including hipped sprays of various wild Roses. Mr. W. Gardiner (the Librarian) also brought a few species of wild flowers. On the 1st of November Mr. John Pope, King's Norton Nurseries, is appointed to give a lecture upon his tour in the Pyrenees last spring.

—— Literary Styles.—It may be, perhaps, that I am too old with the pen, for I have been a correspondent with gardening literature for thirty years, that I cannot get down to the level of "A Traveller's" intellect. Life is too short and work too serious to fit me to play the funny man. I daresay there are readers as well as writers who think that style clever and smart. I aspire not to be regarded as either, but to be solid, sensible, and I hope, too, honest. I have closely scanned the writings of the young men who have availed themselves of the "Young Gardeners' Domain," and have been pleased to see an entire absence of what is regarded as smartness. All honour to them. I trust they will stick to that suitable and excellent style. By doing so they will secure the respect and approval of their elders. When I cannot longer write matter that may be of practical service to horticulture I will lay aside my pen.—A. D.

—— Isle of Wight.—The first annual meeting of the East Cowes Horticultural Improvement Society was held last week, Capt. Harvey presiding. The Society has made satisfactory progress, having at present over one hundred members. Excellent papers have been read by Messrs. C. Martin, H. Cogger, J. Merritt, W. Tribbick, D. Sheath, A. Saunders, J. Jackman, J. Hygate, J. Barnes, and J. Broadwater on gardening subjects, whilst the County Horticultural Instructor (Mr. S. Heaton) gave a series of six lectures. Visits have been paid during the summer to the gardens of Messrs. J. S. White, J. Lee-White, and A. Hills, which proved interesting and instructive. A library has been established for the benefit of the members, and is receiving excellent support. After all expenses are paid there is a balance of £4 1s. 7d. in hand. In addition to a strong Committee, Messrs. A. Hills (Hon. Sec.), and C. Martin (Hon. Treasurer), have rendered great help towards the success of the Society. After a few sharp frosts, just sufficient to cut off the Dahlias in most places and give a littery appearance to gardens, we have a return of very mild and calm weather with sunshine, to make the very birds think by their song summer still remains. Ah! we are told "it is a weather breeder."—S. H.

—— Norfolk County Council.—Mr. G. Miller, market gardener, Wisbech, has been appointed to succeed the late Mr. Woodcock as lecturer on horticulture for the Norfolk County Council. We are informed that Mr. Miller has been a successful temperance lecturer in the county for several years.

—— Rudbeckia Golden Glow.—Allow me to correct an error I made about this through not being well up in nursery fancy names. I have since seen that "Golden Glow" refers to Rudbeckia laciniata flore-pleno, not to the plant I described, which has been called in nurseries "Autumn Glory," as I see by Barr's catalogue.—C. Wolley-Dod.

—— The Master of the Rolls.—The elevation of Lord Justice Lindley to the Mastership of the Rolls has been hailed with general satisfaction among the legal profession. It will interest horticulturists to know that Sir Nathaniel Lindley is one of the proprietors of "The Gardeners' Chronicle," of which well-known periodical his father was the first editor. The fame of Dr. John Lindley as a botanist and scientific lecturer on horticulture is still fresh in the recollection of the old generation, and from the distinction achieved by his son it is evident that the fine logical faculties exhibited by the father have lost nothing in transmission to the esteemed successor of the popular Lord Esher.

—— Extension of Business.—We are informed that the well known business of Mr. Andrew Potter, London Works, Reading, will henceforth be carried on under the name of "Potter, Hawthorn & Co." It has been found necessary, owing to the rapid increase in the business, to take in Mr. Hawthorn, who has been many years with Mr. Potter. It will be carried on under the personal supervision of them both, and they hope now to be able to give much quicker delivery than hitherto, especially when the additions to their already fine works have been completed. We may mention that their horticultural and poultry house branch has considerably exceeded their expectations, and they hope shortly to have the largest works of this kind in the South of England.

—— Death of Mr. W. A. Stiles.—It is with much regret that we have to record the death of Mr. W. A. Stiles, who has been the editor of the "Garden and Forest" since the inception of that publication some ten years ago. He passed away in Jersey City on the 6th inst. His personality was to be seen in the pages of the paper he edited week by week, and his own contributions on subjects in which he was interested were full of force, sound sense, and logic. In concluding an announcement of his death, our contemporary says:—"His death is a serious loss to the readers of 'Garden and Forest,' and to everyone in the United States interested in landscape gardening, horticulture, and the care and protection of our national and state forests. To this city (New York) at this particular time of his death is a great misfortune, for it leaves it without its most intelligent and powerful champion in the constantly recurring fight between the people and the would-be spoilers of their parks. Of his life-long devotion to those nearest to him by blood, untiring in its constancy and tenderness, we must not speak here; nor can we trust ourselves to speak of the faithful friend and associate tried by the test of long years of intimate relations, the wise counsellor and the joyous companion. Men who knew William A. Stiles loved him, and to them his memory will be immortal."

CHANGE OR DECAY.

Our "Traveller" trips lightly from page to page and man to man, giving each a gentle touch as he passes along. He seems to say in his tempting way, "Now can't you and won't you defend your own craft, and give me another text for dilation on the modern doctrine of mutual admiration?" His last journey must, I think, have been a pleasant, if not a profitable one; for he seems to be in wonderfully good humour with everybody, and especially with himself. True, he speaks of the "swell gardeners who hob-nob together at shows," but this not because of anything approaching a vindictive spirit, but simply born of a desire to compliment the masses. Still, it is rather a curious way to set about the task of proving that gardening is decaying; but then travellers, we all know, have ways of their own.

No trade or profession can be decaying when each year shows a wonderful increase in the number of those engaged in the work, and in the value of the produce it yields. One might as well argue that England is going to the dogs because its old aristocracy is yearly becoming poorer. It only shows that wealth is passing from the hands of one class to those of another. It is just the same with gardening. The fine old establishments are in many cases being broken up, but so many moderate sized and small ones are springing into existence, that the volume of good gardening is largely increasing.

We may not find good all-round gardening in so many places as formerly, but that is because their owners do not require many things that were formerly much prized, but in many cases prefer specialities to be made of certain things; and present-day gardeners—like the sensible men that they are—grow such things far better than they were grown a quarter of a century ago. Grapes, Peaches, Apples, Pears, grand plants in small pots, are now grown thoroughly well in a greater percentage of gardens than formerly.

When "Traveller" comes to what he terms "the decorations question" he asks quite a volley of questions, some of which have no bearing whatever upon the point at issue. My former position will be made quite clear, in fact unassailable, if I now state explicitly that, when I took charge of a garden, such as one that has been referred to, exactly the same number of hands were employed as in after years when there were no reductions whatever in the requirements in any direction, but a vast increase in the amount of decorative work required.

What a brilliant idea it was on the part of a "Traveller" to cull two lines from different parts of my former article, and then leave me to reconcile the apparently irreconcilable. I can do it quite easily, my travelling critic. Gardening is not decaying, but only changing in form. There may be evidence of deterioration in some places and in some phases of the grand old art, but the improvements and expansions in other directions overbalance the decadence a hundredfold.—Chrysanthemum Lover.

As the discussion on the alleged decadence in gardening has been very interesting, good humouredly personal, and in some ways useful; and as it has greatly enlivened your pages, and also been the means of bringing out some very practical cultural notes from correspondents who may be said to be new to us, I do not think you will begrudge the space taken up. The discussion has travelled over a good deal of ground, from "the decadence of gardening" and its suggested causes, "excessive floral decoration in flower garden and mansion," "commercial gardening," to "wall-fruit tree neglect, and consequent mismanagement, or no management," to "mutual admiration cliques," to "Mum worship and worshippers," to "youthful styles of writing,' and a few other items, but all and chiefly settling down to the charge of "A Traveller," that there is a general decay of gardening.

To that, as one nearing fast the threescore years and ten, with fifty years of practical gardening to quote from, with its fifty years of close observation and study of gardening in all its phases, with its fair acquaintance with the literature of gardening, and some personal knowledge of the men who have made their mark in the profession, and one who has taken a deep interest in the doings of young gardeners, and watched them very closely all that time, I say emphatically, "No; gardening in its widest aspect is not decaying!" That gardening is altering in its procedure and manifestations, I at once say, Yes, it is; but then it is but in that following out the great law of Nature—change, and is another confirmation of the inflexible law of evolution; one stage of the profession's life succeeding the other, and each stage differing from the last.

On change duration is founded; and though we who are getting older and slower and more conservative, if not prejudiced, in our ideas, do not take kindly to these new and advancing thoughts and ways, and lament with Sir Bedivere in "The Passing of Arthur," that—

> "The days darken round me, and the years,
> Among new men, strange faces, other minds,"

yet the wisdom, looking on both sides, which comes with years teaches us that these things are inevitable, and that it is our duty to make up our minds to them, and give cheerful and kindly welcome to those who are to take our places before long. Certain it is that if the new generation of gardeners has many in it like "H. D." (behind which initials we most of us know is one of the best and cleverest practical gardeners of the present day), we may be quite sure that gardening will never decay.

One word more, and I close this note. A correspondent who noticed my previous article seemed to think that I regretted the introduction of noblemen and gentlemen into the ranks of market gardeners. I assure him I do not. The inference I hoped would be drawn was, that the noblemen and gentlemen, with no rent to pay, and lightly assessed land, putting themselves into competition with the heavily rented and assessed professional market gardener, would very severely injure the humbler producer; that, though they might have been selling produce for some time, it was somewhat new that they should publicly proclaim themselves as fruiterers, dairymen, and market gardeners generally. I rejoice, and greatly rejoice, at any extension of the gardening profession in whatsoever way; more especially so in the extension of fruit growing which has gone on, and is going on, with leaps and bounds, thereby advancing our profession, and providing more food for the people. What we require in all our work in the present day is a greater respect for the opinions of each other, more thoughtful patience, and an increasing readiness to lay hold of every idea and practice which will bring out anything and everything to promote the betterment of gardening and gardeners.—An Old Provincial.

[While admitting the ability that has been displayed, both in friendly attack and defence, by the several correspondents who have taken part in the literary tournament on the subject in question, we are inclined to think, if a vote could be taken on the point, that the palm would be given to the oldest of them all—"An Old Provincial." His firm clear penmanship, with taste and accuracy in expression, are acquirements to be envied by many younger men, while his matured thought and expansive mind add weight to his observations. With this example of "nearly threescore years and ten,' a gardener in harness, who can dig as well as he can write, what ought not our modern braves to do? We shall shortly have a few words to say on the subject that has been so fully discussed, and in view of Chrysanthemum time, perhaps hoist the flag of truce.]

LOWDHAM AND CHILWELL.

UNFAMILIAR and familiar will be the above names to the majority of Journal readers, all of whom are acquainted with Chilwell. But Lowdham is new to the horticultural world, though ere many years have passed it will be known as a home of fruit trees and Roses. For upwards of a century the firm of J. R. Pearson & Sons has made its headquarters at Chilwell, and it has ever been renowned for the high quality of its stocks of plants and fruits as well as for the urbanity and probity of its owners. Last week both the new and the old establishments were visited with a view to getting notes for the *Journal of Horticulture*, and at each centre there was abundance of material to examine and about which to write. It is proposed, however, before dealing with each place separately, to give a brief paragraph of the two together, and then to turn first to the new and then to the older nurseries for more extended details.

Though fruit trees have been grown and sent broadcast over the country from Chilwell for many years, the output has developed within the last twenty years to an enormous extent. Some years ago the nurseries were stocked with all kinds of trees and shrubs, but these have been gradually crowded out, until the fruits practically reigned supreme. This meant that there was an area of 50 acres under fruit, and every yard of the ground was occupied. But with the growth of years ran concurrently the extension of trade, and of late it has been impossible to grow sufficiently large stocks of several of the most popular varieties of the various kinds of fruits. The heads of the firm realised that something would have to be done to overcome the difficulty. At the time this decision was arrived at the landlord quietly informed them that he was raising the rent 20 per cent. This did not exactly meet with approval, and to overcome that landlord the new ground was purchased at Lowdham.

It has been said that the Chilwell area comprised 50 acres. Remembering, then, that the extent of this was far too limited, the purchase at Lowdham of just double that number strikes one as showing a combination of judgment and enterprise. Further than this there is abundance of land adjoining that can either be rented or purchased as necessity may arise, which is practically certain to come as the years roll on and the trade advances still more. Each planting season brings increased orders to our great fruit nurserymen, and there is no reason to suppose there will be any decrease in the future. There still remain many hundreds of thousands of old, worn-out trees that must be displaced, and the same fate awaits the thousands of worthless local varieties which are found in all quarters of the country. Growers are realising that trees of the two types quoted do not pay for the space they occupy—not even the rent of the ground they cumber; and are planting young healthy stock of the most approved varieties of all kinds of fruits.

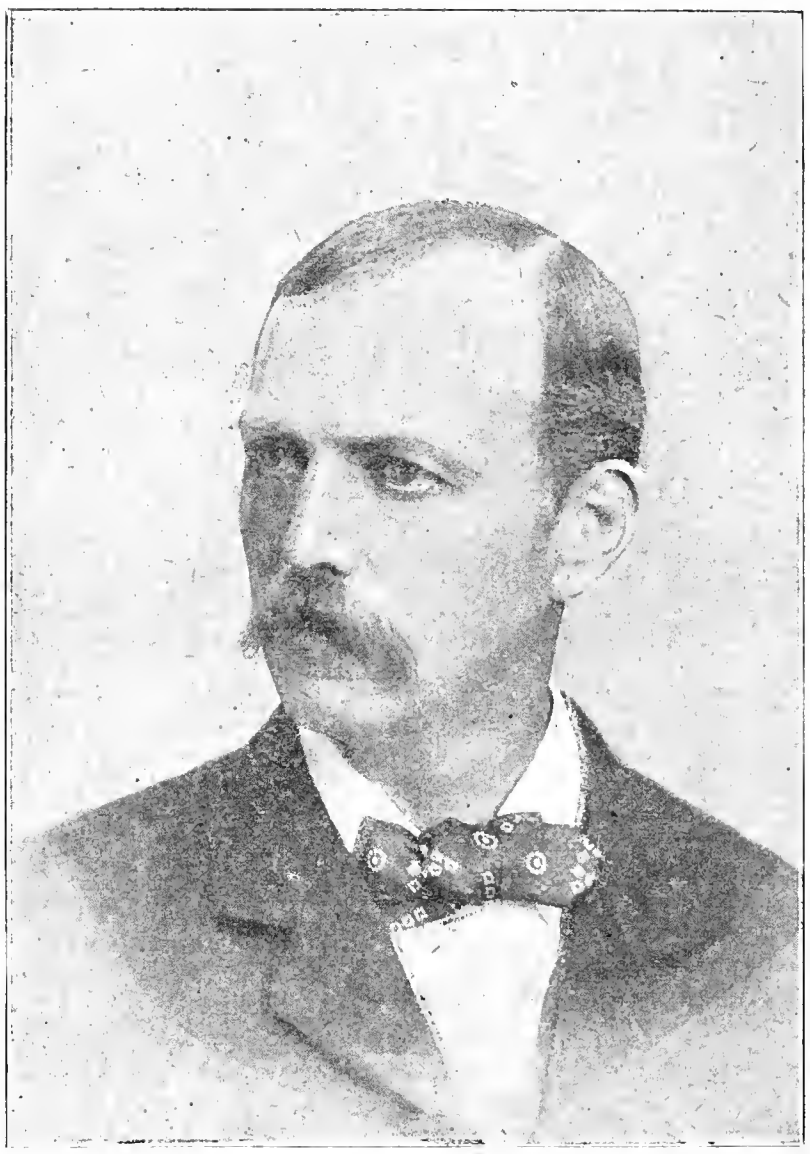

FIG. 61.—MR. ALFRED H. PEARSON.

LOWDHAM.

To speak now particularly of the new nursery we have to journey from Chilwell through Nottingham to a distance of six miles, or about twelve miles from the home establishment. It is quite in the country, and in this respect differs from the old nursery, which is in close proximity to two large towns besides Nottingham—namely, Beeston and Long Eaton. The Lowdham gardens are really in two portions, one of which is within three minutes of the station of the same name on the Midland Railway, and the other about ten minutes easy walking. Trains run with fair frequency, so that the place will have the distinct advantage of being easily accessible to those persons who may wish to personally select their trees. The small piece of ground referred to as being near the station has not yet been touched for planting, though it has been ascertained that there is a great depth of fine soil underlying the turf with which the surface has been covered for years. Here the offices and packing sheds will be erected.

On the more extensive area a considerable amount of work has been carried out, large portions of the ground having been cultivated, and several acres planted. The ground is undulating over the whole surface, distinctly hilly in places, and, needless to say, the soil varies widely, though it is all good. Almost the whole of the farm has been under pasture for scores of years. Perhaps the major portion of the staple is a sound holding loam, while there are besides large stretches of lighter loam, with several acres of an alluvial deposit. In only a narrow strip across a corner of one field is the soil less than 2 feet in depth, but in several instances 5 feet is found. It has been chosen by the expert, Mr. Alfred H. Pearson, in collaboration with Mr. Charles E. Pearson, who are the leading lights of the firm of J. R. Pearson & Sons. Of the first named, who is the fruit man, we have the pleasure of presenting, in fig 61, an admirable likeness, from a photograph by Messrs. A. Cox & Co., Nottingham.

In the selection of a proper site there was no haste, no jumping at conclusions. Miles of country were traversed, and every point in the surroundings of each place that might have any bearing on successful fruit culture was weighed to a nicety. The results must be gratifying indeed, for land has been secured, than which no better could be desired for fruit trees. It naturally requires cultivation, and anyone who is familiar with Mr. Pearson's methods knows that it will be given. The steam cultivator has been at work, and there has been no skimming of the surface, but a deep grip and a heavy turn-over. To insure the men doing good work, Mr. Pearson has spent many days riding up and down fields on the cultivator, only resting to partake of a *table d'hôte* lunch under a hedge or behind a smother. It is to be hoped that the *al fresco* life was enjoyed, and proved in all respects beneficial.

It is now just eighteen months since the work was initiated, and already many acres are under fruit and Roses, and the cultivation does not cease with the planting. In February of this year hoeing was commenced, greatly to the astonishment of the natives, who, in Mr. Pearson's own words, "thought I had gone mad," and we might add that it is a great pity other growers do not have similar attacks of madness, for there are method, sense, and reason in it. Then every acre has a little dressing of horse droppings applied as a mulch at the rate of between 50 and 60 tons to the acre. The effects of last autumn's mulching, and the early hoeing, are plainly seen, for, despite the dry weather, the plants grew and thrived, simply because the rains of the winter had carried food down to the roots, while the dusty surface soil had prevented waste of it by rapid evaporation. In places here and there a spade was pushed down into the soil and sunk easily to a depth of two blades.

We passed quarter after quarter stocked with trees, and everywhere there was the same uniform excellence. Some lifting had been done, and the trees had come up with large masses of fibrous roots almost on a level with the surface of the soil. By the way, immediately a tree is lifted the roots are securely covered with a mat so that they may not be exposed to the drying influences of the air, and they are kept covered until the packing stage is reached. Another excellent method of procedure that is worthy of universal adoption. The more the roots become shrivelled by exposure to the atmosphere the greater the prejudice against successful replanting. At Lowdham there are no aged trees, but there are maidens and espalier trees in thousands, as well as the various stocks that are utilised for working. All alike are in the best condition, and augur well for the success of the new nursery. Large quarters are to be planted this season, and if the present rate of stocking be maintained there will be very little unoccupied ground two years hence.

It is fortunate that there are several barns and outbuildings attached to the Lowdham homestead, but good cottages for the workmen were at a minimum. It has always been a practice of this firm to look well after its workpeople, and to this end four capital cottages are already erected, and more are in contemplation, so that the men will eventually be comfortably housed. That the employés appreciate these acts is proved by the length of time with which they stay with the firm, for there are now several who have served upwards of forty years, the record being held by one man with an unbroken service of sixty-four years. This veteran looked active, and ready for any amount of work. That the men like the treatment given to them is proved by an anecdote of the late Mr. J. R. Pearson and one of his men, who was employed for over seventy years in and about the nursery. Unfortunately he used to break out occasionally, and was promptly discharged. The following morning, however, always found him at work again, and remonstrance was wasted on him, for if his employer said anything the response would be to the effect that if Mr. Pearson did not know when he had a good man he knew when he had a good master, and he was not going to leave.

CHILWELL.

But let us return to see the fruit at Chilwell. The difference between the ground at the present moment and its condition some years ago when a visit was made was remarkable. Then the whole of the land was closely occupied, while now several acres are innocent of stock, owing to the removal in rapid progress. But that high standard of quality with which we were first impressed remains still. There is a beautiful cleanliness of wood and leaves, simply because preventive measures against pests are always taken. The energies of the trees must not be sapped by foes, either insect or fungoid. All forms of trees of all kinds of fruits are grown at Chilwell and Lowdham, but the best are the trained trees—Apples, Pears, and Plums as espaliers, with Peaches, Nectarines, Apricots, and Cherries in fan form—and the pyramids. Mr. Alfred Pearson commenced the culture of trained trees rather less than twenty years ago, and took the greatest pride in them. Every year they have in training his personal supervision—not given in any perfunctory

FIG. 62.—CHRYSANTHEMUM MADAME G. BRUANT.

manner either—with the result that, taken as a whole, a finer lot of examples of the best culture could not be wished for by anyone.

Last season 22,000 trees were trained in espalier and fan shapes, and this season this number has been exceeded. No better testimony than this can be needed as to the excellence of the trees when it is remembered that it is the result of less than twenty years' efforts. Pearson's trained trees are acknowledged as being in the front rank, and there they will stay. The pyramids, too, are models, while double grafted Pear standards are magnificent. Apples, Plums, Damsons, in fact all fruits, are there in various forms. Of some varieties, such as the grand Newton Wonder Apple, the numbers are nothing short of remarkable, but those that are known to be lacking in quality are not grown. As with the large fruits, so with the small. There are Gooseberries, Currants, and Raspberries in thousands, and again both in the form of bushes and trained, and all good. Weeds are not appreciated at Chilwell any more than they are at Lowdham, and very few were noticed in the tour round the whole of the quarters. Soon Chilwell as a fruit nursery will be almost a thing of the past, but Lowdham follows as the healthy offspring of a sturdy parent, and will, it is anticipated, more than maintain the best traditions of the firm.

Under Glass at Chilwell.

When one is at Chilwell and wishes to see any flowers other than outdoor Roses, one will have to leave Mr. A. H. Pearson for either Mr. Charles or Mr. Duncan Pearson. If Daffodils are the object of the visit, the latter will be the guide, for of these, with seeds and Dutch bulbs, he has made a speciality. For other things it is Mr. Charles who is the guiding star. No one would, of course, think of visiting at this time of year without looking at the Chrysanthemums, and these we examined until the necessity of striking matches to see a bloom warned us it was time to stop. But before this stage was reached we had seen many varieties, including the twice honoured Madame G. Bruant, which received the award of merit of the Royal Horticultural Society and the first-class certificate of the National Chrysanthemum Society on October 12th, when it was shown by Messrs. J. R. Pearson & Sons. It is, as may be seen by a reference to the engraving (fig. 62), a large Japanese, of which the centre colour is silvery white and the extremities of the florets soft rosy mauve. The other varieties we cannot now name, but the collection comprises every new and old variety worth growing. The plants are in splendid condition, and denote the excellence of the cultural methods to which they are submitted.

First amongst the other collections of plants grown must be noted the Zonal Pelargoniums, which are making a grand display. Then there are fine Grapes hanging over huge banks of Maidenhair Fern, a long span-roofed house of Maréchal Niel Roses, hundreds of pots of graceful Asparagus, vigorous old plants of Stephanotis, with scores of others, besides the Orchids. For these the Chilwell nurseries are not very widely celebrated, but there are many good ones there thoroughly well grown. The collection of Chatsworth Cœlogyne cristata is amongst the best in the country, while other kinds are little inferior. It was only a brief glance we could give to the houses, and the references must be very short; but we look forward to visiting Lowdham and Chilwell in the summer of some coming year, when the notes must be more commensurate with the excellence of the glass department.—Metropolitan.

GRAPES SHANKING.

Shanking may be looked upon as an indication that the Vines are not in perfect health, although their general appearance might lead to an opposite opinion. Several reasons have recently been put forward as the cause of this most injurious and perplexing malady. As it is brought about from various and opposite causes it is one of the most difficult to deal with.

There appears to be a consensus of opinion that the fault rests with the composition of the border and the absence of food material from it. There can be no doubt that the chemical composition of the rooting medium has an important influence upon Vines and their fruit; but, at the same time, I hold that the mechanical condition plays an equally important part in the health of Vines and their immunity from disease. In some instances it may be absolutely necessary to have a complete renewal of soil, but in many cases it is a waste of labour and material.

Shanking is caused by the Vines receiving a check at a critical period of their growth, and such check, in the majority of cases, is brought about either by an excess or a deficiency of water in the soil in which the roots of affected Vines are established. Doubtless the evil may be attributed to other causes, such as too much or too little food material, but without water Vines cannot obtain the requisite minerals, and an excess of it causes injury to the roots. I have frequently noticed that in low-lying districts, where there is some difficulty in providing efficient drainage, and also in naturally well-drained situations, where the soil is of a light or sandy description, that shanking is most prevalent.

I can from experience bear testimony to the advantages to be derived by the renewal of Vine borders if they are properly and efficiently drained, but what constitutes efficient drainage in one case may not be so in another, although a somewhat similar one. I venture to state that if Vines were planted in good ordinary garden soil, under similar conditions to hardy fruit trees growing outside, that they would produce more satisfactory results than they do when the roots are confined to what is often comparable to a huge tank from which the air is partially excluded, causing the soil to become sour and inert.

It is an acknowledged fact that soil is improved by exposure to the atmosphere. We dig or trench our land in winter and cast it up roughly in order to expose as large a surface as possible to the pulverising influence of the atmosphere, which not only improves it in texture, but also renders soluble some of the valuable plant food that it contains. I do not suggest that Vine borders should be treated in this manner, but consider it would be beneficial to leave them exposed to the atmosphere.

There appears to be a wide-spread belief that the roots of Vines are very susceptible of injury by frost, hence the prevailing custom of covering outside borders with a heavy coating of decaying vegetable matter, which is injurious rather than beneficial. When the roots of Vines are established in well-made borders the soil with which they are covered will afford all the protection that is requisite. Cases could be cited in which Vines have been improved by increasing the supply of water to the roots, but still more could be quoted where they have been practically ruined by an excess of it.

Instances are frequently occurring in which, when there is a change of gardeners, the Vines fail to succeed during the first year or two under the new management. This may not be from any lack of knowledge of the requirements of Vines generally, but simply from failing to comprehend the conditions under which those taken charge of are growing and treating them accordingly. For example, a border composed of sandy soil and a large proportion of porous material would require more water than one with a heavier soil, which is more retentive of moisture, especially if the former were raised above the level of the surrounding land.

Judicious watering has a great deal to do with the health and growth of the Vine. When the wood is approaching maturity the supply may with advantage be diminished, but care must be exercisd never to allow the soil to become too dry, as in many instances the Vines suffer from an inadequate supply of water, injudiciously withheld for the purpose of hastening the maturation of the wood. It is most injurious to allow the soil to become quite dry, as such treatment causes the destruction of the fibrous roots, the consequences being ill-health and shanking.—W. Neild

PLANTING APPLES — LATE VARIETIES WANTED.

There can be no doubt that during the last ten years enormous numbers of fruit trees have been planted in the United Kingdom. On looking at the agricultural returns I find that the acreage under small fruit culture has been more than doubled during that period. There is, however, plenty of room for a still further extension in the matter of planting, for we have to provide for the wants of a rapidly increasing population, as well as to largely diminish the enormous quantities of fruit sent to us from other lands. We have also to take into consideration the number of old orchards still in existence, which will soon have to be destroyed because their owners will find that the worthless fruit they produce will not pay for growing now that many young orchards are coming into bearing, and proving what fine samples can be grown in this country when intelligent culture is pursued.

Fortunately, such fine fruit-growing counties as Kent, Herefordshire, and Worcestershire, have long been alive to the importance of fruit-growing, and began to plant in earnest a few years ago; but there are many counties in the Midlands which have not followed their example. In many parts of Warwickshire, situated away from the manufacturing centres, both soil and climate are favourable for fruit-growing. This can easily be seen by noting the fine crops produced in private gardens where good varieties have been planted and well cared for. This ought to urge farmers and landowners to take up the matter, seeing that the county is within easy reach of so many great manufacturing towns. I have met with a few good orchards in the county; none of them were, however, large, and in the majority of instances the trees are far from young. In December last I assisted in awarding the prizes in the fruit and vegetable classes at the Birmingham Agricultural Show. The grand Potatoes staged showed what the British farmer could do in that direction, but when we came to the two or three classes provided for fruit the state of affairs was not very satisfactory. In the larger class for a collection of Apples only one exhibit was staged; this, fortunately, being in every way a good one, showed conclusively that the little interest taken by farmers in fruit culture cannot be excused on the score of their having either an unsuitable climate or soil.

It is to be hoped, therefore, that fruit culture, as an adjunct to farming, will in the near future be taken up with as much spirit in the Midlands as it has already been in the Southern counties. The time for planting is now upon us, and, fortunately, an ample stock of fine trees can be obtained at home without having to draw—as in so many other instances—upon the ever-ready foreign supply.

When the planting of fruit trees is contemplated on either a large or small scale, Apples should, I think, come in for a large share of consideration. For, whether we look in the markets or in the fruit rooms of private gardens, we usually find the supply of good Apples is not too plentiful during March and April. Early and midseason Apples have been largely planted in many districts, but the late ones

have to a great extent been neglected. The planting of such fine late varieties as Yorkshire Greening, Lane's Prince Albert, Bramley's Seedling, and Dumelow's Seedling is therefore most desirable, and it is to be hoped that during the present season they and other good late sorts will have a larger share of attention than heretofore.

The selection of suitable varieties for different kinds of soil is one that is now receiving much attention, and intending planters will do well to make inquiries as to what varieties thrive in the soil of their district. In the light and rather poor soil found in many parts of Warwickshire Wyken Pippin, Hanwell Souring, Sturmer Pippin, Bramley's Seedling, Hoary Morning, and Bismarck may be taken as types which succeed admirably. With good deep culture and proper attention to feeding at the right time, almost any of the hardier varieties will succeed fairly well.

When preparing the soil for the formation of fruit plantations it ought, if possible, to be trenched to a depth of 2 feet; but if that expense cannot be incurred, holes 2 feet in depth and 4 feet in width should be prepared, and the soil at the bottom of the hole broken up as well. This amount of space will give the trees a good start, and if after three or four years the soil is broken up to the same depth as the station, a few feet beyond it, the first cost of tree planting will be lessened, and room for an extended root run provided at a capital time. Of course this refers to instances where small fruits are not planted as an under-crop. When this is done, the trenching of the whole ground is an absolute necessity if the best results are expected.

In dealing with heavy land, unless it is on a slope, draining must, of course, have attention; without it much splendid land is quite useless for fruit culture, which when well drained could be made to produce good trees and fruit of the finest quality. I should, however, never care to plant fruit trees in a heavy soil without first trenching and incorporating with it as much gritty matter as procurable—road scrapings, burnt refuse, coal ashes, and lime, or old mortar rubbish, all answer the purpose well. Prepared stations seem to form so many drains into which the water runs and stands for a long time. If such land were cultivated deeply for a few years, and employed for growing vegetables, it would, without doubt, be rendered more suitable for fruit culture.

Apple trees grown in the bush form are becoming more popular than ever, and when we consider their many advantages, it is somewhat surprising that tall standards should still be so largely planted in any position except on grass, where, of course, that form of tree may be termed a necessity. Bushes planted 12 feet apart, with small fruits grown between till the permanent trees require the whole space, is a method of arrangement I would follow in preference to all others. Having settled on the site of an orchard, prepared the ground, and marked out the stations with a stake, the digging of the holes must be attended to; but it is often good policy to defer this till a few weeks after the ground has been trenched, to allow the soil to settle. Then, when it is in good working order, the planting can be performed expeditiously.

After the thorough preparation previously spoken of, the soil need not be taken out to a great depth, but the holes should be wide enough to allow every root to be spread out at full length after the points have been cut with a sharp knife. In free working soil the roots near the stem should be slightly above the ground line, and be covered with 3 inches of soil, after working it well in between the fibrous roots, the whole being pressed moderately firm. When finished, there will be a slight mound, which will, in a few months, sink to the ground line.

On the other hand, when planting in heavy soil, many noted fruit growers plant almost on the surface, and heap the soil around the roots into the form of a mound from 9 to 12 inches in height. The soil about the roots is thus kept free from stagnant moisture, and the warmth of spring induces early and vigorous root action. This planting upon the surface and forming mounds around the roots is an excellent practice when well carried out, but it does not succeed if the mounds have only a small diameter, or are made with a very sharp slope, because the soil becomes extremely hard and dry during the summer, and in hot seasons prevents the trees from making much progress for a year or two after planting. We want to avoid going to extremes in either direction. Deep planting is the worst of all practices, but that is no reason why we should rush to the other extreme and plant on high narrow mounds, which become cold in winter and baked through in summer. Even in heavy land a slight rise of the soil above the ground line will insure freedom from stagnant moisture. If, therefore, we so arrange matters as to have the top of the mound about 9 inches above the ground level, give the mound a diameter of 4 or 5 feet, and carry it with a gentle slope from its apex to the ground line, we accomplish the object we have in view, without being led into other evils worse than those we are trying to avoid.

The importance of early planting is such that it cannot be too strongly urged upon the consideration of intending planters. While the land is still warm root wounds heal quickly, a callus is formed, and in some instances rootlets begin to grow at once; in other words, the underground branches are brought into a state of activity far in advance of those above ground. They take up and store food, ready for the time when the buds burst into leafy growth. Contrast this state of affairs with what happens when planting is deferred till late in the spring, when the buds are swelling. As soon as top growth begins the stored up sap is quickly used up, and until fresh rootlets are formed in fair quantities the growth is held in check if not entirely suspended. It is simply a case of starving in a land of plenty, for there is food in abundance in the soil, but the trees do not get it because of the absence of the "connecting link," active rootlets. Trees that are checked in growth in the way described are retarded almost a year in their progress. I like to defer the pruning of newly planted trees until the spring, just as the terminal buds are beginning to swell, as this practice seems to stimulate early sap circulation.

In a country like our own, where the population increases at the rate of nearly 3,000,000 in ten years, it is a fallacy to think the land will ever be less valuable than it is now. Every inch of fairly good agricultural land will pay for cultivating well, until we are able to supply—to a far greater extent than we do at present—the vegetable products required in this sea-girt isle.—H. D.

ROYAL HORTICULTURAL SOCIETY.

DRILL HALL.—OCTOBER 26TH.

THE meeting of the Committees of the Royal Horticultural Society at the Drill Hall on Tuesday was made the occasion of one of the most handsome displays of flowers that has been seen of late. Not only were exhibitors numerous, but visitors flocked in, so that despite the dull weather, the day was a doubly successful one. Each section was strongly represented. In the afternoon the Victoria Medals of Honour were presented to the recipients. Of this function a report will be found below.

FRUIT COMMITTEE.—Present: P. Crowley, Esq. (in the chair); with Messrs. T. Francis Rivers, George Bunyard, J. Cheal, William Crump, A. H. Pearson, A. F. Barron, W. Empson, Alex. Dean, James Veitch, W. Farr, W. Balderson, F. Q. Lane, James Smith, J. Willard, R. Fife, G. Wythes.

Messrs. J. Carter & Co., High Holborn, sent a collection of fresh clean Beets and a few Carrots. Several varieties were represented in good form. A magnificent collection of vegetables came from Messrs. H. Cannell & Sons, Swanley. Onions were grand, as were Carrots, Cabbages, Leeks, and Potatoes. Messrs. J. Laing & Sons, Forest Hill, sent ninety-two dishes of Apples and Pears. The fruits were clean and well coloured. Amongst Apples the most prominent were Lord Derby, Lane's Prince Albert, Stirling Castle, Hollandbury, Peasgood's Nonesuch, Emperor Alexander, Beauty of Kent, Gloria Mundi, and Sandringham. The best Pears were Beurré Clairgeau, Doyenné du Comice, Beurré Diel, Charles Ernest, and Glou Morçeau.

The Apples staged by Messrs. J. Cheal & Sons, Crawley, were conspicuous for their high colour and evenness. The Apples comprised Cox's Pomona, Mère de Ménage, The Queen, Peasgood's Nonesuch, Cellini, Bramley's Seedling, Bismarck, Warner's King, Jubilee, Annie Elizabeth, Stirling Castle, Atalanta, and Hawthornden. Some beautiful Pears also came from the same source. Messrs. Dobbie & Co., Rothesay, sent Parsley Dobbie's Selected, with Parsnips and Turnips.

Mr. W. Taylor, gardener to C. Bayer, Esq., Tewkesbury Lodge, Forest Hill, sent a handsome exhibit of Grapes, most of which were good in colour and finish, as well as in berry and bunch. The varieties comprised Foster's Seedling, Mrs. Pince, Gros Guillaume, Gros Colman, Muscat of Alexandria, Trebbiano, Lady Downe's, Alnwick Seedling, Black Hamburgh, and Alicante.

CLASSES FOR FLAVOUR.—Mr. C. Herrin received the first prize for Apples with Cox's Orange Pippin, and was followed by Mr. G. Woodward with American Mother. Col. Brymer was first for Pears with Doyenné du Comice, and Mr. G. Woodward second with Emile d'Heyst.

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair); with Messrs. Owen Thomas, John Laing, Chas. T. Druery, H. B. May, R. B. Lowe, E. Molyneux, George Glenny, Geo. Engleheart, James Hudson, J. Fraser, J. D. Pawle, Charles Jeffries, Herbert Cutbush, James Walker, Charles E. Pearson, Chas. E. Shea, George Gordon, Charles Blick, Harry Turner, George Paul, J. T. Bennett-Poë, H. Selfe Leonard, Geo. Nicholson, and D. B. Crane.

Mr. G. Wythes, gardener to Earl Percy, Syon House, Brentford, contributed handsomely towards the magnificent display of Chrysanthemums in the Hall. His blooms were not arranged on boards, but on long stems above a groundwork of Fern. The best varieties were—Charles Davis, Edwin Molyneux, Amos Perry, Mons. Chenon de Leché, Lago Maggiore, and Miss Elsie Teichman, with several incurved. Mr. W. J. Godfrey, Exmouth, arranged a splendid collection of Chrysanthemums, comprising all the standard as well as several newer varieties. The colours were clean and the blooms very fresh. Amongst the most noticeable were Simplicity, Antoinette, Mons. Delamotte, Lady Byron, Lady Ridgway, Mrs. G. W. Palmer, Geo. Gower, Topaze Orientale, Edith Tabor, King of the Yellows, Ella Curtis, Ma Perfection, and J. E. Lager.

A group of Chrysanthemums, margined with Carnations and Ferns, was staged by Mr. T. S. Ware, Hale Farm Nurseries, Tottenham. The plants were not carrying large flowers, but were clean and healthy.

Messrs. J. Veitch & Sons, Limited, Chelsea, sent an imposing group of Chrysanthemums. The healthy plants were splendidly flowered, the blooms being of good size and massiveness without being coarse. Such varieties as Mons. Chenon de Leché, Wm. Fyfe, W. Seward, Mrs. G. W. Palmer, Phœbus, Louise, Eva Prass, and Mutual Friend were conspicuous. Mr. W. Wells' exhibit of cut Chrysanthemums and plants was very fine. Grand flowers of Australie, Phœbus, Edith Tabor, Mrs. J. Lewis, Antoinette, Madame Desblanc, Thomas Wilkins, Surprise, G. J. Warren, Queen of the Earlies, and Madame Gustave Henry were seen.

Chrysanthemum blooms from Messrs. H. Cannell & Sons, Swanley, made a capital display. There were good examples of Iserette, Lady Byron, M. Massange de Louvrex, Madame G. Brunt, Dorothy Seward, Mrs. Hugh Gardener, Lady Ridgway, Australie, N.C.S. Jubilee, Madame G. Henry, Chas. Davis, Lady Hanham, Robert Powell, and Madame Bergier. Besides the large flowered varieties, the same firm sent singles in fine form. Messrs. W. Cutbush & Son, Highgate, arranged a miscellaneous group in which Chrysanthemums, Carnations, Palms, and Ferns were well utilised. Messrs. J. R. Pearson & Sons, Chilwell, exhibited three superb blooms of Chrysanthemum Mrs. G. W. Palmer.

Messrs. J. Laing & Son, Forest Hill, exhibited a collection of well grown foliage and flowering plants. Crotons were beautifully coloured, as were Dracænas. Besides these there were Begonias, Ericas, Bertolonias, Ferns, Palms, and Chrysanthemums. Mr. W. Fyfe, gardener to Lord Wantage, V.C., Lockinge Park, Wantage, sent flowers of Sunflower Beauty of Lockinge. Mr. H. B. May, Edmonton, sent finely grown plants of Begonia Gloire de Lorraine, interspersed with Ferns. H. J. Elwes, Esq., Colesbourne, Glos., staged a collection of seedling Nerines, amongst which were several charming varieties. Messrs. J. Veitch & Sons contributed hybrid Rhododendrons as well as plants of Begonia Gloire de Lorraine and Richardia Pentlandi.

Messrs. W. Paul & Son, Waltham Cross, sent a really beautiful collection of Roses cut from plants in the open ground. Many varieties were represented in excellent form.

ORCHID COMMITTEE.—Present: H. J. Veitch, Esq. (in the chair); with Messrs. H. Ballantine, W. H. White, Fred. J. Thorne, T. W. Bond, W. H. Young, E. Ashworth, H. J. Chapman, Henry Williams, James Douglas, S. Courtauld, D. B. Crawshay, H. M. Pollett, and A. H. Smee.

Messrs. J. Veitch & Sons, Limited, Chelsea, sent a magnificent display of Orchids. Not only was there quantity, but also quality. There were Cattleyas, Cypripediums, Oncidiums, and Dendrobiums, all finely represented. Messrs. H. Low & Co., Upper Clapton, sent some handsome examples of Vanda cœrulea, with a few other Orchids. Messrs. F. Sander & Co., St. Albans, sent Orchids conspicuous for their quality. Cattleyas were the main feature, but Cypripediums and others were also included. Thos. Statter, Esq., Stand Hall, sent the original Cattleya Hardyana, which was carrying three flowers.

A small group of Lælia præstans was staged by Messrs. W. L. Lewis and Co., Southgate, while Mr. W. J. Empson, gardener to Mrs. Wingfield, Ampthill, exhibited miscellaneous Orchids. There were finely grown and healthy plants of Cattleya labiata in variety, with Oncidiums and Cypripediums. Fred Hardy, Esq., Ashton-on-Mersey, sent some superb Cattleya aurea. Mr. G. Cragg, gardener to P. Walker, Esq., Winchmore Hill, sent Cattleyas and Odontoglossums in choice variety. Mr. H. J. Chapman, gardener to R. I. Measures, Esq., Camberwell, was splendidly represented by some excellently cultivated Orchids in considerable variety.

CERTIFICATES AND AWARDS OF MERIT.

Cattleya Melpomene (J. Veitch & Sons).—Soft rose is the colour of this hybrid. The fimbriated lip is very pale blush. The parents were C. Mendeli and C. Forbesi (award of merit).

Cattleya Olivia (J. Veitch & Sons).—A lovely hybrid resulting from a cross between C. intermedia and C. Trianæ. The colour of the sepals and petals is delicate blush, the outer portion of the lip being rose and the inner part cream (award of merit).

Cattleya Hardyana magnifica (J. Hardy).—One of the best Hardyanas that have been seen of late at the Drill Hall. In colour and size it is a marked advance on the type (award of merit).

Cattleya Bowringiana (R. Pallant).—A grand form of this comparatively well known Orchid (award of merit).

Chrysanthemum Simplicity (W. J. Godfrey).—A Japanese with drooping florets. The colour is pure white (award of merit).

Chrysanthemum Lady Ridgway (W. J. Godfrey).—An incurved Japanese of good build. The colour on the inner side is brick red, and the outside much paler (award of merit).

Chrysanthemum Modesto (W. J. Godfrey).—This handsome yellow is now well known (award of merit).

Chrysanthemum Madame Phillip Rivoire (W. J. Godfrey).—A handsome white, after the form of Souvenir de Petite Amie, but superior (award of merit).

Chrysanthemum Sunstone (W. J. Godfrey).—A Japanese. The colour is soft yellow and the shape good (award of merit).

Chrysanthemum Ella Curtis (W. J. Godfrey).—A superb yellow. The florets are of immense width and substance (award of merit).

Chrysanthemum Robert Powell (H. Cannell & Sons).—An incurved Japanese. The inner portion of the floret is light brownish red, and the reverse amber (award of merit).

Chrysanthemum Lady Hanham (H. Cannell & Sons).—A grand sport from Viviand Morel; the colour is soft rose (award of merit).

Chrysanthemum N.C.S. Jubilee (H. Cannell & Sons).—A charming incurved Japanese; the colour is silvery rose (award of merit).

Cypripedium Haynaldo Chamberlainianum (H. Holbrook).—A charming hybrid. The pouch is claret, the dorsal sepal white at the margins and green within, with chocolate spots. The petals are narrow, wavy, and green in colour, profusely marked with brown (award of merit).

Gesneria amabilis (P. Blair).—A handsome plant. The cream coloured flowers are very profusely borne (award of merit).

Grape Marchioness of Downshire (T. Bradshaw).—Said to be a cross between white Gros Colman and Muscat of Alexandria. The flavour is rather poor, but if, as is said, it hangs well when ripe, it should be useful (award of merit).

Lælia præstans albens (F. Hardy).—A very chaste form. Save for a patch of purplish maroon on each side lobe the colour is pure white (award of merit).

Lælia purpurata Mrs. R. I. Measures (H. J. Chapman).—A distinct and handsome form. The petals are delicately tinted with pink and white; the sepals are deep purplish rose, as is the lip (award of merit).

Lælia pumila magnificum (W. L. Lewis & Co.).—A superbly coloured form of the type (award of merit).

Melon Excelsior (G. Wythes).—A red deep fleshed Melon of handsome appearance. It is of medium size. The flavour is very good, especially for the time of year (award of merit).

Maranta Burkei (J. Veitch and Sons).—A graceful Fern. The leaves are much divided (first-class certificate).

Nerine Lady Bromley (H. J. Elwes).—The colours of this form a very peculiar combination. The outer portion of the segments is bright rose, and the central portion purple (award of merit).

Nerine Lady Ffolkes (H. J. Elwes).—Delicate salmon rose is the colour of this variety (award of merit).

Nerine Lady Lawrence (H. J. Elwes).—The colour of this is bright brick red (award of merit).

Nerine Countess of Bathurst (H. J. Elwes).—This variety is white, with bright rose in the centre of each segment (award of merit).

Nerine Lady Llewellyn (H. J. Elwes).—A deep crimson form of much beauty (award of merit).

Nerine Lady Mary Shelley (H. J. Elwes).—A good form. The colour is pale flesh pink hue (award of merit).

Nerine Lady Dorrington (H. J. Elwes). One of the best. The flower is bold, and the delicate rose colour effective. Down the centre of each segment is a bright rose line (award of merit).

Odontoglossum Sunlight (R. B. White). A lovely crispum. The brown spots make a very chaste flower (award of merit).

Turnip, Golden Ball (Dobbie & Co.).—A splendid yellow variety. The shape is perfect (award of merit).

Turnip, Model (Dobbie & Co.).—This is well known as a fine variety of the old Snowball (award of merit).

THE VICTORIA MEDALS OF HONOUR.

THE Victoria Medals of Honour, granted by the Council of the Royal Horticultural Society in celebration of her Majesty's Jubilee, were publicly distributed at the Drill Hall, Westminster, on Tuesday afternoon. Previous to the distribution the President (Sir Trevor Lawrence, Bart.) and the Council entertained the recipients of the honour, as well as a number of officers and friends of the Society, at luncheon at the Hotel Windsor, Victoria Street, S.W.

The loyal toast having been duly honoured, the PRESIDENT said: The Council found, early in this year, that there was a strong desire to do something on behalf of the Royal Horticultural Society to celebrate the sixty years of her Majesty's reign. Her Majesty has for many years been patroness of the Society, and many members of the Royal Family are Fellows of the Society; and as you all recollect, the Prince Consort was, for some years, President of the Society. Well, I think, if you will remember, gentlemen, that the Society was established in the very early years of this century; that it has, during a large part of a hundred years, presided over, and in a great measure directed, the gardening interests of this country, I think that, the Queen being patroness of our organisation, it was only becoming that the Society should do something to celebrate the very remarkable occasion of her Majesty's reign. (Applause.) If I were to enter into the question of the advances that have been made in horticulture, in the cultivation of fruit, and in the other branches of gardening during the reign, I should take up far too much of your time, and, in addition to that, these subjects have already been dealt with by persons far better able to deal with them than I can. Therefore I say that they must be blind indeed who do not see the enormous strides gardening has made in this country during the last sixty years; and not only is that so, but I venture to think that the strides that have been made illustrate the fact that horticultural gardening is by no means one of the pleasures of the rich alone. I remember perfectly well when I had the honour of representing a part of London, rather a poor part—Battersea, Wandsworth, and that neighbourhood—being very much struck with the care and trouble the people took with their window gardens and plants, and I venture to think that as great interest is taken in the humble gardening of the poorer people as in the gardens, the extensive gardens of wealthy people; in fact, it may be that a greater interest is taken. (Hear, hear.) Now perhaps it will be an exaggeration to say that gardening is the mother of the virtues; but at the same time I do think that one may say with perfect truth that there are very few pursuits and occupations which have so much good in them with as little admixture of evil. (Applause.) Well, gentlemen, when the question came as to what we were to do to celebrate her Majesty's Jubilee, I need scarcely say that the fertile brain of our Secretary had a suggestion to make. (Applause.) I do not mean to say that his brain was the only one which was fertile, far from it, but the fertility of his brain produced a more sturdy plant

than the fertility of the brains of others, and I think I may truly say that it was due to an inspiration of the Secretary that we took into consideration the proposal of establishing a Victoria Medal of Horticulture. Well, when that, and kindred projects were looked at all round, it became perfectly clear that our Secretary's suggestion was by far the best that came before us, and I was instructed to ask her Majesty's gracious permission to establish this medal. I daresay, gentlemen, you are aware that her Majesty scrupulously abstains at any time from taking any prominent share in any method of celebrating her Jubilee, but she graciously intimated to us her assent to our proposal, and expressed the opinion that there could be no possible objection to it. That being so, we decided to adopt the proposal which originated with our Secretary, and established the Victoria medal. Well, lady and gentlemen, I am very glad that we did. We have only two lady members. I wish that they were both present. (Applause.) I feel a sort of embarrassment in saying lady and gentlemen. One is so accustomed to say ladies and gentlemen that when you deal with the more commanding sex in the singular it becomes, to a certain extent, embarrassing. But, the medal being instituted to celebrate the Jubilee of her Gracious Majesty, nothing could be more becoming than that we should have some members of her sex as medallists. I do not think anything could show more conclusively that we did wisely in adopting the proposal that emanated from our Secretary than the gathering I see around me, where the relative departments of scientific and practical horticulture, including of course botany, are represented by many men of the greatest possible eminence, gathered round this table. I venture on behalf of the Society to thank them most heartily for their presence to-day. When the question arose as to who should be the recipients of these medals we thought that every department connected with the art and science of gardening should be represented. It may occur to some here present that there are names absent which they would like to see present. There may be perfectly good reasons why they are not there. In the first place, it would not have been at all becoming that the Council who had the selection should distribute medals among its own members. That was perfectly obvious. Then there are other reasons, lesser reasons, private reasons why various gentlemen who were invited to become recipients of the medal thought it their duty, however little might be their desire to forfeit it, to decline. That explains the absence of certain names. The present position is this. We have the honour of having among our medallists eight botanists. I take them first, as science, beyond all things, is the moving power of the world at the present time. Among these, and at the head of them, we have the distinguished botanist who sits on my right, Sir Joseph Hooker - (applause)—who, I venture to say, during his long life has done more valuable work for the advancement of botany than any one man has ever done. Then we have among collectors and hybridists six members. We have among the gardening profession and trade fourteen nurserymen and men engaged in business. We have two members who represent the market aspect of gardening; twenty-seven medallists who represent gardeners—fifteen amateurs and twelve gardeners by profession. Some people may very justly think the proportion ought to have been reversed. We have one landscape gardener and two members of the horticultural Press. I can assure you, gentlemen, that the greatest possible trouble was taken to award the medals to those who seemed most to deserve them in every department. I daresay we have made mistakes; that there are names omitted who ought to be included. Possibly there are names included that ought to have been omitted; but at the same time, it is through no lack of care. We did our very utmost, and we had the advantage of the advice of very competent advisers. We did our utmost to secure a thoroughly representative list of those connected with the art and science of gardening. There is only one other remark I wish to make—and it is due to her Gracious Majesty to say so—the Queen has no responsibility whatever, except to have been sufficiently gracious to have given her consent to the institution of this medal. It would be manifestly extremely distasteful to her Majesty if the medal were used under any circumstances for the purpose of advertising. (Hear, hear.) I am extremely grateful to the lady, and to the gentlemen here present for their being so kind as to be here to-day. It has been a very great pleasure to us to meet them, and if any little trouble has been taken in the matter we are fully requited for it by their presence here to-day. With this toast of the health of the Victoria medallists I beg to couple the names of Sir Joseph Hooker and of my friend Dean Hole, of Mr. Sherwood for the trade representatives, and Mr. Hudson for the gardeners. There is another observation which I desire to make in conclusion - namely, that the medal itself is the work of a lady, who I think has carried out a very graceful conception in a most satisfactory way. It is exceedingly difficult to put within the limits of a very small medal, as the Victorian medal is, any conception at all, and I think that when you see the medal you will agree with me that the lady—Miss Margaret Giles – who carried out the work has done it admirably.

The toast was warmly received, and Sir JOSEPH HOOKER thanked the Council on behalf of the recipients for the honour conferred upon them. There were some present whose claims to honour for services rendered in the cause of horticulture were greater than his own. (No! no!) There were those present who represented three generations of horticulture, men who had introduced more new plants than even Kew Gardens had done, and the fruits of whose labours were to be found in every garden all over the globe, from the garden of the prince to that of the peasant. He proudly accepted the position they had given him on account of his connection with the Royal Gardens of Kew. The objects of Kew were many and varied, and especially were they for the study of botany and economy. Those there were engaged in the production of new and rare plants—their classification, identification, description, and illustration; and what was more important than that, the propagation of useful and economic plants all over the world, for the welfare and benefit of mankind. But what would be the use of all that without practical horticulture? The gardens of Kew without horticulture would be a barren wilderness. Where would theoretical botany be without horticulture? Ask Darwin. Vegetable physiology would be a barren branch without it. Botany and practical horticulture must go hand in hand, and so long as they did both would prosper. He desired to tender, on behalf of his co-recipients, his scientific friends, and himself his warmest thanks for the honour conferred on him, and to express their deep sense of her Majesty's goodness in giving her name to the medal.

Dean HOLE also responded, and said he should always regard that day as one of the brightest of a long and happy life, so long that he thought he might claim the title coveted at Cambridge next to that of Senior Wrangler, and call himself senior medallist. If there were such a thing as righteous pride, and if it were even justifiable to put a little side on—(laughter) - he thought they gardeners had the right to adopt it that day. However, it was not pride which was uppermost in their thoughts, but a very humble thankfulness that they themselves had

FIG. 63.—THE VICTORIA MEDAL OF HONOUR.

not only been permitted to appreciate the purest of human pleasures, but that they had been allowed to communicate to others the methods and fruits of their success. The Society, with the aid of its unwearying Secretary, had done excellent work for a long time to promote the science of horticulture, and he believed that the institution of the Victoria Medal of Honour would prove to be a great encouragement and an important help in quickening the ambition and developing the qualities of those men who should excel hereafter in botanical science and in horticultural skill.

Mr. SHERWOOD thanked the President and Council on behalf of the members of the commercial and seed trade for their recognition of services rendered during the past sixty years. He had heard many express the opinion that the members of the Council of the Society ought to receive some recognition. He could only hope that some such recognition would take place. (Applause.)

Mr JAMES HUDSON returned thanks on behalf of gardeners generally, and congratulated the Society that they steered clear of the controversies which troubled so many other professions. He desired to cordially congratulate the President on the honour he had received from the Queen during the last few days – (applause) - for no one was more deserving.

Baron SCHRÖDER gave "The health of the President and Council of the Society." As an old retired member of the Council he had had a great deal of experience in the troubles and anxieties connected with the office of President of their great Society, therefore he felt that all honour was due to those gentlemen who had brought the Society to its present splendid position. When he was called to the Council they were located at South Kensington, where they had a large and lofty conservatory but a wretched Council chamber. At that time the Council was much divided. Some gentlemen were for continuing in the old room and seeing the Society gradually die, but others and at the head of them was Sir Trevor Lawrence – (applause) - were determined to face the position, and to believe that they were doing right in breaking with the old traditions. That was a grave step. They had many consultations altogether. They had no money and few friends, while the Society was going from bad to worse. However, they had a President who helped them, but while they were considering the advisability of leaving South Kensington they were turned out. (Laughter.) That was the darkest hour of their Society, but under their President's wise and careful management the Society had gradually prospered, and was now in a position such as was held by no other Society in the world. It was thought, he said, that they should have their own home – (applause)—but he was afraid that was past. It would have been a splendid speculation to have gone where he wanted them to go. He was sure that all agreed with him that their splendid Society should have its own home, as those in America and on the Continent had. Under the guidance of their good President, who had stuck to the old ship like a brave pilot, they would find a way to get such a home. The President had had wonderful tact in getting a good Secretary. (Applause.) It was the best day's work he ever did for the Society when he obtained the services of the Rev. William Wilks.

The toast having been responded to, the PRESIDENT thanked Baron Schröder for his kindly references, and said that it was largely owing to the Baron's hearty support that they were able to carry out the change of policy to which he had referred. It was the duty of a horticultural society to stick to horticulture, and from the moment their Council took up the position of devoting itself entirely to promoting the interests of horticulture, it had not looked back. They entertained strong feelings of gratitude to the amateur gardeners and professional

gardeners of the country for the great support they had given, and which was so well exemplified in the show at the Drill Hall. It was a beautiful and characteristic illustration. He desired to endorse what had been said with regard to the Secretary, who had done his work admirably, and at one period, notwithstanding very serious physical obstacles. He desired to quote the following passage from an article in the Journal :—"The Royal Horticultural Society has spent during the ninety-two years of its existence not less than £400,000. That it has made mistakes and wasted money its best friends will not deny, but it may confidently be asserted that it has done and is doing good work such as no other society could do—good work of great value to the community. The productions of the Society and the lessons it has taught have embellished the land and smiled on the visitor from every park and garden in the kingdom." So long as the Society stuck to that work it would have the very hearty and cordial support of the horticulturists of the kingdom. (Applause.)

The gathering then adjourned to the Drill Hall, where the President distributed the medals.

SEASONABLE HINTS ON FLORISTS' FLOWERS.

ALTHOUGH the seasons come round in their unvarying course, it does not follow that in our changeable climate the conditions are quite the same year after year, hence the directions for one season are not suitable for others. In 1896 we had during September and October a great quantity of very heavy rain, while in the present year October has hitherto been, and promises to continue, a very fine month, and to the florist above all others these conditions make a good deal of difference in his operations, for his being such very highly bred flowers they are more susceptible to the influence of cold and damp than the species from which they originated. It is the same way in the animal kingdom; the beautiful and highly bred Channel Islands cattle have a delicacy of constitution from which the more common kinds are free, and require, consequently, greater attention and care ; so that the florist must be prepared to find that he cannot grow his plants in any rough and ready way, but that they require the close attention which only he who loves them will give them. Take for example

AURICULAS.

I sometimes hear people say, "Oh, the Auricula ; yes, I have grown that for many years, and it is quite hardy ;" but when one comes to inquire it is found that the Auriculas to which the speaker alludes are either alpines or border varieties, and not the highly bred edged varieties which are the delight of the true Auricula lover. Woe be to the grower that tempts to cultivate these as if they could hold their own against the uncertainties of our winter months. The past season has been on the whole a good one for them. I have already given my estimate of the spring exhibitions. The flowers were late, and, consequently, the northern growers were not in the running, and so we had no new varieties about which to write. Everyone who grows the plant knows how difficult it is to obtain a good variety. It is not so with other flowers. Every season brings forth dozens of new Roses, while with regard to other flowers, such as the Gladiolus, Pelargoniums, Chrysanthemums, and others, we have to look through our lists and see what we have to get rid of; but in the Auricula we still cherish the old established favourites of thirty or forty years ago, and very few are the additions made to our lists.

I am afraid that the beautiful autumn weather we are having will stimulate them to throw up autumn blooms. Where this is the case they should be pinched off. The plants ought now to be in their winter quarters. I believe a pit to be the best place for them, for they are much more accessible, and there is no necessity, as when they are in frames, of lifting up the lights to look at them. All decaying foliage ought to be removed, and should there be an appearance of green fly it will be desirable to give them a slight smoking before shutting them up. Water should be given very sparingly for two reasons : the plants ought not to be stimulated, and watering may engender damp; and we must bear in mind that, however fine the weather may be now, we must be prepared for a spell of cold more or less severe, and so have mats or other material ready to cover them with when it comes.

CARNATIONS AND PICOTEES.

No two seasons can be more diverse as far as these flowers are concerned than 1896 and 1897. In the former even so experienced a cultivator as Mr. Turner of Slough had to complain of the difficulty of getting layers to root, while this year they have everywhere rooted most readily. The taste for what are called border Carnations seems to be on the increase. No doubt they are most effective in the open ground, and the improvement that has taken place in them is very marked; still it would be a sore thing for the beautiful flakes and bizarres and the delicately marked Picotees to be neglected.

The question of wintering these is a matter of some importance. There are those who advocate planting them in the autumn and left unprotected during the winter. This seems to me a risky proceeding. It may sometimes answer, but I have known even the old Clove to be killed by frost, and I therefore always recommend that they should be potted and kept in cold frames during the winter. If kept tolerably dry and given plenty of air I do not think that there is any fear of their contracting that fatal fungoid disease called spot, and then by the time they are ready to be planted out the pots will be full of roots. It is best to pot them singly, as the roots become less disturbed when they have to be placed in the beds. Now is the best time to obtain new varieties ; they are to be had from all nurserymen who cater for the florist, and lovers of the beautiful will not fail to include in their orders some of the fine yellow varieties raised by Mr. Douglas and others.

I can remember the time when three or four only of these were to be had, and they were difficult to keep. They were flowers, however, which were more in accord with the exacting demands of the florist than any of those of recent years. The same remark with regard to green fly applies to these, and frames or pits containing them should be fumigated. Old and experienced growers know this well, and take no little pains to remedy this evil, but novices are inclined to think a few green fly will do no harm ; this is, however, a mistake, and no pains ought to be grudged to get rid of the varmint.

GLADIOLUS.

It will now be time for the lifting and storing of these bulbs. For those who grow a named collection it is a troublesome process. Dry weather ought to be chosen for doing it, so that a large quantity of earth may not cling to the roots. It has been by some supposed that the varieties degenerate. This is not the case. The individual corm may do so, and after three or four seasons may not be worth much ; but they nearly all produce a quantity of spawn, and this, when taken care of, will be found to produce as good flowers as ever.

This was exemplified by the fine collection shown by Mr. Burrill at the Drill Hall in September, when a grand spike of Orphée, a variety which came out about thirty or forty years ago, was exhibited with fourteen splendid blooms. and therefore anyone who wishes to continue their stock or increase it had better take care of all the spawn, rubbing it carefully off the corms and putting it by carefully in paper bags until the spring. But what a long time, it may be said, we shall have to wait for flowers. Not so. The same authority informed me that many of the beautiful spikes shown by him were produced from corms not larger than a Cob nut, and this in their second year.

Care should be taken when the bulbs are taken up that they should be placed in a dry cool situation, where they will be free from frost, and where they can be looked at from time to time. This should be a favourable season for harvesting them, being so bright and dry. As usual, several new varieties have been exhibited, amongst them some of Child's American varieties, of which one has not formed a very favourable opinion. Several of the Lemoinei section have been exhibited in good form ; these may be left in the ground, and with slight protection of coal ashes or cocoa-nut fibre refuse, may pass through the winter unharmed.

PANSIES.

The past has been a more favourable season for them in the South of England, as they like both coolness and moisture, and for this reason they do so much better in the North of England and in Scotland than with us. The Fancy varieties are those most in favour ; their size and varied colouring give them a great advantage over what are called the Show varieties. In truth, if one wants to see these or the Violas, called by some by the absurd name of Tufted Pansies, they must go to Scotland. And these again are, at any rate with us, plants that cannot very well be left in beds during the winter ; they should now be placed in pots singly, if possible, and then in the spring they may be transferred into the pots in which they may flower.

PINKS.

An attempt is made to revive an interest in these in and about the metropolis, but I think it is doomed to failure. The fact is that there is so little variety amongst them that they will not suit the taste of the present day. Those, however, who grow them will now see to their being planted in beds. They will succeed in any good garden soil, and when planted should be firmly pressed in ; they may be planted about a foot apart. It is long, however, since I have seen in any amateur's garden a bed of these sweet and prettily marked flowers.

ROSES.

There will be several things to engage the attention of Rose growers at the present moment. He will look through his beds to see if there are any weak or sickly plants to cast out ; he will also see what varieties he may wish to discard and what new ones to add. There need be no hurry, however, in filling up the beds or in making new ones. The mild open weather of this autumn has kept the plants, especially the Teas, in full growth, and even in my small garden I can cut handfuls of these refined and beautiful flowers every day. If anyone is ignorant of the proper way of planting let them procure the little tractate issued by the National Rose Society, where they will find every detail carefully marked out for them.

There is evidently a tendency towards the growth of what are called garden Roses, and many perhaps will wish to add to their collections, but they must be careful to remember that many of them are summer-blooming Roses, In fact, for a continuance of blooming, there is no class so dependable as the Tea-scented Roses, although they lack the brilliancy which characterises some of the Hybrid Perpetuals, nor is their perfume comparable to that emitted by the darker coloured varieties of the Hybrid Perpetual class.—D., *Deal.*

A FINE EUCHARIS BLOOM.—I am sending you a scape of Eucharis amazonica, the second flower of which consists of a double row of segments, ten in all. I should like to know if similar instances occur. The bulbs were all repotted last spring.—GEO. WEEKES. [We have had similar examples sent to us from time to time. The bloom is very symmetrical, of great substance, and 4½ inches in diameter. There were nine blooms and buds on the scape, representing excellent cultivation.]

SILICO-FLUORIDES IN HORTICULTURE.

I HAVE no wish to discuss the opinions expressed by your correspondent in this matter, but perhaps you will allow me to hint that one grain of practical experience is usually equivalent to several tons of *à priori* argument. The use of silico-fluorides as germicides is at present unknown; the sooner it becomes well known the better, in my humble opinion, for horticulture and agriculture, and I shall be happy to assist in making it known. Soap must not be used with the silico-fluoride of ammonium. The silico-fluoride of ammonium does not roll up into globules even on freshly opened, glassy looking leaves. It is acid to litmus; but the saturated aqueous solution does not attack the leaves of plants. It is proper to use a very much weaker solution than that.—W. MILLS.

[By all means let the product be tried. Mr. Abbey appears to have tried it already, and his statement of its beading off a mealy phylloxera is embodied in a reply to a correspondent.]

DEATH OF MR. EDMUND J. BAILLIE, F.L.S.

ALL those of our readers who enjoyed the acquaintance of this gentleman, or came into contact with him at public meetings, will deeply lament his death, which occurred at his residence, Woodbine, Chester, on the 18th inst., at the early age of forty-six years. The deceased leaves a widow and ten children to mourn his loss. We learn from the "Cheshire Observer" that Mr. Baillie was educated at Tarvin, and on leaving school he spent a few years on his father s farm. Rather more than thirty years ago he entered the firm of Messrs. F. & A. Dickson & Sons, seed merchants and nurserymen, Eastgate Street, Chester. and his business career was most successful. He commenced as a junior in the correspondence department, the charge of the department eventually falling to his care and supervision. He was next appointed cashier and confidential adviser of the firm, and afterwards became a partner, and subsequently managing partner of the business. When the two firms of Dicksons were amalgamated, Mr. Baillie became deputy chairman and a managing director of Dicksons Limited. Since the death of Mr. Alfred Dickson he had been more intimately connected with the extensive nursery department.

By Mr Baillie's death Chester is much the poorer. His wide attainments, many-sidedness, and wonderful grasp of everything he took in hand, made him a man of whom any community might well be proud. A distinguished botanist, he was a Fellow of the Linnæan Society. For his services to the cause of natural science he was awarded the Kingsley Memorial medal. He was one of the prime movers in the formation of the Chester Paxton Society, and, a true lover of art, he practically initiated the Chester Guild of Arts and Crafts. Mr. Baillie was ever striving to popularise art. A Fellow of the Royal Horticultural Society, deceased on several occasions lectured before this body while articles on fruit culture frequently appeared from his prolific pen in various publications. He held strong views on the value of fruit as a food. As is well known, Mr. Baillie was an enthusiastic vegetarian, being one of the vice-presidents of the Vegetarian Society. He took an active part in the Vegetarian Conference in Chester two years ago, and it is a melancholy coincidence that the Society celebrated its Jubilee in Manchester on the very day of his death. What makes the circumstance infinitely sadder is that an interesting paper by Mr. Baillie himself was read at this gathering.

Mr. Baillie has on many occasions adorned the columns of the *Journal of Horticulture*, and especially a few years ago over the signature of "John Edmunds." A giant in stature, our friend was gentle as a child, and we join our Cheshire contemporary in its concluding paragraph —"Universally admired and respected, if ever anyone deserved the epitaph 'He had no enemies,' it is the late Mr. E. J. Baillie."

FRUITING YOUNG VINES.

CULTIVATING Vines from eyes and fruiting them their entire length the following year is, I think, a little out of the beaten track, especially with Vines that are to remain permanently. In January last year (1896) I inserted eyes of Black Hamburgh in thumb pots containing loam and a little sand, merely covering the eyes. When they had made about 5 inches of growth, and the roots were commencing to run round the pots and coil up a little, the Vines were shifted into 6-inch pots. They progressed favourably and were ready to plant in the border about the end of May.

Previous to that I prepared the border, drained it thoroughly, and had room for about 26 inches of good turfy loam. That, along with some wood ashes, lime rubbish, and a little crushed bones, made a suitable compost for the young Vines. As the border was made up I had two men at work with rammers beating down the turf as firmly as they possibly could. When all was finished I gave the border a good watering as the loam was rather dry.

The Vines were planted a few days afterwards, and grew rapidly, reaching the top of the 10 feet trellis by the end of July. The top was pinched off each Vine, and the laterals after they made three leaves were pinched also. About the first week in November the wood was as brown as a nut.

All the winter pruning that was required consisted in cutting back the laterals to the main rods. This year the Vines were allowed to start almost of their own accord. They broke very strongly, showing two and three bunches on each lateral. Their vigour induced me to leave twelve bunches on five of the rods, and fourteen bunches on two others. The Grapes finished well, the average weight per bunch being 2 lbs. The heavy crop seemed to have no bad effect on the Vines, as the wood is ripening well this autumn, and I am looking forward to similar results next year.—WM. K. PETTIGREW, *Hewell Grange Gardens, Worcestershire.*

[A very good beginning, and Mr. Pettigrew will oblige by reporting progress another year.]

THE YOUNG GARDENERS' DOMAIN.

THE MEANS AND MODES OF PROPAGATING PLANTS.

(*Continued from page* 226.)

HITHERTO we have been dealing with the means of propagation that Nature affords, but there are others in which Nature requires the aid of Art. One of these modes is propagation by layers, which consists in arresting the downward current or deposition of formative matter, which collects and forms a callus, from which roots issue. In this operation an upward slit is made half across a joint, and the part so cut is fixed in favourable soil, with the results above stated. This process is adopted with Pinks, Carnations, Roses, and many other plants. It is, however, an important operation, and should be neatly executed.

Choosing the suitable branch of a Carnation, for instance, remove all leaves below the joint selected. With a sharp knife make an incision in the under part of the branch a quarter of an inch below a joint, passing the blade upwards through the joint in a slanting direction to a quarter of an inch above, terminating as nearly as possible in the centre of the stem. The tip of the tongue thus made is cut off with a clean sharp knife, and the layer pegged down an inch deep in fine soil. In the case of Carnations the plant is in a fit state for the operation as soon as the flowering season is over. No stem which has already produced flowers should be employed for the purpose.

In the case of Roses and other shrubby plants, all that is required is to run the knife through a joint sufficiently to make an opening near it, and affix it with a peg 3 inches below the surface of the soil, leaving that part above the soil as erect as possible. When roots are produced freely the layer may be separated from the parent and planted out.

From the middle of July to the middle of August is a good time for layering Ivy, Jasmine, the Wistaria, and many other plants of the same kind. Ivy will take root readily if merely pegged down; but it will root more quickly if a notch or slit be made at the joint and buried under the surface of the soil. Jasmine should be cut partly through a joint when laid down for propagation. The wound intercepts the flow of the sap backwards to the root, and the accumulation forms a callus from which roots issue.

Propagation by means of slips or cuttings is applied to almost every description of plant, but especially to those which refuse to ripen their seed with us, or which are many years in attaining maturity, as in the case of ordinary fruit trees. To be successful in the operation the cuttings should be made just at the point where the wood of last year's growth terminates and that of the current year begins. It should be removed with a clean, sharp, sloping cut just below a bud. Different kinds of cuttings require different management, and no hard and fast rule can be laid down for all.

Silver sand is the best medium in which to root small cuttings. A light, free soil, through which the air can pass freely, yet moisture being also present, is essential to the well-being of all cuttings. That aëration is necessary is proved by the fact that cuttings root freely in cocoa-nut fibre refuse, a material which is extremely pervious to air, and retains moisture for a considerable period. Powdered charcoal also forms a good medium.—C. W. M.

FIGS UNDER GLASS.

(*Continued from page* 395.)

WHEN the fruits are about the size of shelled Walnuts they may be observed to stand still for about a fortnight; this is when the tiny seeds are forming, corresponding with the stoning period of Peaches. On no account maintain high temperatures just then, or the fruits may drop instead of swelling. Other causes of this misfortune are immature wood and cold draughts in early spring. As soon, however, as the fruits are seen to be on the move again everything should be done to encourage the fruits to swell. The temperature may be raised 5°, the syringe used thoroughly and dexterously twice daily, especially on the under sides of the leaves, and the roots supplied with liquid manure and a light mulch. At closing time damp the floors with liquid manure to give off ammonia to strengthen the leaves and to improve the trees generally. Admit air with discretion, leaving a chink open all night to allow the ammonia to pass off before morning, or a scorch may result.

When the fruits commence ripening less water will be required at the roots, and liquid manure should be withheld altogether. Syringing must be discontinued, also the afternoon and late dampings. Much more air will be required to improve the flavour of the fruit, while a very gentle heat in the pipes will dispel damp. During the fruiting season when an opportunity presents itself the ripe fruit should be gathered closely, and the trees given a good syringing with clean rain water on a bright morning to keep red spider in check, which is sure to make its appearance to a more or less degree.

All growths for next year's fruiting should be laid in full length; others may be stopped at about the sixth leaf, and these will produce the second crop of fruit, which will mature in about two months.

When Figs are gathered they should be handled by the footstalk whenever this is practicable, as being very soft they are easily disfigured and made unfit for table or exhibition. For packing Figs we find nothing better than the leaves of the Runner Bean, their own leaves being rough are quite unsuitable for it.

The standard variety grown in England is Brown Turkey, being a sure cropper; fruits of medium size and very luscious. A good large variety is Negro Largo. As its name implies, it is nearly black, of handsome appearance, but inferior in flavour to Brown Turkey. For outdoor culture Brunswiek is an exeellent variety, eoming into use in September. —YOUNGSTER.

FRUIT FORCING.

Vines.—*Earliest Vines in Pots.*—Many lovers of Grapes do not appreciate the thick-skinned varieties, and desire thin-skinned Grapes at all times. In that case it is better to take the early supply from Vines in pots than to start the permanently planted Vines at a very early period. Vines in pots produce fruit little inferior to that borne by others planted out, and often superior to that produced by those having the roots in inside borders, and always better than when the borders are wholly outside. Suecess in early forcing is more certain where there is convenience for affording bottom heat, the canes being sufficiently strong, thoroughly ripened, and duly rested. The materials for affording bottom heat, such as tree leaves and stable litter, should be in course of preparation. The heat to begin with must not exceed 65° about the pots, augmenting it by bringing up the fermenting materials to the level of the pots by degrees, so as to raise the temperature to 70° to 75° when the Vines are in leaf. We advise the pots to be stood on pillars of loose bricks. Let the Vines be suspended over the fermenting materials in an horizontal position to induce the buds to break evenly. Sprinkle the canes three times a day, and damp every part of the house at the same time in bright weather. In order to induce regularity of starting a somewhat higher temperature is necessary at this period than later in the season, 50° to 55° at night, and 60° to 65° by day is not too high to begin with. The Vines to have fruit ripe in April must be started early in November.

Early Forced Planted-out Vines.—Those for affording fruit at the end of April or early in May should be set to work about the middle of November, not later. Thoroughly moisten, but not saturate to soddenness, the inside border at a temperature of 90°, and in the ease of weakly Vines supply liquid manure. This enriches the soil, even conducing to a good break by the imperceptible ferment taking place in the soil and by increasing the supply of food. If the border or floor of the house is covered with leaves and litter in a state of fermentation, occasionally turning the material and adding fresh, the moisture and warmth, also the ammonia-eharged atmosphere, are very beneficial to the Vines, and make a considerable differenee in the fuel used. The outside border must have a covering of leaves, with some litter or fern sloping from the house outwards, and thus throw off some rain as well as exclude frost. No roots can work in frozen soil. Fermenting material is not indispensable for placing on outside borders, but the warmth is a great aid in keeping the roots active and near the surface. Outside borders, however, are great mistakes for Vines that are forced early year after year.

Vines for Starting in December.—Prepare the Vines and house for active service at the time named, which is the latest to have Muscats ripe early in June and the early varieties in May. Prune the Vines directly the leaves have fallen, as it contributes to early and complete rest. In pruning two buds are mostly sufficient to leave for affording compact bunches of Grapes. Longer pruning may be practised when the Vines are wanted to give fewer and larger bunches, for it does not answer to allow as many large bunches on a Vine as of medium sized. Large bunches are, as a rule, loose, irregular in size of berry, and do not finish satisfactorily. Medium sized bunehes are more regular in form and size of berry and finish well. If the eyes at the base of the shoots are not plump three eyes may be left, but this requires frequent renewal of the spurs. The Vines should be stripped of loose bark, in fact all that can be removed without stripping them to the live bark, and be washed with a tepid softsoap solution, 2 ozs. softsoap to a gallon of water. That is all that is necessary where the Vines are free from insects, and where there has not been mealy bug, scale, red spider or thrips, but for these use a solution of caustic soda and commereial potash (pearlash), 2 ozs. each to 1½ gallon of hot water, applying with a brush at a temperature of 130° to 140°. It kills both hibernating pests and eggs.

If troubled with fungous pests in previous season use a solution of sulphate of iron 1 lb. to 1 gallon of water, applying cold with a brush; but do not use both, the latter sufficing for both fungi and insects. The woodwork must be thoroughly cleansed, if necessary painted, and the walls limewashed, adding a handful of flowers of sulphur to each pailful of limewash. Remove the surface soil down to the roots, and supply fresh lumpy loam with a 9-inch potful of bonemeal. Though a somewhat dry condition of the roots is desirable, the border must not be allowed to become parched and cracked, affording water if necessary, but not saturating the soil to the extent of making it sodden. Keep the house cool, admitting air freely except when frost prevails. If the house is occupied with plants employ fire heat only to exclude frost.

Vines Ripening the Wood.—Vines not yet ripe in the wood, the foliage being quite green and the wood not brown, should have the laterals closely pinched, bringing them down by degrees to the principal buds, which will have a tendency to promote rest by admitting more light and restricting the root action, especially if air is admitted freely at night, the house being kept rather warm, but not elose, by day, as that would have a tendency to induce growth. When growth in the laterals has been checked the shoots may be shortened to a few leaves above the pruning buds. This will assist the basal buds to plump and the wood to ripen, a genial warmth being kept in the pipes and air freely admitted.

Houses of Ripe Grapes.—A temperature of about 50° artificially is most suitable, Muscat of Alexandria being the better if 5° more, losing no opportunity of giving air when the days are fine, turning on the heat in the morning so as to cause a genial warmth in the pipes, and so expel damp, turning off the heat at midday, or soon after, so as to allow the pipes to cool, and the temperature at night not to be kept above 50°, even for Muscats, and 5° less for other varieties, or even less on cold nights; but a slight warmth in the pipes will prevent the deposition of moisture on the berries and prevent "spot," inasmuch as the moisture is condensed on the glass instead of the Grapes. A low night temperature causes the moisture present in the air to be rapidly condensed on the Grapes in the early part of a fine day, when the heat is not turned on early and air admitted, the sun heating the atmosphere much quicker than the Grapes. This must not be overlooked, and during the prevalenee of dull weather it will be necessary to keep a gentle warmth in the pipes, the ventilators elosed; yet there will be a circulation of air, causing the moisture to settle on the glass, thereby preserving the Grapes from damp. Excess of dryness or of heat will, however, cause the Grapes to shrivel; hence the question is air—the prevention of moisture settling on the berries.

Pines.—Only sufficient heat need be employed to sustain the plants in health and maintain the progress made. They should be placed as near the glass as possible. This will enable them to make the most of every ray of light and sunshine whenever it prevails. Though the plants may not perceptibly grow they store essential matter in spells of bright weather, and become stouter where due attention is given in keeping the glass clean, and admitting air whenever favourable conditions arise. The sturdy plant throws up a well-formed fruit in due season, but the drawn weakly plant, though apparently larger in leaf, furnishes a much smaller fruit on a lanky stem at an uncertain and irregular time. Therefore to give plants the benefit of clean glass and proximity to it without touching is to grow with a view to fruit, and to keep them at a considerable distance from the glass and crowded or beneath glass more or less opaque through dirt, with a concomitant moister atmosphere, is to produce foliage instead of fruit.

Fermenting Beds.—The materials subside considerably through decomposition, and fresh made up beds settle rapidly unless well trodden down. In either case prompt attention should be given to raising the plants so that they have full benefit of the light, and in so doing take care not to chill or allow them to become overheated at the roots. New beds should be made where necessary. The best plan is to remove all the plants to a structure with the suitable temperature, clear out the old fermenting material, supply fresh, and not return the plants until the beds are in a proper condition. To take plants out of a warm house and then in a cold place chills them, and returning to warm beds from cooler quarters acts in the opposite direction, sometimes causing them to "bolt"—that is, throw up fruit prematurely. Oak, Beech, and Spanish Chestnut leaves are much the best, as they are more durable than others, and the heat is consequently milder and lasts longer. Tan is the most serviceable where it can be easily procured, and about half the quantity suffices, but leaves in many cases may be secured for nothing beyond the labour.

THE FLOWER GARDEN.

Tuberous Begonias.—These plants are in most places left in the beds and borders till frosts cut down the tops. It is a great mistake to wholly clear the tubers of soil. Enough to fairly hide them should be left on each, this keeping some of the fleshy roots alive, a stronger and sure growth of shoots resulting next spring accordingly. Expose the Begonias as much as possible to all the sunshine and air going; stages and dry beds in borders in freely ventilated vineries being good places for them till the tops are sufficiently dried and decayed to admit of their being cleanly separated from the tubers. Pack them closely together in shallow boxes. If the tubers have been cleared of earth these should be surrounded by some fresh fine dry soil, but those not so cleared need none of the latter. Tuberous Begonias keep admirably in a dry, warm cellar, and failing this convenience store them in a shed or cool room, taking care to provide a sufficiently heavy covering of mats to exclude frosts. The tubers are far from being hardy, and on the other hand a very warm, dry position may cause their loss by dry rot. Those in pots may be turned out, partly cleared of soil, and wintered as advised in the case of those dug from the beds; or they may be stored on their sides under a staging in greenhouse where moisture does not reach them. Late-raised plants left thickly in pans or boxes should be kept cool and dry, and the tops when decayed be cleared off them; but the tiny tubers should remain where they are till next spring. They can be grown into strong plants before bedding-out time comes round again.

Dahlias.—These should now be cut down, leaving 9 inches length of stem, the labels being securely attached to this. The tubers should be lightly cleared of soil and laid on their sides in a covered shed for a few

days for any moisture there may be to drain out of the stems. Pack the tubers closely together, distributing fine soil among them, where they will be safe from frost. Under a greenhouse stage is not the proper place, the moisture constantly falling about them either rotting or causing the tubers to start prematurely into growth. Moderately warm sheds and outhouses best suit them, a cool dry cellar being a still better storing place.

Other Flower Roots.—Many of the Gladioli, notably the commoner G. brenchleyensis, are fairly hardy, and frequently winter well in the open ground, while the G. Colvillei should certainly not be disturbed. The rest ought not to be lifted before the tops have lost their greenness, and after these have been shortened and the corms thoroughly harvested store them in boxes of sand, where frost cannot reach them. The cormlets often found clustering round the old ones should be taken care of, as these would develop into flowering stuff in the course of one or two seasons. Store them in sand. The tuberous-rooted Salvia patens should be treated similarly to Dahlias

Fuchsias.—These are rightly fast becoming popular in the flower garden, as they relieve the stiffness of ordinary bedding plants. This season they have grown rather more strongly than usual, and many of the plants were flowering very freely when the frosts intervened. Where they were kept in pots and plunged deeply there need not be much difficulty in keeping a portion or all of the stock through the winter. All that is necessary is to keep them in a cool dry house, and to gradually withhold water so as to keep the wood plump. Any lifted and potted will require to be more carefully dried off. Numbers of Fuchsias are annually lost owing to being badly injured by frosts before being housed. While resting unheated sheds and outhouses are too cold for them, but they keep well in vineries and fairly well on their sides under greenhouse stages, only just enough water being given to keep the wood plump. Standard Fuchsias are very effective, and can either be grown from quite young plants or obtained by trimming off the lower branches of some of the roughest of the pyramids in the spring.

THE KITCHEN GARDEN.

Asparagus.—At this time of year the Asparagus beds usually present an untidy appearance, but not till the tops are brown ought they to be cut down. In this condition they are no longer of any service to the roots and crowns, and may be removed 4 inches or so above the soil, taken away and burnt. If any seeds are wanted hang up selected growths covered with berries in a cool dry shed till next spring, when the seed can be easily cleaned. The surface of the beds and alleys should be cleared of weeds and left in a neat condition. The old plan of raking or forking off the surface soil nearly or quite down to the roots, returning it to the top of a liberal dressing of "fat" manure, answers well where the soil is of a free working, somewhat hungry, nature, but there should be no shaving off the sides of the beds and robbing the alleys of soil for covering the manure, as this has a destructive effect upon the roots of the outer rows of Asparagus. When the soil to a considerable depth happens to be of a clayey, retentive nature, this is already unfavourable to the growth of Asparagus, and to heavily dress it with manure aggravates the evil. Severe frost is less injurious to Asparagus than a cold saturated rooting medium in which the roots sometimes perish wholesale. There ought, then, to be no top-dressing the beds if the soil is naturally heavy and cold. Clean them and defer manuring till next spring.

Brussels Sprouts.—Where abundance of rain fell in August last, Brussels Sprouts are excessively strong, those disposed somewhat thickly literally smothering each other. Most of the lower leaves are fast turning yellow, a strong smell denoting early decay. All in this condition ought to be removed to a heap where they can be converted into good manure, but do not heedlessly strip off any that are fresh and green. They may be the means of saving the stems from being injured by frost. Nor ought the tops to be cut, as these protect and foster the growth of late supplies of sprouts.

Broccoli and Cauliflower.—A good supply of early Broccoli and late Cauliflowers is always appreciated in November and December. No reliance can be placed upon unprotected plants, as they will not stand nearly so much frost as will late Broccoli. Those nearly fit for use should be covered with leaves taken from old stumps already cut over, and have their own leaves further tied together over the hearts, in which condition they will keep white, clean, and sound. A portion of those with hearts about the size of cricket balls must also be protected, while the rest, together with all not so far advanced, may well be lifted and stored where they can be protected from severe frost. For convenience of moving and replanting, snap off quite the oldest lower leaves, and save a little soil about the roots. Deep rough frames, brick pits, and pits in empty vineries, are good positions for storing. Bed the plants in rather closely, firmly surrounding the roots with rich moist soil. Covering them with poor dry soil would be quite a mistake. Better wholly cover with manure than that, because unless the plants have something to root strongly into, the hearts they produce are small and poor in quality. Keep the roots well supplied with moisture, and protect the plants from frost. Fully developed Broccoli and Cauliflower will keep some time embedded in moist soil in sheds. Remove all decaying leaves.

Parsley.—Extra strong early raised plants are frequently the first to suffer injury from frost, the later sowings possessing more vitality. None can wholly be depended upon, and unless the precaution of storing Parsley under glass is taken a serious gap in the supply may be the consequence. Whether a few or many plants are stored should depend upon the nature of the demand for Parsley. Three or four lights in a brick pit filled with plants are none too much in some gardens; in others two or three large, moderately deep boxes would hold enough. The plan of closely filling 12-inch pots with plants is also a good one, as they are not much in the way, and can be readily shifted about. Strong plants are the best for storing, and these ought to be lifted carefully, so as not to break their Carrot-like root. Trim off the outer already discoloured leaves, and sink the roots to their full depth in rich, loamy soil, arranging the plants thickly. They may be arranged in pits, frames, vineries, Peach houses, or greenhouses, genial warmth acting beneficially after the new year has commenced.

Storing Roots.—Parsnips, Salsafy, Scorzonera, and Jerusalem Artichokes keep best in the ground where grown, but when severe frost may reasonably be anticipated some of each should be lifted and stored in sand or fine soil, where they can be got at when the ground is too hard frozen for digging. Heavily mulching some of the rows or breadths with strawy litter would answer the same purpose, as it must be a very severe frost that will make the ground hard under 1 foot depth of litter. Late-sown Carrots should also be left where they are, as the roots keep sweeter and more tender in the ground and continue growing whenever the weather is mild. The main crop of Carrots ought now to be taken up and stored. Beet keeps well in clamps, covering with straw and soil. Turnips fit for storing are somewhat scarce this season, and most dependance will have to be placed upon late breadths. Where plentiful a portion of the crop may be stored similarly to Potatoes. Chicory roots are hardy, but if a portion of the crop is lifted and stored similarly to Carrots they will be ready for introducing into a Mushroom house or other warm dark place at intervals of a week or rather more.

Rhubarb for Forcing.—Not till frost has reached the roots, or an enforced rest has been otherwise brought about, does Rhubarb force readily. The plan of lifting the clumps and leaving them exposed to all weathers for about three weeks prior to introducing them into heat answers well. They start into growth stronger and more quickly for this check.

THE BEE-KEEPER.

Lecturers on Bee-keeping.

A correspondent says, "the old brimstone system still prevails in spite of lectures on bees and technical education." But are not lecturers often to blame for this state of things? I am induced to ask this question from what has come under my own observation. Not many weeks ago I attended a lecture on bee-keeping in a country district, which was given in the hope of stirring up a greater interest in bee-keeping in that part of the country, which had fallen off very much of late years.

The lecturer doubtless understood the management of bees, but failed to explain some of the simple rules necessary to make bee-keeping a success. He said, "In driving bees, it was only necessary to place three stocks of driven bees together. The bees would kill off all the queens but one." No explanation was given of the advantage of having a young queen which should have been selected from the old stock that had swarmed, or from a cast or second swarm, and the queens from all first swarms killed off by the operator. The bee-keeper may then have confidentially looked forward to another year without the risk of his bees being headed by an old worn-out queen, which would probably be the case if his instructions were carried out.

In illustrating the management of bees in straw skeps, no mention was made or instructions given how to obtain sections when placed on supers on the top of the skep; some of the best sections in colour, weight, and finish were obtained from a flat-topped skep. In speaking of the profit to be derived from bee-keeping, honey was debited at a shilling a pound, and "as the bees would consume 20 lbs. of honey to make 1 lb. of wax, it was a decided advantage to purchase comb foundation at 2s. 6d. per lb." It is certainly a great assistance to the bees to provide them with foundation, but I think 10 lbs. of honey is as much as the bees will consume to make 1 lbs. of wax in comb building; a shilling per pound for honey is altogether a fancy price where one has it in bulk to dispose of.

Disappointments in Bee-keeping.

It is discouraging to bee-keepers, after hearing a glowing account of the profits to be derived from this source, to find on making a practical test they have much to learn, if the advice is followed as given by the lecturer from which the above notes were taken. In the first place the whole success of a colony of bees depends on the queen being hardy and prolific. If the queen is old she will probably die just at the time she is most needed, and if the bees are all kept in straw skeps it is just as easy to have all the colonies headed by young queens, as it would be if they were in the moveable frame hive, and it is also practical to obtain a surplus from them by storing in supers as stated above, instead of depending on the honey stored in the brood combs.

Again, as to the price of honey. If sold in the trade to sell again a lower figure is obtained than would be expected from the consumer,

but showing the fancy prices that are sometimes obtained I may mention the fact that during the past season a dealer sold over 800 lbs. of honey in sections at 1s. 9d. per lb., the bee-keeper obtaining 9s. per dozen for the sections which were glazed. This is an exceptional case, and such prices can only be obtained in districts much visited by tourists. It, however, shows the prices that may sometimes be procured by shrewd men of business, but is no criterion to the general value of honey in the country.

To avoid disappointments in the management of bees and in selling honey, it is advisable in the former instance to commence with only a few stocks, which may be increased as experience is gained, and in the latter case to always supply a good sample of honey; if inferior feed it back to the bees. By this means a good reputation will be gained, and although prices may be low, if the right advice is obtained bee-keeping will be a success, although the seasons may not be all good for honey production.

Flowers for Bees.

The autumn frosts have not come as early as usual, and at the present time the garden is still gay with flowers; but as a sharp frost may come at any time, it is advisable to make preparations for planting the spring flowers that are suitable for the bees either for pollen or honey production. Some of these are among the most beautiful of the hardy flowers grown in our gardens. Wallflowers, which are favourites with the majority of people on account of their showy appearance whilst in bloom, and also for their perfume, should be planted in quantity, as during the time they are in bloom they are much visited by the bees, being good pollen-producing plants. Honey is also obtained from this source, but only in sufficient quantity for the bees' daily requirements.

Arabis alpina blooms freely in early spring, and is much frequented by the bees. It may be planted in any open position, forming an edging to the beds. It looks best planted in masses, and as a rockwork plant it is unsurpassed. Limnanthes Douglasi is a perfect bee flower, and is usually called the "Bee Plant," owing to the bees being so fond of it whilst in bloom. It is a dwarf plant, only growing a few inches in height, and makes a good edging plant for borders. It does not bloom until April, when flowers are becoming somewhat plentiful. The bees, though, will work on this in preference to any other.

Mead.

A correspondent desires particulars for making mead. The best that has come under my notice was made from a recipe given by the Rev. G. W. Bancks, Dartford. Mr. Bancks having devoted much attention to this subject for the benefit of bee-keepers at large, I can confidently recommend his recipe to the favourable notice of readers. It is now published in pamphlet form, which may be obtained from the above address.—An English Bee-keeper.

TO CORRESPONDENTS

All correspondence relating to editorial matters should, until further notice, be directed to "The Editor," **8, Rose Hill Road, Wandsworth, London, S.W.**, and **NOT** to Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Autumn Tints in Winter (*J. B.*).—A lady from London informs you that she "has frequently seen in the month of January, in London houses, branches of our native deciduous trees with leaves attached and the autumn tints on them, placed in large vases." You ask if these are artificial, or if there is some way of preserving the leaves? A number of these decorations are artificial, though we have heard that others are not, but that the process of preservation is a trade secret. The case is stated on the possibility of some of our readers being able to give information on the subject.

Bones for Vine Border (*Bryn*).—We presume the bones are mostly free from fatty matter and flesh, being such as generally collected by rag and bone gatherers, in which case they answer well—at least, we found similar do so, they being smashed in our case with a heavy hammer on an old anvil, and cost not more than half the price you name, including bones and smashing by hand. They answered even better than crushed, but they were old and dry. It is the fatty matter that makes bones injurious to Vines, as this dissolves very slowly, and proves deleterious by the acid reaction. If clean, use them; if greasy and fleshy, either boil them to remove this, or reject them.

Mina lobata (*L. F. F.*).—This plant was originally introduced from Mexico in 1841, but it either died out or for a long period was so exceedingly scarce as to be practically unknown to the majority of cultivators. A few years since, however, it was re-introduced, and has since become generally grown. It is a half-hardy annual plant, and therefore dies on the approach of frost. Propagation is effected by sowing seeds in February or March, placing them in a pot or pan filled with light sandy soil, and put in a warm greenhouse, stove, or frame on a hothed. When the young seedlings are about 3 inches high transfer them singly to small pots and grow in an ordinary greenhouse until the first week in June, when plant them out against a south wall as you did last spring.

Fruit Trees for Cool House (*W. H.*).—Two good early Peaches for back wall:—Alexander (to come in about three weeks before Hale's Early, which you have) and Dymond (to follow Hale's Early). Two good late Peaches (in addition to Royal George and Barrington) for back wall:—Bellegarde and Sea Eagle. Six late Peaches for growing in pots:—Belle Bauce, Gladstone, Desse Tardive, Late Admirable, Lady Palmerston, and Golden Eagle. Three late Nectarines for growing in pots:—Dryden, Pine Apple, and Victoria. Six dessert Pears for growing in pots:—Souvenir du Congrès, Beurré Superfin, Louise Bonne of Jersey, Doyenné du Comice, Glou Morçean, Josephine de Malines, or, if you want a larger, Marie Benoist. Six dessert Apples for growing in pots:—Red Astrachan, Washington, American Mother, Cox's Orange Pippin, Melon Apple, and Northern Spy.

Cyclamen Infested at the Roots by Grubs (*W. C.*).—The grubs are the larvæ of the grooved or black Vine weevil, Otiorhynchus sulcatus. The grubs are very tenacious of life, and do not die for some considerable time after solutions of nitrate of soda and kainit have acted upon them, nor, indeed, by any substance at a safe strength to use for the plants. We do not know of any preventive other than catching the beetles and sterilising the soil before use by treating it with boiling water. This answers well enough if the parent has already deposited eggs, but sometimes they are not laid until after repotting, and, being commonly at the base of the corms, the eggs may be there even at the time of repotting, as the old soil is not wholly removed in most cases. The use of freshly ground hellebore powder, 1 oz. to a gallon of hot water, applied at a temperature of 130° to 135°, has given good results, and mustard dross in the same proportion has also proved satisfactory as far as regards the destruction of the pests, but a too free use of the dross injures the plants. Eucharis mite killer acts very decisively on the pests, and does not injure the corms or roots, only follow the instructions carefully.

Diseased Double White Primulas (*Double Primula*).—The plant was badly attacked by the brown spot fungus (Ovularia interstitialis, syn. Peronospora interstitialis). The leaves attacked turn yellow and then brown, eventually decaying. In your plant the parasite had spread down the stem and literally eaten the hearts out of the plants. The stem below ground was perfectly sound, showing the nature of the disease to be from above downwards. We can advise nothing but cutting the parts away, burning these, also any plants not having sound centres. Then dust the parts remaining with anti-blight or fostite, and the disease may not spread: it certainly would not have got so far if this had been used instead of flowers of sulphur. The plants have been kept too close and too moist. They needed more air, or at least a drier atmosphere and close proximity to the glass, with a genial warmth—conditions under which the fungus can make but little progress.

Phylloxera on Vines (*Pat*).—The roots you have sent have been carefully examined by Mr. Abbey, and though no phylloxera could be found there was plenty of evidence of the attacks of the enemy. Mr. Abbey states that the phylloxera found in the excrescence on the rod exactly coincided with the figure shown in Mr. Barron's "Vines and Vine Culture," page 106, at *e*, when magnified 15 diameters, but the caudal appendages were much larger and the whole body covered entirely by a white meal, the colour beneath brown or dull orange. It was a very active creature, moving about rapidly when disturbed, and always coming to rest in the depths of the excrescences on a soft part. The meal covering has an important influence in the matter of substances intended for the destruction of the pest, as for instance, a drop of the new silico-fluoride of ammonia solution was thrown off promptly, and the insect not a particle the worse. It was much the same with aniline, soluble phenyle, nicotine, and formalin, but a drop of spidicide broke up the meal and the insect at once. Methylated spirit acts similarly on this pest and mealy bug. The border needs to be cleared out and the Vines, too, and these burnt, or the scourge may spread. Proceed with the same thoroughness that Mr. M. Dunn of Dalkeith did when he was gardener at Powerscourt, near Dublin. See "Vines and Vine Culture," page 110. It can be obtained from the publisher, 171, Fleet Street, by post, for 5s. 3d.

EDITORIAL NOTICE.—It is particularly desired that all communications, parcels, catalogues, and newspapers intended for the Editor, be sent direct to 8, Rose Hill Road, Wandsworth, S.W.

Large Dessert Apples (*W. T.*).—For the purpose of guiding judges and exhibitors at the shows of the Royal Horticultural Society, lists of dessert and cooking Apples are published in the schedule of the show that was recently held at the Crystal Palace. This is an excellent plan, as all doubts as to the inclusion or otherwise of certain varieties in the respective classes are removed. The varieties, Peasgood's Nonesuch, Cox's Pomona, and Lady Henniker are in the R.H.S. cooking list; but this list is only binding when it is clearly stated in the schedules of local shows that such is to be the case, and then the R.H.S. plan should be adopted of printing the names of the 150 varieties in the same schedules, otherwise the varieties mentioned are quite eligible for dessert classes. We should not think of disqualifying them at any show where the schedule did not specifically exclude them. It would be unjust to many exhibitors to do so who staged in the honest belief that they were within the terms of the schedule, and relied on the "Fruit Manual," the "Fruit Grower's Guide," or the catalogues of leading fruit nurserymen as to the eligibility of these and other varieties in either class. At the same time, it must not be supposed that judges would give greater weight to large and attractive fruits of fair eating quality than to good specimens of the smaller admittedly dessert varieties. We should not do so, but we should estimate the former more highly than some of the miserable speckled "woody" samples of real so-called dessert Apples that find their way on exhibition tables. One of the worst Apples for eating, if not for cooking also, is Baumann's Winter Reinette, now placed in the dessert list at the R.H.S. shows. You had better stage in accordance with the custom of your district, and remember that as a rule the "decision of the judges is final."

Names of Fruits.—*Notice.*—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. *In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing.* The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. *They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state.* (*J. B.*).—If the tree is an upright grower the variety is Gloria Mundi, if of spreading habit Warner's King. The first-named often keeps till Christmas. (*W. W.*).—1, Lewis's Incomparable; 2, Beauty of Hants; 3, Cellini; 4, Warner's King; 5, Winter Pearmain: 6, probably a highly coloured fruit of Dumelow's Seedling. (*Gardener*).—1, Beauty of Stoke; 2, unknown, probably a local seedling; 3, crushed beyond the possibility of identification; 4, Beurré Clairgeau. (*A. D. & Sons*).—Doyenné Boussoch. (*J. Burch*). 1G, London Pippin; 3G, Yorkshire Greening. (*J. J. D.*).—1, Durondeau; 2, Comte de Lamy; 3, Gloucestershire Costard; 4, Old Hawthornden; 5, not recognisable, quite mealy; 6, an abnormal specimen; if the tree is an upright grower the variety is Gloria Mundi, if of spreading habit Warner's King. (*W. S.*).—Marie Louise.

Names of Plants.—We only undertake to name *species* of plants, not varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*Junior*).—1, Clematis flammula; 2, Ophiopogon jaburon variegatum. (*G. M. C.*).—1, Sedum azoidenm varicgatum; 2, Polypodium aureum; 3, dead. (*O. B.*).—Chrysanthemums are obviously florists' flowers, which can only be named by comparison. If the varieties were purchased the vendor, if the grower of a large collection, will be able to supply the names. (*G. G.*).—No. 5, a form of Cattleya Bowringiana: the remainder are varieties of C. labiata. (*A. Z.*).—1 and 4, forms of Pteris serrulata cristata; 2, P. cristata albo-lineata; 3, too withered for identification.

COVENT GARDEN MARKET.—Oct. 27th.

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, ½ sieve	0 0	0 0	Onions, bushel	3 6	4 0
Beet, Red, doz.	1 0	0 0	Parsley, doz. bnchs.... ...	2 0	3 0
Carrots, bunch	0 3	0 4	Parsnips, doz.	1 0	0 0
Cauliflowers, doz.	2 0	3 0	Potatoes, cwt.	2 0	4 0
Celery, bundle	1 0	0 0	Salsafy, bundle...	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Seakale, basket	1 6	1 9
Cucumbers	0 4	0 8	Scorzonera, bundle	1 6	0 0
Endive, doz.	1 3	1 6	Shallots, lb.	0 3	0 4
Herbs, bunch	0 3	0 0	Spinach, pad	0 0	0 0
Leeks, bunch	0 2	0 0	Sprouts, ½ sieve...	1 6	1 9
Lettuce, doz.	1 3	0 0	Tomatoes, lb.	0 4	0 0
Mushrooms, lb.	0 6	0 8	Turnips, bunch	0 3	0 0

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	1 0	to 3 0	Grapes, lb....	0 8	to 2 0
Cobs	22 6	23 0	Lemons, case	11 0	14 0
Filberts, 100 lbs.	0 0	0 0	St. Michael's Pines, each	3 0	8 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6 0	to 36 0	Ficus elastica, each... ...	1 0	to 7 0
Aspidistra, doz.	18 0	36 0	Foliage plants, var., each	1 0	5 0
Aspidistra, specimen ...	5 0	10 6	Heliotropes, doz.	3 0	5 0
Chrysanthemums, doz. ...	4 0	9 0	Lilium Harrisi, doz.... ...	12 0	18 0
,, ,, single plants	1 6	2 0	Lycopodiums, doz.	3 0	4 0
Coleus, doz.	2 6	4 0	Marguerite Daisy, doz. ...	4 0	9 0
Dracæna, var., doz.... ...	12 0	30 0	Mignonette, doz.	4 0	6 0
Dracæna viridis, doz. ...	9 0	18 0	Myrtles, doz.	6 0	9 0
Euonymus, var., doz. ...	6 0	18 0	Palms, in var., each... ...	1 0	15 0
Evergreens, var., doz. ...	4 0	18 0	,, specimens	21 0	63 0
Ferns, var., doz.	4 0	18 0	Pelargoniums, scarlet, doz.	2 0	4 0
Ferns, small, 100	4 0	6 0			

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms ...	3 0	to 5 0	Marguerites, doz. bnchs....	2 0	to 3 0
Asparagus Fern, bunch ...	1 0	2 6	Maidenhair Fern, doz. bnchs.	4 0	8 0
Asters, bunch	0 4	0 8	Mignonette, doz. bnchs. ...	2 0	4 0
Bouvardias, bunch	0 6	0 8	Narciss, white (French) bunch	0 4	0 6
Carnations, 12 blooms ...	1 0	3 0	Orchids, var., doz. blooms	1 6	12 0
,, doz. bnchs. ...	4 0	9 0	Pelargoniums, doz. bnchs.	4 0	6 0
Chrysanthemums, 12 bnchs.	4 0	6 0	Pyrethrum, doz. bnchs. ...	1 6	4 0
,, ,, 12 blooms	0 6	2 6	Roses (indoor), doz.... ...	0 6	1 0
Dahlias, doz. bnchs.... ...	2 6	6 0	,, Tea, white, doz. ...	1 0	2 0
Eucharis, doz.	3 0	6 0	,, Yellow, doz. (Niels)	1 6	4 0
Gardenias, doz.	1 6	2 0	,, Red, doz. blooms ...	0 9	1 0
Geranium, scarlet, doz. bnchs.	4 0	6 0	,, Safrano (English) doz.	1 0	2 0
Gladioli, doz. bnchs. ...	6 0	18 0	,, Pink, doz.	1 0	2 6
Lilac (French), bunch ...	5 0	6 0	,, outdoor, doz. bnchs.	3 0	6 0
Lilium lancifolium, bnch.	1 6	2 0	Smilax, bunch	1 6	2 6
Lilium lancifolium, short, per 12 blooms	1 0	1 6	Tuberoses, 12 blooms ...	0 3	0 4
Lilium longiflorum, 12 blooms	4 0	6 0	Violets, doz. bnchs.	1 6	2 0
Lily of the Valley, 12 sprays	1 0	2 0	,, Parme (French), bch.	2 6	3 6

ACCIDENTAL POISONING, AND OTHERWISE.

Why should the last clause remain in the title? Surely premeditated poisoning is only to be heard of among hardened criminals; but, alas! such is by no means the case. Possibly many cases will occur to our readers, and if, happily, they are ignorant of such cases, so much the better for them. On a stock farm losses of all kinds are continually occurring, and even with the greatest care such losses can often not be prevented. Perhaps it is almost a wonder more accidents do not occur, such as broken or dislocated bones; but these are not frequent.

There are diseases also incidental to the seasons; diseases produced by an over-abundant supply of sappy food, as also by an under supply. This latter cause does not necessitate instant death, it only makes a debilitated body ready to receive any poison germs, and to nourish them hospitably. There are the diseases, too, confined to breeding animals, and these often amount almost to an epidemic.

For all these losses a farmer is, in a measure, prepared—that is, he expects a certain percentage per annum, and although he may not like it, still bears these losses with a certain equanimity born of expectation. But every now and again we hear of other and heavy losses that fall like a bolt from the blue, their very unexpectedness making them most alarming. There is one form of poisoning far too common in this country, and the cause is, to a certain extent, under our own control. We mean the poisoning by Yew.

This has always been a favourite shrub; it lends itself well to decorative purposes; it makes the most excellent of hedges, and it is found far and wide all over the kingdom. Planted and cultivated in the churchyards by the first Edward, it produced those wonderful bows which made the English archer the terror of all nations. Nothing and no one could withstand the deadly shaft from that bow of Yew when the string was drawn by an English bowman.

Beautiful as this evergreen is, and useful as it was, it still should be confined to very limited areas. There has been at one time an impression abroad that only in a withered state it was poisonous. We are perfectly sure of many deaths that have arisen after the eating of withered hedge-trimmings and remains of Christmas decorations, and we know of other cases where the result has been fatal after eating from the living tree; and then again have we seen bits of a Yew hedge nipped off by passing animals, which certainly has not killed nor apparently injured them. Mr. Harold Leeney has an exeellent article on this subject in a recent number of the "Agricultural Gazette." Having lately lost a valuable Hackney from this cause he speaks feelingly. He says that if all cases of Yew poisoning could be published no one would dare to have a tree on the premises.

The worst of this poison is that an animal is dead before there is any idea that anything whatever is wrong. Then the rest of the stock in the same field are more carefully observed, and probably some will be found unable to walk straight, and apparently suffering from narcotic irritant poisoning. Paralysis of the hind quarters, closely followed by death, are the next steps.

Mr. Leeney goes on to say that there is no direct chemical antidote which will neutralise the poison, so all we can do is to resort to such physiological antidotes as are best calculated to counteract the symptoms produced. He suggests a large dose of linseed oil, which possibly expels the offending matter before it can do much harm. Then the narcotic symptoms must be dealt with. The heart must be roused to action, either by a dose of sal volatile, sulphuric ether, or nitrous ether; these are the best stimulants, but failing these (and the case admits of no delay) brandy or whisky may be given. Even though the case be severe, and the patient apparently *in extremis*, the dose must not be too large, or there is a danger that the remedy may act in an opposite direction to that desired —namely, becomes a sedative. The animal heat should be kept up by clothing and rubbing, especially of the legs.

It is most desirable, if evergreens be grown about a farm, that all the cuttings be most carefully burned. This also applies to withered Christmas decorations, which are often treated in a most careless fashion.

Laburnum seeds, too, are a great source of danger, and the removal of a quantity of rubbish together with fallen seeds into the foldyard once taught us a very practical lesson as to their disastrous effect on pigs.

We suppose we need hardly mention the desirability of carefully destroying any Wheat that has been "dressed" for sowing that may by chance be left over.

There is another form of animal poisoning that happily is of rarer occurrence than formerly. We allude to deleterious matter in cakes. This, of course, is the fault of the manufacturer, who is either in too great haste to be rich, or who is wilfully ignorant of the impurity of his mixture. That cake is not always what it should be we may gather from reading the reports of analysts; but a good deal has been done to remove the absolutely poisonous ingredient. Dirt kills so slowly, and it is only few firms that guarantee 95 per cent. pure linseed.

A new, or comparatively new, cake is that made from Cotton seeds. These seeds are encased in much soft tissue, the raw cotton of commerce, and which if unremoved before the seed is crushed is most pernicious in its action, clogging up the stomach and alimentary canal.

A grave form of poisoning still remains for notice—a form which is found to be very widespread. This may come under the head of "otherwise," for it should never exist. That it does exist is through the gross ignorance of those who have to do with valuable horses—we mean not only pedigree ones, but the teams of the farmer. It is not only the farm servants who are to blame, as we often find the older men quite ready to aid and abet. That a great many fearful drugs are used every year by horsemen is absolutely certain, and it is a constantly occurring piece of news in local papers of so-and-so losing valuable horses from the effects of deadly poison, given them secretly by their attendants.

No amount of watchfulness on the part of the owner seems able to prevent acts of this sort, and even when detected it is a difficult matter to punish the offender. The horse or horses are dead, and the farmer hesitates before going to the expense of a trial, where, possibly through some little technicality, he loses his case, or at the best finds the magistrate is able to inflict only a very inadequate punishment. The punishment should be severe enough to deter future offenders.

WORK ON THE HOME FARM.

With so much to do in a short time we should never advocate the ploughing of fallows until other autumn work is completed; it is often done in October, and we have done it ourselves, but it is work just as well left until nearer Christmas. For one thing, where land has been worked and a crop of twitch got off, there are always a few small bits left on the surface; if ploughed in early these bits generally retain life enough to make their way to light and air, but if we delay ploughing until later, and in the meantime take advantage of every dry windy day (and we have had several lately) to give the land a good harrowing, the early winter frosts will add the finishing touch to the withering particles, and if well turned down to the bottom of an 8-inch (depth) furrow, little will survive to commence new growth in spring. The use of the chilled plough makes the ploughing a simple matter, for one plough with three horses will plough 1½ acre per day easily, even in the short days of winter.

The fine warm weather is very favourable for the Potato harvest. Since our last notes buyers have been on the alert, and prices are decidedly higher; in fact there is quite a little boom. This is not very surprising, for we believe this year's crop to be the smallest on record.

We have been taking up Bruce, a very small crop, not one-half being fit for sale as ware. To-day we begin with the "Up-to-Date," and it is quite refreshing to see such a fine turn-out, large in size and splendid in quality. We weighed one straight well-grown tuber and found it 30 ozs. This is, in our opinion, the finest variety of late Potato in existence.

We have tried the digger, but find it bruises many of these large Potatoes, so we have reverted to the plough. We find stack sheets very useful to put over the pies before earthing up, and have had two long ones 12 yards each by 4 wide made expressly for the purpose. They not only protect from frost, but keep the straw dry until soiled up.

OUR LETTER BOX.

Feather-eating Fowls (*W. S.*).—Your letter shall have attention. In the meantime give them plenty of green food, such as cabbage or anything of that kind to occupy their attention.

Webbs' Barley Competition.—The valuable prizes for Barley offered by Messrs. Webb & Sons, of Wordsley, brought a keen competition, and the Judge, Mr. T. Phipps, of the firm of Messrs. Pickering, Phipps and Sons, Limited, of Northampton, was occupied a considerable time in making his awards, which were as follows:—Class 1, champion prize, open to the United Kingdom, £25, Mr. W. Nisbett, Stratford St. Andrews, Saxmundham, Suffolk; Class 2, open to Salop, Stafford, Hereford, Worcester, and Warwick; first prize, £15, Mr. E. Bomford, Spring Hill, Fladbury; second prize, £10, Mr. W. Chick, Sutton Maddock, Shifnal; third prize, £5, Mr. G. Corbishley, Bricklehampton Court, Pershore. The conditions of competition stipulated that the Barley should be one of Webbs' varieties, and grown with Webbs' special Barley manure. The high quality of the samples exhibited testified to the value of both seed and manure.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

DATE. 1897. October.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp of soil at 1 foot.	IN THE DAY. Shade Temperature. Max.	IN THE DAY. Shade Temperature. Min.	IN THE DAY. Radiation Temperature. In Sun.	IN THE DAY. Radiation Temperature. On Grass.	Rain.
	Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Inchs.
Sunday 17	30·03	59·7	56·2	S.	52·9	67·2	55·2	109·3	47·0	—
Monday 18	30·125	58·8	55·6	W.	53·7	64·4	56·2	88·9	49·8	0·141
Tuesday 19	30·235	56·6	56·6	N.E.	53·9	62·1	54·8	74·2	49·7	—
Wednesday.. 20	30·518	45·1	45·1	N.	52·7	61·2	42·2	90·1	38·1	—
Thursday.... 21	30·690	46·0	46·0	N.	50·9	60·0	42·6	93·3	37·9	—
Friday 22	30·489	51·2	48·2	N.	50·0	54·6	44·2	64·8	38·1	—
Saturday .. 23	30·257	51·3	48·3	N.E.	50·4	55·6	49·1	74·1	46·3	—
	30·322	52·7	5 ·9		52·1	60·7	49·2	83·7	43·8	0·141

REMARKS.

17th.—Bright sun till 2 p.m.; fair after.
18th.—Sunny morning; cloudy afternoon; rain at night.
19th.—Dull, damp, and rainy till 9 a.m.; faint sun till 1 p.m., followed by high fog; bright sun from 3 p.m.
2 th. Fog early, bright sun from 9 a.m.
21st.—Fog till 9 a.m.; bright sun from 9.30 a.m. to sunset; fine night.
22nd.—Fair, but sunless till 3 p.m., then bright for half an hour.
23rd.—Overcast morning; sunny afternoon; fine night.

A lovely autumn week, with rain on only one day. Temperature about 5° above the average.—G. J. SYMONS.

Journal of Horticulture.

THURSDAY, NOVEMBER 4, 1897.

THE JOURNAL OF HORTICULTURE *can be obtained from the Office*, 171, *Fleet St., London, post free for a Quarter*, 3/9. **Editorial communications must be addressed to 8, Rose Hill Rd., Wandsworth, S.W.**

HARDY AUTUMN FLOWERS.

WE view with dread the prospect which appears before us. We feel that all too soon shall the garden's pleasures vanish before the frost, and leave us forlorn and longing for the coming round of spring. Frost and snow and wintry rain shall steal our treasures away.

"First drops the bloom, then darkens the green leaf;
Everything in life is brief
Save autumn's deepening gloom and winter's changeless grief."

Fewer are the flowers even now, and before long their ranks will be sadly thinned. Frost we have had, sufficiently severe to injure the leaves of the Dahlias, Tropæolums, and plants of similar tenderness, but not enough to deprive us of all their blooms, or to mar the hardier flowers. This year it has not come, as it often does, with little warning, sweeping down upon us from the bitter North with furious biting breath, and shrivelling before our eyes the leaves and flowers. It stole upon us gently, as if unwilling to harm our flowers, and gave place to drenching rain, far from pleasant to see or feel.

Thus, though the leaves fall faster every day and hedges grow thin and leaves are lit up by autumn's fiery tint, we have many bright flowers in our garden yet. Sunflowers have almost gone, or look unhappy now that their deity has lost his power. The Water Lilies in the pool have their buds arrested; never will these flowers charm us this year again. Their leaves begin to decay, and soon shall mingle with the waters on which they float, to make again fresh sustenance for flowers and leaves. There are tokens of decay all around, yet even without the beauty yielded by many of the dying leaves the time has its chaste pleasures for us still.

There are Heleniums and Michaelmas Daisies in plenty, and here and there, as we look along the rock garden or the border, we see some bright patch of colouring lighting it up. The choice of flowers is limited now, and we cannot but think those left are doubly dear. They are the last of our friends for the year, unless it may be some of the rarer Snowdrops and Croci, which seem to laugh at winter's effort to bid them halt. The frost has left its mark upon the Eccremocarpus scaber, which

has for so long veiled with beauty the trellis on the outhouse gable. There are flowers on it yet, and these mingle with the curious seed vessels, some rough and green, others brown, and open to unlade their hosts of seeds. Some Gladioli there are in the middle of October, and with Colchicums and Crocuses these keep up the succession of bulbous plants.

Not many of the Meadow Saffrons are left now, and the best of these are the double forms. The ivory white blooms of Colchicum autumnale album fl.-pl. are nearly over, and are tinged with the pale shade of pink with which they are suffused as they begin to fade; but three other double varieties of the same species are attractive, and increase more rapidly than the white variety. Very pretty are C. a. roseum plenum and C. a. striatum plenum. The former is of a soft rosy purple, and the latter almost the same, but with broadish white stripes down the segments. These double forms are later than the single, and although liable to fall to the ground more readily, are more lasting in their beauty. Another exceedingly pretty Meadow Saffron is C. Parkinsoni or Chionense. If C. Sibthorpi is the largest of the chequered varieties, and the most beautiful, C. Parkinsoni has its beauties as well. It has sharp, pointed segments, and the chequering very marked; so much so, indeed, as almost to be formal in its character. Its great defect is its erratic ways as regards time of blooming. It seldom blooms with the others, but makes an effort to flower with the Snowdrops with but poor success, the blooms being comparatively poor and colourless. This season it was unusually obliging, and favoured me with some flowers in the end of September. These were in perfect character, and made one more willing than before to put up with, and almost overlook, past disappointments.

Very delightful now are the Michaelmas Daisies. They have been later than usual this year, and it is unusual for us to have the favourite A. novi belgii lævigatus at its best in the middle of October. The old name of longifolius formosus dies hard, and this pretty little Aster is more frequently found with this name attached than with that adopted by the Aster Committee. Very soon we shall be so overwhelmed with seedling Starworts of great beauty that the need of names will be less than before, and we may have to content ourselves by selecting from those we see in flower. A nice bunch of charming flowers from Mr. Wolley-Dod is before me as I write. They are exceedingly beautiful in their varied shades from white to purple and blue, and comprise some varieties of the highest worth. It may, after saying the foregoing, seem almost contradictory to speak of a named variety, but as things are one cannot very well dispense with doing so.

The one now chosen is Aster Coombe-Fishacre, not a particularly pleasing name, but appropriate as indicating that it originated in the garden of Mr. T. Archer-Hind, a well-known lover of flowers. The flowers are not very large, and are, perhaps, a little stiff-looking in themselves. The colour is what is called, with the latitude allowable in colour nomenclature, "flesh," and is, if not highly effective, very pleasing. The height of the plant is about 3 feet, or a little more with us in the North. The habit of Aster Coombe-Fishacre is one of its strong points. It is very graceful and of really elegant habit, and covers itself profusely with flowers. It had just begun to flower in the beginning of October in a partially shaded place, and gives promise of flowering for a very long time.

Another good Starwort, of an entirely different character, is A. puniceus pulcherrimus, which is, perhaps, rather tall in growth for some, being about 5 feet high in ordinary soil. It has very pretty blush-white flowers of large size. These have the florets prettily incurved. As a garden plant, its appearance is enhanced by the contrast of the deep crimson stems with the colour of the flowers.

There are also some exquisitely coloured varieties of the novi-belgii class. Among these may be named Ella, soft mauve; Janus and John Wood, white; Nancy, pale blue; and Daphne, deep blue. The number of beautiful Starworts is, however, almost inexhaustible and certain to increase from the ease with which they are raised from seed. Raising seedlings takes a large space unless a number of odd corners are at hand, and by far the larger number are so like existing sorts as not to be worth naming. It is safe to say, however, that our gardens can be still further enriched in this way, and we may hope to see these hardy and beautiful flowers do more than in the past to give the autumn garden additional attractions for the admirers of flowers. A touch of frost even seems to brighten some of the Michaelmas Daisies. Few flowers are improved by such unkindly treatment, and we prize them all the more when they are left to us when others of our favourites have succumbed to the power of advancing winter.—S. Arnott.

ESTIMATES OF GARDENING.

The comparatively young will never think exactly the same as the relatively old, and it is no doubt well that this should be so. There is a disposition on the part of those who have worked long and well to think there are no times like the old times. They reflect with pleasure on the triumphs of the past, and not without good reason. Had they not ripe Grapes in March with flue-heated houses, the result of often giving all-night attendance to the fires? Did they not also cut Cucumbers in the same month, and ripe Melons in May, without any fire heat at all, but from frames solely heated by fermenting materials? And did they not with admirable devotion, consummate judgment, and unwearied attention, not for one year, and then starting again with young stock (as with Chrysanthemums, so splendidly produced now), but for a dozen years and more, succeed in building up those magnificent hardwooded specimen plants, then so prized, but now almost gone, and some of which might have been ruined by one mistake in watering?

The veterans are entitled to dwell on those achievements with pride, indeed it is creditable to them to do so. Moreover, they find pleasure, not unmixed with regret, in pointing to periods in the distant past when they believe that national enthusiasm in horticulture in its broadest aspect was greater than it is now, and the achievements of the skilful workers in it were not less worthy of their kind than those in a different way are worthy at the present time.

Then no amount of argument can make the old masters feel that wall trees as a whole did not reflect evidence of greater care and skill in the olden time than those, as a rule, display now; nor can they be convinced that the supply of fruit grown for home use was not, so far as varieties and means permitted, quite as good as is the case in these modern days; indeed they do not hesitate to aver that the Grapes and Peaches at the famous Chiswick shows of the long ago were better than those at the Crystal Palace in the beginning of last month.

It may be that these veterans were too generous in their estimates, formed at a time when they were young, and with minds more impressionable than now; and if that is so, is there not the same possibility of the not yet old and ardent workers of to-day being similarly impressed with the products of the times which they worthily aid in producing?

It seems natural for the young to be sanguine, and the middle-aged to be satisfied that nothing better has been done in the past in gardening than is achieved now. This ought certainly to be the case, and it doubtless is in some things, but not in all. The requirements of the present differ from those of the past, and a comparison cannot be drawn between the efficiency of gardeners as a body in, say, the forties and the nineties. There were splendid men in the old days as there have been down to the present time, and if we were to say there are more thoroughly competent gardeners now than could be found in the "forties" that would be no particular compliment to the craft. There ought to be more, because of the increase of population, of wealth, and the increased appreciation of the products of the garden.

While it may be said, with regret, that many fine old gardens have fallen from their high estate, infinitely more of varied extent and character have come into existence, with the result that the industry of horticulture in the aggregate is greater than it has ever been before. This means that the number of gardeners is greater than at any time anterior to the present generation—or men employed as such. Of thorough gardeners there is no lack—men of high character, bright intelligence, and conspicuous competency. In the whole wide world the superiors of, if equals to, the best British gardeners cannot be found. But what of the fringe? Is this not of necessity, under the circumstances, also greater than at any time in the whole long history of gardening?

The next thing to recognise is the existence of something that is not infrequently overlooked in estimating the real merits of both past and

present-day gardening—namely, the law of averages. Much, in the ordinary course of present-day procedure, is heard of what is famous, as in descriptions of, and well-merited work in, specially noteworthy gardens; also, in the registering of names of prizewinners at many shows. This is what is justly due; but, after all, it only represents one side of the subject. And again, what of the fringe?

For arriving at a true estimate of the actual state of gardening or anything else, the other side—the weak side—must not be ignored. It simply cannot be, if the actual state of the whole is to be determined. Without any suggestion from us, it seems that this is exactly what has occurred to one of our correspondents, who has exceptional means for observing the best and the worst conducted gardens in the kingdom. He appears to have been taking note of all kinds and endeavouring to strike an average. With what accuracy or otherwise we do not know. He may have over-estimated the badness of the bad, and under-estimated the goodness of the good; but whether this has been so or not, the average was bound to be very much lower than if the very best work only were appraised and the worst forgotten. What wonder, then, that really able men, whose work is a credit to them, should enter protests against the conclusions of this self-appointed scrutineer?

Two things are certain. This daring "Traveller" not only knows what is good when he sees it, but sees more gardens in a week than few gardeners see in a month, or many in a year. It is no novelty to him to see his name in print. He has had enough of that in his time to satisfy even a vain man, though we do not place him in that category. Some years ago one of the gardens from which he retired with as much credit as a man could wish, had prominence in this and other gardening papers, and the produce from it won the highest honours at the leading shows. It is due to him to acknowledge this without endorsing all, if anything, that he has said.

He has possibly to some extent attained his object—namely, of awaking the lethargic from their slumbers, and stimulating the laggards to greater endeavour. His letters were inserted because, despite of many men who have in one way or another come to be called gardeners, and whose ignorance is so great that in their estimation they have nothing to learn by reading or attending meetings for instruction, we believed that the position of British gardening at the present time could be well defended, and we have not been disappointed.

Let the veterans rest and be thankful in the pleasant memories of the past; their successors maintain the best standard of the present, and probitioners strive assiduously and perseveringly to excel both, and healthy growth (not decay) will be insured in gardening.

FRUIT AND TABLE DECORATIONS.

"S. B. O." (page 402) is evidently a cautious, if not a sceptical man, for he wants to know if there is any mistake about my former statement that "the young men used to turn out *en masse* to prune and nail wall trees." Certainly not; and although it may surprise him, I will add that is one of the best ways, if not *the* best way, to manufacture good tree trainers and fruit growers. If several young men are set to do work of that description together, under the watchful eye of the chief or foreman, a laudable spirit of emulation will cause each to try and do the work better than the others. A little competition of that kind gives great impetus to workers in every walk in life. Of course the youngsters do not begin at the top, any more than they do when pursuing other branches of gardening. The practice was for the foreman to go in front and prune, the younger ones following to remove old shreds and nails, while the journeymen arranged and nailed in the main branches. After a time the promising youngsters were allowed to nail in some of the small shoots between the main branches, and if they did not do them satisfactorily at the first attempt, why they simply had to loose them and "try again." Those with a little "true grit" in them soon learned to accomplish the work creditably, and were then rewarded by being allowed to nail in a small tree from start to finish. I know of many men holding good positions who look back with lively satisfaction upon their early attempts at tree training, and regret that they are not able to follow the same system now in the gardens they preside over; still they do not despair, but plod quietly on, knowing well that it is necessary for them to change their methods even as the times are changing. They see also a new light, which comes to them in the shape of bountiful crops, even though the tree branches are somewhat crooked.

In paragraphs 1, 2, and 3 on the page cited there is little that I do not agree with, in fact I have conveyed the same ideas in other words on many occasions to readers of the *Journal of Horticulture*. "We have a fair share of decorative work," writes "S. B. O." Very well, then consider yourself fortunate, and by all means try and keep your decorations down to that point as long as you can. If you get beyond it your present impressions will perhaps vanish like the "myths" of old. Floral decorations are of course not the cause of all the bad examples of fruit culture that we see, but I am quite sure of this, that in many places with the best of energy, ingenuity, and management, fruit trees do not get the attention they would if the decorative work were proportionate to the resources of the establishment. I know of a gardener who for weeks together keeps 300 flower glasses continually filled, some of them being trumpets 5 or 6 feet in height. He has also from twelve to fifteen large Palms, 6 and 9 feet in height, continually in the mansion, and about the same number of stands, baskets (3 feet in diameter), and groups of flowering and foliaged plants to be kept constantly in good condition. Then the dinner tables have to be smartly done. This occupies two men—sometimes three—and a boy three or four hours daily when large parties take place, and that is pretty often. This is the style of decoration that must inevitably lead to deterioration in some departments of gardening, unless the staff is largely increased.

It is a pity there are not more employers like the one "S. B. O." has the honour to serve, for it is far more satisfactory to gardeners to have their fruit placed upon the dinner table. Perhaps the fine display made by the dessert tables at such shows as Shrewsbury (which I examined closely) will in time influence the prevailing fashion—though I am not very sanguine on that point, as the "highest circles" do not take their fashions from horticultural shows. I thought it was generally known that the acknowledged leaders of fashion in what is called "society" form themselves into a series of rings known as the "highest circles," and the fruit, as well as everybody else connected with their "smart parties," must be of the very best. Mediocre samples will not satisfy them even for handing round, and the finest examples of cultural skill will not secure a place on the dinner table except on some comparatively unimportant occasion. There is, however, a good deal to be advanced in favour of the present state of affairs (though, perhaps, not from a gardener's point of view), as it marks another stage of refinement. There can be no doubt that, from an artistic point of view, a dinner table can be made more effective when the dishes of fruit are kept off, and nothing but flowers and foliage employed for embellishment. The whole can then be made light and graceful, like a scene from fairyland.—H. D.

HARMFUL AND HARMLESS GARDEN MOTHS.—10.

Before introducing the Hybernias to the reader's notice, a group of moths well known in our gardens, also in shrubberies and woods, I must refer to a species that might have been associated with the Currant moth of last article. This is the V moth, or Halia wavaria, so named because one of the four conspicuous dark spots upon the grey upper wings has a resemblance to that letter. It has the peculiarity that the margins of the wings have rows of black lines; from the middle of each is a tiny brush of white fringe. We find the caterpillar feeding upon Gooseberry and Red Currant, about an inch long when adult. The ground colour varies much, but the body is always studded with black warts, and has a yellow line along each side. Feeding in August or September, they are seldom numerous enough to do the bushes harm. By shaking, these are easily dislodged; they double themselves up as they drop, remaining a long while in that folded position. Nearly related to this moth is the pretty brown silverline (Panagra petraria) which flies in June, the general colour of which harmonises with the Ferns amongst which it is usually noticed. The caterpillars occur upon the common Brake Fern or kindred species, slender-bodied loopers, of a dull green tint, marked with numerous dark lines running from head to tail.

The Hyberniæ, or winter moths, present a natural and very interesting group. Most of them come under the observation of the gardener in one or other of their stages. We call them by that name, as they appear at a time when few moths are abroad; but several species emerge before the end of autumn, or in the early spring, not during mid-winter. One of the remarkable circumstances in their history is that the females have merely the rudiments of wings, or they are entirely wingless. The reason of this peculiarity is not far to seek. Coming forth at a season when the weather, if not cold, is likely to be wet and stormy, wings to the female moth, which lives the longer, would be a source of peril. Without them, she can traverse easily the stems and branches, and deposit eggs for the continuance of the species. Possibly, too, the absence of wings renders these females less likely to be seized by birds. The male moths, whose life is but brief, have wings of the usual proportions for their size; their flight, however, is not rapid.

First, I mention the mottled umber (H. defulvaria) as about the largest of our winter moths, one putting in an early appearance, since it emerges during October, or at the beginning of November. Its older English name was the Lime looper, on account of the caterpillar often infesting that tree, and the Latin refers to its ravenous propensities, the food being very varied; Hawthorn and Hazel are favourites. On

the Continent it is complained of as an Apple foe, and, with us, several fruit trees are occasionally visited. The Rev. J. G. Wood remarks that a journey of a few inches is fatiguing to the female. I doubt if that is so, since the caterpillars frequently drop in a spring gale from the higher branches. Certainly, it is possible they may travel upwards while young. Even rudimentary wings are wanting in this female moth, but her dark brown body is marked with black dots, and she deposits nearly 200 eggs. This caterpillar has been said to be handsome; the head is brown, and the upper surface of the body divided by a black stripe from the yellow beneath; there are also dots of grey and white, the legs being pale green.

In walking through a copse, or perhaps an orchard, on a May day we may see hundreds, even thousands, of these caterpillars dangling by their silken threads. Newman seems to have thought they do this sometimes as a recreative performance, but a strong wind brings them to the earth, from which, after a pause, they return to the branches, gathering as they go their threads into loops for future use. The Germans strike the trees with long poles in the spring to bring them down, and endeavour to stop the ascent of the moths by placing a wooden sheath smeared with tar round the trunks or stems, on the plan followed for the destruction of the female winter moths (Cheimatobia). It may be well to note here that none of the caterpillars of this group descend far into the earth to undergo the chrysalis change; frequently they lie upon the surface, protected only by a slight web; in any case they are covered with but a thin layer. No doubt some are eaten by birds, and some that do not emerge till the new year perish through the rains of autumn and winter. They do not appear to be much reduced in numbers by the agency of parasitic ichneumon flies.

On a January day it may surprise a gardener to see a moth, the dull colour of which harmonises with the season, flying briskly along, or having a rest on a fence. Rightly is the Hybernia rupicapraria named the early moth, for the cold of the first month of the year affects it not. Its pale under wings, however, contrast with the dark brown of the upper pair. The female has very short wings, useless for flying, but exhibiting a bar across the centre. Sloe, Plum, and Whitethorn chiefly furnish food to the caterpillar, which hatches early in April, and is full grown in about six weeks. It sits upon the twigs in a looped position when not eating, and is velvety, of various shades of green, but always displays white marks on the body, arranged in lines. A harmless species of early habit is the dotted border (H. marginaria); it flies generally in February, conspicuous by its marginal spots. The female has larger wings than the rest of the groups, yet of no service for flight, nor probably any help in walking. During the summer the brown caterpillars feed on Oak, Birch, or Hornbeam; occasionally they appear in large colonies amongst the woods, but about gardens we seldom see more than a few specimens.

Cheery is the English name of Hybernia leucophearia. It is called the spring usher, and comes forth as a moth regardless of the rough winds of February or March. It is of very variable colour; some are dark brown with a white bar, and others pale, having wavy lines across the wings. The females have not even the rudiments of them. The caterpillars are also of divers colours, and feed upon many trees and shrubs. When they first emerge in May they spin a few leaves together for their protection from birds, then scatter about, being adult in June, so that they pass a good while in the chrysalis state, generally on the surface of the earth. In and near gardens occurs the March moth (Anisopteryx æscularia), a smaller species of the family. The green and white caterpillar eats the leaves of Chestnut, Lime, Elm, and Whitethorn.

Of all the species the most mischievous and abundant is the winter moth, too well known to every gardener and fruit grower. It is unnecessary that I should enter upon its history now, since its economy has been fully described in the pages of this Journal, and I shall simply mention a few facts concerning it. One of these is the importance of keeping an outlook for it in October and November, when measures should be taken to prevent, if possible, the females from ascending to deposit eggs; but it must be remembered that the period of emergence may extend over several weeks after the first moths have been seen. Also, there is proof that some years a portion of the brood does not come out till after Christmas; hence Newman advises us to examine the twigs with a lantern early in the year, lest there should be females busy after dusk, and he suggests that pruning should be deferred as late as possible, so that some eggs of the moth may be possibly removed in the operation. Hardly sufficient attention has been paid to measures tending to destroy both sexes in the chrysalis state or at emergence by application of gas lime and other substances of a caustic nature to the soil around trees or shrubs. Since writing the above I have discovered that Girard, a French entomologist, noticed years ago that females of several species of Hybernia occurred on the lamps of the Bois de Boulogne, and he wondered however they got there. This does rather look as if the winged males conveyed their wingless partners to localities they would scarcely reach by crawling.—ENTOMOLOGIST.

ONCIDIUM CRISPUM.

THIS useful and free-flowering old species has always been a popular plant, and when it is well grown it is one of the most showy Orchids now in flower. Its habit is distinctive of the section to which it belongs, a section comprising such beautiful representatives as O. Marshallianum, O. Forbesi, O. curtum, and O. Gardneri. As far as the roots are concerned these may be treated somewhat similarly, but the temperature and other slight details are rather different, as will be noted in due course. None of them likes much compost about the roots, and for this reason they are not usually so satisfactory in wide and deep pots as they are in shallow wood baskets or on rafts.

The latter are, perhaps, the most suitable receptacles of all for O. crispum, and in order to prevent any possibility of rocking about, the plants must be very firmly wired on with about an inch of peat fibre and sphagnum moss underneath the rhizome. If baskets or pots are used, these should be nearly filled with drainage, the upper inch or so, for medium-sized plants, being ample room for compost. With the peat and moss allow a plentiful supply of roughly broken crocks and charcoal, this serving to aërate the compost thoroughly, a condition of things absolutely essential to the well-being of the roots of epiphytal Orchids.

Where roots are plentiful it is easy enough to fix the plants in position by firmly bedding the compost around them, but if roots are absent it is more trouble. In this case use smaller receptacles and very little peat in the compost, placing a few thin strips of cork over the rhizome, and wiring the plants down to the rods of the basket. Trim off the ragged ends of moss or peat when finished, as if these are left loose it becomes difficult to see for certain whether the plants are dry or not. These Orchids are rather sensitive to root disturbance, consequently the plants must not be re-basketed oftener than is absolutely necessary.

Should the roots be much entwined about the rods of the basket it will usually be necessary to cut this to pieces before the plant can be removed. A fine-toothed saw may be run through the corners, and the wires drawn out, the small pieces of wood with roots attached may then be introduced into the new basket. But until the plant grows out of these, or they decay, it will usually be more satisfactory to remove a little of the surface material, and replace it with clean fresh compost. A frequent mistake made by beginners in this operation is removing crocks and charcoal with the old material, and placing back only peat and moss. This gradually thickens the compost, and makes it close and inert, so that the roots cannot enter it, the result being soon apparent in the diminished health of the plant.

With regard to temperature and position, a place near the roof glass in the Cattleya house does admirably. The atmosphere must be kept moist, and no more shading allowed than is really necessary to prevent scalding the foliage. While growing freely the roots must be well moistened, and never, in fact, allowed to be dry for any length of time; but after the flowers are past and root action ceases, or practically so, they must be kept very much drier. The atmospheric moisture, of course, has to a certain extent to depend upon what plants are grown with them in the same house. I am of opinion that during the winter many of these South American plants are kept too moist. The growths are finished and there is little demand for moisture, and to supply it is, to say the least, unnecessary.

The beautiful O. Forbesi and its varieties are among the finest Orchids in existence, but unfortunately they are difficult to keep in health many years in succession. I had an idea some years ago that a rather severe drying was good for them, and I kept some very fine specimens—of which the owner was very proud—in health by this means for several years. But this, too, proved ineffective, and by degrees these plants went back, the growths getting weaker every year until they ceased to be of any practical value.

O. Marshallianum does with less heat than those I have grouped with it; in fact, it is a cool house plant pure and simple. It should not be so closely or heavily shaded as some of the Odontoglossums, but otherwise they get along together very well. Plenty of moisture should be allowed all the year round. O. curtum is another very useful and ornamental kind, the large spikes of showy blossoms produced lasting well, and having a very fine appearance meanwhile. It may be treated precisely as noted above for O. crispum, while the treatment for O. Gardneri is also similar. The latter likes rather less heat and a very moist atmosphere while growing. Taken as a whole, the crispum set, as it is called, is well worthy of the best care of orchidists, and will be grown long after some of the present-day botanical curiosities are forgotten.—H. R. R.

A VISIT TO SAWBRIDGEWORTH.

A DENSE fog hung over London on a recent day, when the writer set out to make his first visit to Messrs. T. Rivers & Son's nurseries at Sawbridgeworth, and it was not until Harlow was well nigh reached that the sun shone through the mist. As the journey had never been made before, and the reputation of the firm was well known, the pleasure of the visit was accentuated. What with the fog and special trains for some races the time occupied in travelling afforded ample time for meditation and speculation upon what would be seen when the destination was eventually reached. The picture presented by the grand fruit trees in pots staged by the firm at the Crystal Palace Show was recalled, as were the dishes of handsome Apples and Pears, with the splendid Grapes seen on the same occasion. "Will anything like those be seen?" was the mental question, and the day provided the answer of, "Yes, and something more."

The firm is of wide reputation for its fruit trees, and of these it is justly proud, but its genealogical tree is certainly worthy of a brief paragraph. It was from Mr. T. Francis Rivers, the present talented head of the firm, and of whom we give a portrait, reproduced from a photograph by Mr. A. Maxwell, Bishop Stortford, that the following particulars were gleaned. It appears that the family has been established there for nearly two centuries, though Mr. Rivers did not state decidedly that fruit trees were then grown for sale. The house of 1720 was moated and armed for the exclusion of unwelcome visitors, but in 1897 the characteristic principally apparent is the hearty British welcome that is afforded. It is probable that the times were more troublous in the days of the first of the Georges than under the beneficent régime of Queen Victoria. The moat even no longer remains, having been filled in two generations ago because, in the words of our guide, "it was a nuisance."

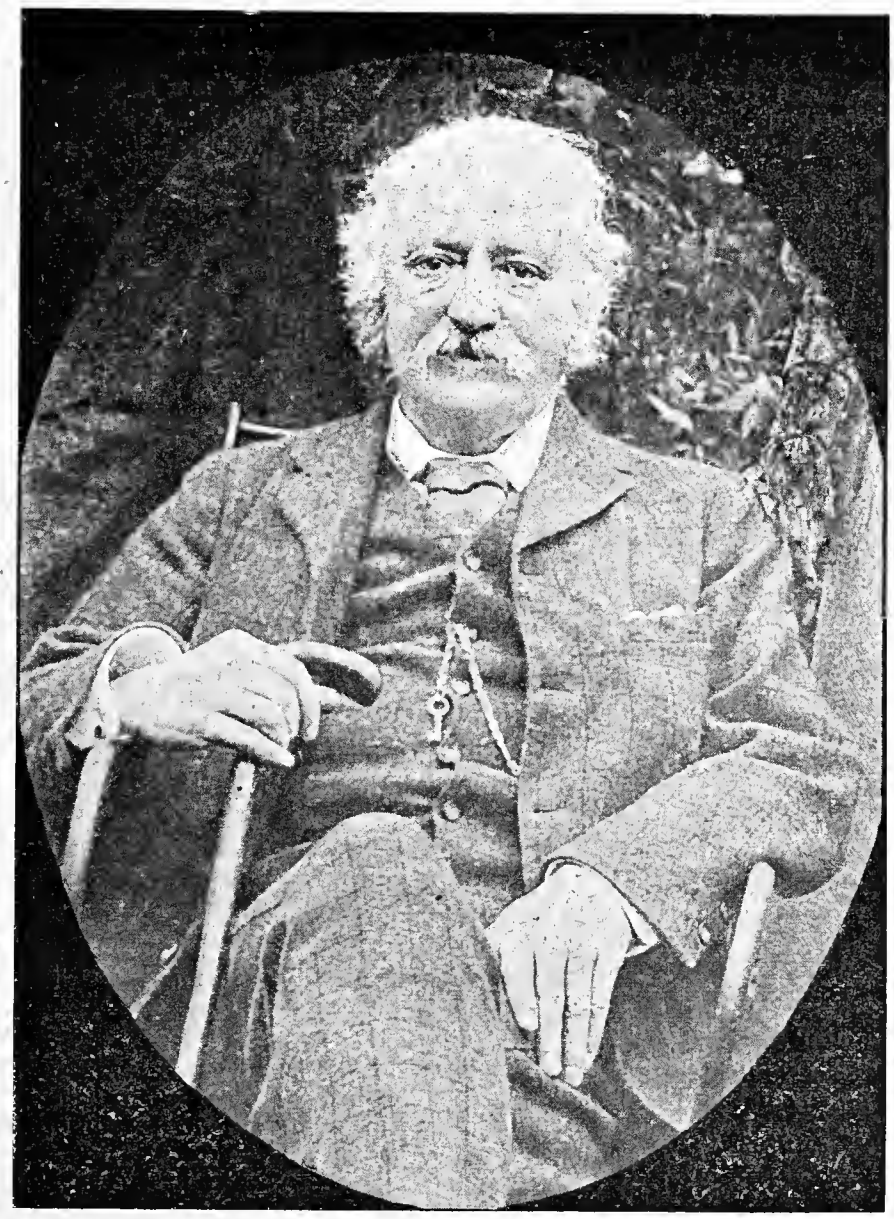

FIG. 64.—MR. T. FRANCIS RIVERS.

For a century and a half the cultivation of fruit has been carried out, and it is sufficient testimony to the excellence of the trees supplied to know that even now no signs of decrease are on the horizon. The styles of training have changed no doubt, and the output must have grown with the years, but whatever the form and whatever the number, the stamp of Rivers proclaims the quality. Frequently in cultivating the ground Roman coins of varying values have been unearthed; but, interesting though these undoubtedly are, we must hold to our preference for the gold and silver of to-day. There were pieces of money broken, bent, and clipped, with others almost perfect; but all were passed with a cursory glance, for it was from these that we were to adjourn to see the trees of all shapes and sizes, kinds and varieties, and to these it behoves a gardening journal to give the most attention.

The late Mr. Thomas Rivers did great work in the fruit world, and splendidly has his son trodden in his footsteps. If one dwell a moment on the many fruits emanating from Rivers of Sawbridgeworth one may form some conception of what has been done.

ACREAGE AND SOIL.

The number of acres actually devoted to fruit culture is about 200, but the estate is considerably larger than this, and is utilised for general farming. The advantage of this extra ground is obvious, for it provides new space on which fruit can be placed for a change of ground. As of many other crops the soil becomes "tired" of always supporting fruit, and if a change be not given there will be a certain eventual deterioration in quality. Such must not be, so the crops are changed, and what has been farm land becomes fruit garden, and *vice versâ*. So it is that year by year the same standard is maintained, and it is the constant endeavour of the chief and his two sons to keep at least at the normal level, and if possible to rise above it. Of course with such an area the natural staple varies very considerably, but almost all of it is a medium loam, which suits fruit admirably if thoroughly cultivated.

Speaking of thorough cultivation makes it permissible to mention here that when a fresh piece of ground is appropriated for fruit, the whole of it is deeply trenched and good manure added; thus abundance of soil is loosened, in which the roots may find plenty of food, and from which they come in the form of a mass of fibres. One portion of the nursery faces the south, and on this the trees make wonderful progress—not growing luxuriantly, but producing wood and buds that ripen thoroughly well. Another advantage enjoyed by this nursery is that it is close to the canal and the rail, so that despatch is rendered easy, while manure can be brought close on to the ground. At first glance the soil in places does not look very kind, but it breaks down under culture, and gives a medium than which no better could be desired for the particular purpose that it is used for.

STANDARDS AND BUSHES.

The standards of various kinds of fruits with which so much land is occupied number many thousands. Immense numbers of them are young and in the proper condition for sale, while others are considerably older, and are in profitable bearing. These comprise the leading varieties that find the greatest favour in the various markets. The most conspicuous features of these are the cleanliness of the bark, the openness of the heads, and the number of fruit buds with which each is studded. This year the crop has not been a very heavy one, but the trees promise well for another year. Pears, Plums, and Apples form the bulk of the standards observed in different parts of the nurseries, and whether young or old they look as though they are capable of rendering a thoroughly good account of themselves in the years to come. The several other kinds of fruit grown as standards occupy a considerable amount of space, and are possessed of the same pleasing characteristics.

Numerous as are the standard trees those trained in the form of bushes or pyramids are no less so. As with the standards there are trees of various ages, but there is no variation in quality, all being uniform in this respect. The regularity is very striking as one traverses quarter after quarter and finds the same conditions prevailing in each. It was some of these shaped trees that we examined at the roots, as the lifting was in progress, and were surprised at the extraordinary number of fibrous roots that each one carried. It was not a case of one being good in this respect, but all the trees looked alike. It was apparent, too, that the utmost care is taken in the lifting, for the number of fibres broken was very small, much less indeed than one would have thought from the appearance of the ground, which before the insertion of the tool, does not look very inviting, nor give much promise of clean, healthy roots. Currants, Gooseberries, and Strawberries take up proportionately large areas of ground, and are in capital form.

TRAINED TREES.

Amongst the trained trees we noticed and admired Plums, Peaches, Nectarines, Cherries, Apples, and Pears in all stages from one year old. Besides those in fan and espalier form there were gridiron shaped as well as cordons, with one or two others that are not so popular. Some varieties of each kind were particularly notable as doing better than their neighbours, but few of them leave room for much adverse criticism. The fan-shaped Peaches, Nectarines, and Plums looked wonderfully well, as did the espalier Apples and Pears. Cordons are in strong force, and the quantities of them grown show how rapidly they are advancing in public estimation. One might easily select trees here that would occupy any wall immediately, and they would commence fruiting at once, or small ones could be chosen and trained into the space they were desired to occupy. In the latter case it is obviously not desirable to crop the trees the first season or two, as this is prejudicial to the welfare of the trees.

TREES IN POTS.

The majority of people who were asked for what Messrs. Rivers were most celebrated would be unanimous in responding, "For their pot trees," and the writer feels no inclination to disagree with this verdict, for they,

as a whole, form the best feature of the establishment. Grown by hundreds in the long, light, adequately ventilated orchard houses, they are wonderful examples of what may be done with fruit trees under this system of culture. Repotting was being done, and the manner in which the roots were dragged about with chisels so as to leave room for fresh soil to be put in the new pots was enough to make one gasp with astonishment. "Only annual roots,' said Mr. Rivers, with the most perfect nonchalance as we passed to examine the Apples and Pears, loaded still with fruit. It is probable few cultivators would feel disposed to treat their trees in such a drastic manner; but the condition of those at Sawbridgeworth proves that they do not object in the slightest; in fact, they revel in the treatment that is accorded.

There are dwarf bushes, half-standards and standards, of Peaches, Nectarines, Cherries, as well as of the Apples and Pears just noted. The branches are beautifully trained, so that no obstruction of light occurs at any period of growth, and it is astounding to see the profusion of buds on every single branch, or rather growth, for they are almost too small to be called branches. The trees have produced fruit this year as they did last, and as they will have to do next, unless something entirely unforeseen occur. In comparatively small pots there are bushes of considerable size, and of course it is not possible for them to derive all the nourishment they require from such an amount of soil as that which surrounds their roots. To meet this deficiency, each one is generously fed from the surface, both by top-dressings and by waterings with liquid manure. It is more than probable that upon this feeding depends, to a large extent, the success or otherwise of the trees that are grown.

Oranges and Vines.

Before concluding these notes of Sawbridgeworth we may refer to the Oranges, of which a whole houseful are grown. Some are small and others of good size, but their culture is crowned with yearly success. Grapes are magnificent. House after house is filled with Vines that have been cropping heavily for over twenty years, and show no signs of diminishing. The bunches are made up of large splendidly coloured berries, and nowhere is there a sign of an enemy. There were hundreds of bunches hanging when this visit was paid, and all alike were excellent. With these we must stop, though much more might be said, but this shall be left to the writers of the future.—Visitor.

INTELLIGENCE IN PLANTS.

(*Continued from page* 378.)

In Spiranthus autumnalis there is a boot-shaped disc, which when touched by the proboscis of a bee instantly splits its whole length, and exudes sticky matter, to which pollen adheres. When the bee withdraws its now loaded proboscis it finds it cannot enter another flower of the same age, and is compelled to visit older ones with wider orifices until it gets rid of the pollen, when it can visit lesser ones again. This arranges for the fertilisation of older flowers by younger ones. Darwin says bumble bees begin at the lowest flower on the stem of this plant, and work upwards till they come to one they can enter, and it almost seems in this case as if the bees had some idea there was a mutual benefit to be had.

In the Listera ovata a drop of sticky water is shot out at the invading insect with great precision, and hardens rapidly. If the intruder be weakly or small it is frequently blinded, or even smothered by the explosion. This may be a blunder, and it also may be a bit of Nature's policy. We so often find that we thought was a blunder was quite otherwise, that it is best to wait for further information before libelling any of Nature's methods. The Cattleya is fertilised by the good offices of a bee, and the visitor in leaving the flower turns up a specialised tongue-like stigma called a rostellum, which exudes the sticky matter, and, as usual, in the right place.

The Australian Orchid (Coloena) makes a prisoner at once of any insect that alights on its lip, and really what happens is not yet well understood. In the Dendrobium chrysanthum there is a mechanism which raises the anther lip to have the pollen attached, but this does not always occur; and if the lip is ever raised again it rises with an impetus that sends the pollen up in the air, so that it may fall on the stigma of the same flower, and thus effect self-fertilisation.

The Angræeum sesquipedale of Madagascar has a whiplash-like nectary nearly a foot long, and the honey at the bottom of it has to be got at somehow. It is supposed there is a moth with a corresponding 12-inch proboscis. The sticky matter is round the opening into the nectary, so that this still unknown moth is a requisite here, and the fertilisation does occur. We have to imagine the moth. Here let us ask a question, and find the answer if we may. If the moth is necessary for the plant, was it made for it? Obviously the moth can do without the plant, but the plant cannot do without the moth, and what does it all mean? Is it a sort of partnership, and the partners, one or both, unaware of the fact? When a bee starts out honey gathering, how is it that it only visits one class of flower, as a rule, on that particular journey if it has no idea of its mission?

Catasetum saccatum when touched even by a hair on one of two horn-like processes shoots out the pollen, sticky end first, with great force to a distance of 2 or 3 feet if nothing intervene. Gardeners meddling with these get the discharge in their faces sometimes. The mechanism effecting this expulsion is complicated, touching the horn ruptures a disc. A Catasetum callosum shot its pollen bag on to a window a yard away, where it stuck by its own glue. Many Orchids expel their pollen thus, but there has to be that mysterious ripeness before it occurs. No discharge happens on touching the horn before it is ready.

In the Mormodes Orchid the pollen bags are at the end of a long stem, which is bent downwards and kept in that position, in spite of the growing tension caused by the growth of the plant, till the magic touch; then the usual burst takes place, and the long straining stem is suddenly released, and with the spring bends over the other way, and with that tears itself up by the roots and rebounds into the air. In one Orchid the passage into the nectary is so complicated, that the insect is a very long time in finding its way, and thus does the knowing plant gain the needful time for its sticky matter to set. These nectaries, as I have already said, do not always contain nectar, and whether the plant has so far progressed as to be able to think out a pretty little swindle or no is not quite apparent. Darwin thinks that when there is no nectar there is a compensation in some nodules or excrescences which may be food. One hardly likes to differ in opinion rom such an acknowledged master mind, but a nectary is not needed if there is no nectar, and the nodules do not explain the peculiar shape. It is true peculiar modifications of the original intent are frequent, and it may be that the owners of the nectarless nectaries have, so to speak, changed their views.

The Mistletoe is a curious illustration of this change of purpose. It produces a flower as if it was going to produce a seed in the usual way, and then it develops a sort of gimlet instead, which it bores its way into the heart of its host—usually an Apple or Pear tree, and not on the Oak, as popular fancy has it. It bores in deeper and deeper year by year, and yet it only abstracts water and the salts in it, and does not prey on its host, as is usually supposed, for its general food. In some way it provides its own chlorophyll. If you want to know what this chlorophyll is, I can tell you. *Chloro* means green, and *phyllon* is Greek for a leaf, which is not valuable information. I can tell you further that it absorbs light, many red rays, a good many blue violet ones, and some of the green and yellow rays. What it does with them, and what sustenance there is in a ray of light, is what I cannot tell you.

When you grow a plant in the dark it is not green because it cannot form any chlorophyll, which, again, is an explanation that wants a good deal of explanation. There is no chlorophyll if there is no iron about, but then nobody knows what iron is, even in Sheffield, and in fact the things we do not know are quite numerous, and grow more numerous every time we find anything out.

Amongst other things chlorophyll works a sugar manufactory, a starch manufactory, and maintains a chemical laboratory which can deal with water and carbonic acid and other chemicals, and convert them into plant substances; but to discuss chlorophyll fully would take at least one separate paper all to itself, and more, probably a dozen.

The Dodder (Cuscuta trifolia) is not so considerate to its host as the Mistletoe. I am afraid it is a bit of a thief, and prefers living at the expense of others, like certain members of the very superior human family. The seed of the Dodder has nearly forgotten how to enter the soil; it has developed a gimlet, and bores into its host, which is anything it can find that is green. It is fond of Clover, and knows the difference between that and a dry stick. The Banyan tree has discovered a way of doing without seeds; it drops a bough to the ground, which takes root, and, in time, forms a whole forest of trees, if let alone.

The Aristolochia flower is a fly trap. It secretes a nectar in a tube which the flies can smell, and on entering find a forest of hairs which easily bend inwards and let the burglar in, but as they will not bend outwards the fly has to remain and feed till the pollen is ripe and dusts it all over. Then the hairs shrivel up and the victim escapes to carry the pollen into another similar prison. The common Arum has a similar trap, but in this trap are both the male and female, so that self-fertilisation seems well provided for; but it is impossible, for the stigmas ripen first and lose their fertility, and when the anthers ripen the pollen falls on the imprisoned flies, and, as before, the hairs wither and the flies escape to carry the pollen elsewhere. Now here is a lesson not to let a first glance of things be considered decisive—that is not science. Science means seeing into things, and a first glance inside an Arum flower most people on seeing the male and female parts both enclosed in the same receptacle would say, "Oh, here self-fertilisation is carefully provided for, and well arranged, they are boxed in together for that purpose." Yet, as has been pointed out, it is made quite impossible.

But here is a nut to be cracked by those who will not believe that a plant has intelligence. The common Figwort is fertilised by wasps, and for some reason these creatures in visiting a number of flowers on

one stalk begin with the top one and work their way downwards, whereas bees begin at the bottom and work upwards. Why they choose to do this is one of the many things I do not know, but as the Figwort anthers ripen before the stigmas, it follows that the wasp coming in laden with pollen from another flower fertilises the young flower, and visiting the older flowers last, carries off from them fully matured pollen to again fertilise the younger flowers of the next bunch, which is a decided advantage. Does the wasp know and adapt its visitation to the needs of the plant, or has the plant been cute enough to observe the ways of wasps and hold out special attractions to them? I am afraid I shall have to add this to the things I do not know.

I may as well also confess I do not know why our common Milkwort should keep a sort of miniature public-house. The five stamens and the umbrella or disc over them look very like a barrel, and the doors are open to all comers. Flies of many kinds and moths come in and have a drink, and as some have to pawn their legs or wings for it, one almost wonders if the flower is strictly respectable. These legs are no use to it, however, and wasps seem to be able to tap the liquors and get away without paying anything, but when the rightful guest, a bee, comes in and gets his feet fast in the sticky mass round the barrel, he instantly pulls the shop down and flies off with the pollen to the next, for which sole purpose the said shop was erected. Why the wasp does not get the pollen and the bee does I will add to the growing list of things I do not know.—(*Paper read by* Mr. W. Pickard *at a meeting of the Sheffield Chrysanthemum Society.*)

(To be continued.)

PRUNING TREES IN PUBLIC THOROUGHFARES.

Will you kindly express an opinion on the pruning of the tree, photo of which I enclose, also one of an unpruned tree? In a road in which I have property Lime trees were planted some eight years ago, and they were in most instances, at one end at least, doing well. About six weeks ago the District Council, or its surveyor, put an ordinary employé to prune the trees, and he, with a big pair of secateurs, severed the trees in a shameful manner, cutting the branches very roughly, and leaving snags 3 to 5 inches in length. With other ratepayers I complained, and the surveyor has called in an "expert," who informed him that the trees had been properly pruned. Unfortunately the best and largest trees were all pruned, and I can only send a photo of an unpruned tree in a part of the road where the trees did not do well. Kindly let me have your opinion in an early issue.—W. J. Godfrey, *Exmouth.*

[It is not easy to judge of the matter from a photograph showing only part of the tree. though if the whole extent of the branches, mutilated or not, could have been shown, the effect might possibly be more hideous than it is now. Where trees are properly pruned in and near towns competent persons are employed by parochial or other authorities to do the work. This should always be the case. The proper name for most of the so-called pruning by "ordinary employés" is ruthless, barbarous mutilation. The non-pruned tree is pleasing in outline.]

ROYAL HORTICULTURAL SOCIETY.

October 26th.

Scientific Committee.—Present:—Dr. M. T. Masters (in the chair); Mr. McLachlan, Mr. Veitch, Mr. Douglas, Prof. A. H. Church, Mr. Shea, Rev. W. Wilks, and Rev. G. Henslow (Hon. Sec.).

Galls on Oak Roots.—With reference to the specimens exhibited at the last meeting, Mr. McLachlan observed that the name of the insect was now Biorhiza aptera, and that only one sex (the female) was known as occurring in the root-galls. As soon as it was hatched, the insect climbed to the terminal shoots and laid its eggs in the buds. The result was the common spongy gall, known as the Oak Apple. In this both male and female insects were produced, and were formerly thought to be a distinct genus, under the name Teras terminalis. The females fall down to the foot of the Oak, and lay their eggs in the roots under ground, and so reproduce the root-galls. This dimorphism is characteristic of other gall insects on the Oak.

Cattleyas sub-Pelorian.—Mr. Veitch exhibited two sprays, carrying several flowers of Cattleya labiata autumnalis, having the two front sepals assuming the form of lips. He observed that the same plant had repeated the peculiarity both last year and this, but the lip markings are now more pronounced. The specimens were received from Mr. F. R. Lloyd, of Coombe House, Croydon.

Carnation Leaves, Malformed.—Mr. Douglas exhibited leaves with peculiar horn-like excrescences on the margins. It was suggested that they might be caused by acori. They were forwarded to Mr. Michael for investigation. Dr. Masters observed that a Yucca in the Botanic Gardens, Dublin, produced very similar structures every year.

Cauliflower. Malformed.—Mr. Henslow exhibited a branch bearing a cluster of short Asparagus-like shoots, the leaves being reduced to a bracteate form, suggestive of the name of Broccoli—viz., Brassica oleracea, var. Botrytis asparagoides. Dr. Masters observed that it bore a very unusual appearance, and was really intermediate between a Cauliflower and Broccoli.

Rose Crimson Rambler.

In reply to Mr. C. D. Elliot's inquiry respecting this Rose I quote as follows. All that I vouch for is that this appears in the "Grantham Journal" of 5th October, 1895:—"It was purchased for Mr. Jenner by commission in Japan, in the year 1878, through Professor B. Smith, residing in Tokio at that time, but who was presently, if not still, at Mason College, Birmingham. Mr. Jenner was particularly pleased with its free-flowering and very striking effect, and it was grown for about a dozen years in a private garden. Then Mr. Jenner presented the entire stock to Mr. Gilbert of the Bulb Nurseries, Bourne, Lincolnshire, and he, with his consent, sold it to Mr. Turner of Slough. It was originally called The Engineer, I believe, because an engineer first brought it to Mr. Jenner's or Professor Smith's knowledge; indeed, it was actually shown as such at the Royal Horticultural Society, and received an award of merit on July 8th, 1890. Mr. Jenner consented to the name being changed to Crimson Rambler, which is most appropriate. . . . The gold medal of the N.R.S. was unanimously awarded it at the C.P. exhibition of 1893, when it was described as a climbing Polyantha Rose."

I have no idea who wrote this. The accuracy of part of it could be easily tested. It is said to be quoted from "Rosarian' in a recent number of "Amateur Gardening."—Alan Cheales.

In reply to Mr. C. D. Elliott (page 388) I may say that Dr. Ramsay is probably correct in saying that he knew this Rose forty years ago in the garden of Mr. Jenner at Edinburgh. I visited this garden shortly after Mr. Jenner's death, and Mr. Mungo Chapman, the head gardener, who is now in business at Bridge of Allan, N.B., pointed out to me the original plant, which he said had been given to Mr. Jenner by an engineer who had brought it from Japan. Mr. Jenner had named it Engineer, but it is to be hoped that the ordinary rule regarding prior names may not be enforced in this case. I think that Mr. Chapman said that someone in Yorkshire had been given a plant or plants by Mr. Jenner. Perhaps it was in this way that it came into Mr. Turner's hands. While on the subject of this Rose I may be allowed to say that it is, in some gardens, very long in coming into flower after being planted. I know of several gardens where it has been grown for some years without producing a bloom. This year I saw a plant of Crimson Rambler flowering for the first time after having been planted for three years. In many places, of course, it produces its brilliant flowers in great masses the first year.—S. Arnott.

Preparing Soil for Roses.

The season for planting is now with us, and a few notes on the subject of preparing the positions for them, either in beds, borders, or larger plots of ground, may prove useful to some who contemplate growing a selection of Roses.

Whenever Roses are planted the work should be thoroughly well done, and the first matter to attend to is the preparation of the soil. Roses absolutely refuse to succeed in poor, shallow, uncultivated ground. They cannot obtain the food they require owing to the fact that the roots have not the opportunity of ramifying in a rich fertile medium, whereby they can secure the soluble food and moisture they demand.

The plants may attempt to grow for a time simply because of the inherent vigour they possess, but ultimately they develop weakly, producing but poor wood and foliage, which may probably become a prey to mildew, especially if the plants have to experience dry hot weather followed by wet and cold. Under such conditions the blooming is at least unsatisfactory, if not an absolute failure. In order to avert such disappointing results study neither expense, time, nor trouble in giving the soil thorough and careful preparation, so as to afford the plants a good start, sending them along to become well established.

The ground intended for planting, whether of large or small area, should be thoroughly open to sunshine. It is best, however, if sheltered from rough winds. If the shelter is living vegetation, trees or shrubs, these should not be in close proximity to the Rose beds, or their roots may seriously impoverish the soil. The strong roots of evergreen and deciduous trees will chiefly prove harmful by abstracting moisture, and without a due amount during the period of active growth food in the soil is rendered unavailable.

The above points, however, having been fully settled, turn next to the digging or trenching of the soil. The ground must be well broken up to the depth of 2 or 2½ feet, not necessarily because the roots will occupy the whole depth, but to afford a suitable medium for them to ramify in if necessary. In dry parching weather of summer, when the roots can descend a little deeper, the advantage of a good moist medium is of great advantage. Another reason why a tolerably deep root run is essential is that better drainage is secured should the ground tend to be rather heavy or damp. Shallow and light soil also requires that the subsoil be made of service for the rooting generally to be carried on at a lower level where more uniform moisture prevails.

Trenching ground may be understood to mean that the surface soil and the subsoil are reversed in position by the operation. This is really the case in true trenching, and it is sometimes desirable that this should

be so, but more often than not it is undesirable, for the reason that the subsoil may be poor and very unsuited for the free and vigorous rooting of Roses. Why should the subsoil be poor? Suppose the ground has not been cultivated for more than one spit deep over a long period. The subsoil will probably be stiff, clayey, gravelly or chalky, deficient in available plant food. It requires to be broken up, intermixed with enriching material, and more or less exposed to the energising influence of the atmosphere, which will act upon it beneficially, gradually causing it to yield food by becoming ameliorated and pulverised. This takes place but slowly. It may, however, be much improved by mixing with it better material and manure.

The subsoil being well disturbed, it is not advisable to bring it to the surface, but to deal with it by the operation known as bastard trenching. This is carried out quite easily, and the ground worked two spits deep. If the plot of ground is of good size divide it into two. Along the end of one of these divisions mark out the width of the first trench. Take out the first spit and deposit it on the other half at the same end. The bottom spit may then be broken up, incorporating with it manure, soil, road scrapings, or ashes, whichever will most tend to improve it. This done, mark out the next trench The first spit taken from that deposit on the broken-up subsoil of the first trench mixing with that manure or soil for improving it. The same course of treatment must naturally follow with the others, finally finishing where the soil from the first trench lies.

Beds of small dimensions may have the top spit of soil thrown out, then break up the bottom and intermix the improving material as necessary, or place manure in layers, alternating with soil. Near the surface, however, it is better mixed. Manure in direct contact with the roots of newly inserted plants will prove injurious.

When the upper layers of soil are in good condition it is not so essential to apply manure at the time of planting, but it may with advantage be placed below. Half or thoroughly decayed manure is the best to employ. Cow manure being suitable for light soil, horse manure for heavy soil, and mixed farmyard manure for soils of medium texture. —E. D. S.

Roses for Market.

(*Concluded from page* 388.)

In dealing with the cultivation of Roses under glass, I hardly know where to commence. Young grafted plants of the Teas are used, and quite small plants of the Hybrid Perpetuals from the open ground, the last being worked upon the Manetti stock. This is by far the best stock for pot plants, and never grows so coarse as in the open. These young plants are placed into 32's, a compost of rich turfy loam only being used. When the first season's growth is finished the plants are stood in the open for a couple of months, which will bring us to the early part of September. The ripest plants are then picked out, turned out of pots, a considerable amount of the soil removed and repotted into a 6 or 7-inch size. Strong turfy loam is again the staple of our compost, a little bonemeal and pulverised cow manure being also used. Fresh soil always causes a freer and quicker formation of new roots. The plants are potted much firmer than the average amateur practises. When repotted and pruned they are stood in a cool pit and kept close for a month or so. This induces rapid root growth, and the buds soon plump up ready to burst. These earliest plants are intended to flower about Christmas, and are taken to one section of the house by the middle of October. During this stage quite enough plants for both sections can be stood into one division, which is started at a temperature of 45°, and gradually brought up to 60° Fahr.

During this time the Roses in the borders are also coming along in unison with the pot plants. The roots of the climbers being all under cover is far safer for forcing purposes than when such are planted where many roots would ramble into cold outside soil. Those upon the side walls are not so given to rambling, and will keep to the prepared border. None the less, we give a little outside protection in the shape of straw hurdles leant against the walls where no side pits answer the same purpose. By keeping off excessive wet and the direct influence of weather no harm accrues to the roots.

When the pot Roses have grown sufficiently to need more room, the backwardest are draughted out to the other section, which by that time has finished its crop of Tomatoes or other summer occupants. This section is now heated as well, but the first one, containing the most forward plants, is raised from 5° to 10°. Sometimes a house is filled with pot Roses at once, cramming these in almost as thickly as they will stand, and draughting them off to other houses as becomes necessary and the various summer crops will allow. It is a pity, and would never pay with the present low prices and keen competition, to set the plants far apart from the first, while Tomatoes and Roses go well together, and make use of the house the whole twelve months.

By regulating the temperatures of each section, and by bringing the Roses forward in batches, we get a succession of bloom. When a number of plants have given the greater part of their first crop the temperature is allowed to fall a few degrees, raising this again a fortnight after. It is surprising how much this short partial rest seems to assist in the building up of new growth, which soon comes into flower once more. But this last does not apply to the climbers.

The varieties named do not cease flowering in the same way as our summer and most climbing Roses, but they fall off in quantity at the very time there are plenty to be had under cool treatment. During the whole time of flowering growth has been forming, and can now be steadily ripened preparatory to turning the plants out upon a sheltered border beneath a wall or hedge, thus making room for the Tomatoes. It often happens that one has to select the ripest plants from the two sections, removing these only, and placing those with much young and tender growth into one section for a short time longer. At this time much more ventilation is given, but draughts are as carefully avoided as during the earlier stages. The object is to get as many of the Roses as possible in at the desired time, and yet make room for early Tomatoes, which have been growing on in 3½-inch pots, ready for use as soon as any section can be cleared of Roses.

We must now return to cultural details. From the very first an effort is made to keep a fairly uniform temperature, and upon no occasion should ventilation be accompanied by draughts. This is one of the chief causes of mildew, any sudden change being almost sure to bring on that most disastrous complaint. Liquid manures are given freely after the growth has well started, but not before; nor are these ever used at any great strength, or tied to one kind. Both cow, stable, and other drainage are used. As for artificial manures, we find none better than the best Peruvian guano, at the rate of 2 ozs. to 3 gallons of water, and some soot dissolved in the tank or tub. The latter should always be enclosed in a bag to avoid unpleasant scum. Both guano and soot water will be about the colour of sherry when fit for use, and it is far better, as well as safer, to use it weak and freely than to risk a stronger dose.

Insect foes are kept at bay from the outset, otherwise they are a great expense to keep down, and also injure the plants very much. Begin the battle early, keep a close look out, and use mild measures, then the Rose is no more trouble than other plants. It is always a good plan to damp down with liquid manures—natural—occasionally of a morning, especially if bright.

The same pot plants will do for three or four seasons, but it is well to introduce a few young ones each year, and weed out those carrying much old and sere wood.

Pruning is a most important item. The climbers are cut back rather hard directly the crop of bloom is secured. This induces more young rods from the base, and these grow on while our pot plants are giving a succession of bloom. One must not hesitate to cut back closely simply because the plants are carrying healthy foliage and growths. We cannot allow overcrowding of lateral shoots, and if cut back early, they get away from the Tomatoes in ample time to be fairly well ripened by the end of the summer. Nor do we crowd the house with Tomatoes, but use them as a catch crop, and a help towards the labour account.

Pot Roses need about half of their best wood left, cutting out all weak growth, and keeping the plants fairly compact. Those upon the side walls are pruned and tied up in the usual manner. Between the times of removing the Roses and putting in Tomatoes, give the Roses a good mulch and a thorough watering. If the Tomatoes are not in pots, you will need to mend the border a little each season; but it is far more satisfactory, except as regards the water supply, to grow these in pots, as one has the roots more under control, whereas they would grow very coarse in the unlimited root run provided by the borders.—Practice.

HERBACEOUS PÆONIES.

Your correspondent "A" (page 387) must have a singular lack of power to appreciate beauty in Nature if he disdain the lovely autumn foliage of the herbaceous Pæony. To many his "dirty brown hue" appears as resplendent tints of orange, purple, amethyst, and rich burnt sienna, with an occasional splash of warm carmine. Our fields of Pæonies in September and October cause the inhabitants of the neighbouring parishes to ask for Pæony leaves at harvest festival time to mix with their Gladioli and Dahlias for the decoration of their churches and chapels. People send us money for the foliage from places hundreds of miles away. The Pæony is beautiful in autumn, as in spring and summer; the vivid colour in the young growth as it pushes through the ground is no less charming than the picturesque hues of age. Of course when the time for rest has actually come, and the foliage has really decayed, then this beauty departs, as with other herbaceous or dying-down plants, which is a signal for the gardener to lift the plant if need be, or to clear away the dead stems and leaves. But never should the garden or the plant be robbed to any extent of the lovely autumn Pæony foliage.—Kelway & Son.

Most growers of the Pæony have too much affection for this grand flower, to think of cutting off the leaves as soon as possible after the flowers are over. It is surprising, notwithstanding, to see in some gardens the common Pæonia officinalis fl.-pl undergoing this drastic treatment year after year without apparent deterioration. I should not think of doing it, but your correspondent "A." might find it worth while trying this annually for a few years. The Pæony is very accommodating, but it is possible that the Chinese varieties would not stand such a severe trial as our old double Pæony can do.—A. Hardiman.

Notes & Gleanings

EVENTS OF THE WEEK.—Besides the meeting of the various Committees of the Royal Horticultural Society at the Drill Hall on Tuesday next, there will be numbers of Chrysanthemum shows. As a list of these is given on page 436 it will serve no useful purpose to repeat them here.

—— WEATHER IN LONDON.—On Thursday last a dense fog hung over the metropolis, and both rail and vehicular traffic were greatly impeded. It was not such a bad one as many that have been experienced, nor did it last so long, for on Friday the sun shone gloriously, and the day was quite warm. Saturday and Sunday both opened foggy, but the sun was very brilliant later. Since the latter day the weather has been clear and cool.

—— WEATHER IN THE NORTH.—Without recurrence of frost, with an occasional bright day, the last two weeks of October brought a great deal of foggy weather, with cold N.E. wind. Saturday was very unpleasant, with frequent drizzle. November opened with a beautiful day and evening; Tuesday morning was duller, but calm and dry, with the temperature 44°.—B. D., *S. Perthshire.*

—— GARDENING APPOINTMENT.—After being eight years general foreman, Mr. W. E. Humphreys has been appointed gardener to A. H. Smee, Esq., The Grange, Hackbridge, in succession to Mr. G. W. Cummins. Mr. J. Proctor, for the past six years foreman at The Warren House, Stanmore, has been appointed head gardener to W. M. Sharp, Esq., Chippenham Park, Soham, Cambs.

—— GARDENERS' ORPHAN FUND.—At a meeting of the Committee of the Royal Gardeners' Orphan Fund on the 29th ult. the Secretary announced the receipt of £457 5s. 11d., a bequest from J. W. Thomson, late nurseryman at Hayward's Heath; also the following donations, for which a special vote of thanks was accorded:—Rev. A. Lowe, Rangemore, Burton-on-Trent, proceeds of a collection at Harvest Festival, £6 1s. 6d.; Sandringham Estate Cottage Garden Society, £5 5s.; Wimbledon Horticultural Society, sale of flowers, £5; Uckfield Chrysanthemum Society, sale of flowers, £3 3s.; J. Selway, Betteshanger, £3; per T. Roberts, Local Secretary, Ramsgate, £2 1s.; Forest Hill Horticultural Society, £1 10s.; Hessle and District Horticultural Society, £1 4s. 3d.; Bradford Paxton Society, £1 2s. 6d.; C. Herrin, Maidenhead, £1; G. Carpenter, Byfleet, 10s.; H. Dunkin, Warwick, 10s.; M. Kneller, Basingstoke, 8s. It was decided to hold the annual meeting at Anderton's Hotel, Fleet Street, early in February, when the election of children to the benefits of this Fund will take place. The necessary nomination forms may be had on application to the Secretary.

—— SUNFLOWERS.—A rather amusing belief seems recently to have existed in many directions arising out of the tendency there has been this season—indeed it is generally a tendency—for the giant annual Sunflower to attain to great heights, that each one has the tallest ever before heard of. When plants reach from 9 to 10 feet in height, and have blooms something the dimensions of ordinary frying pans, then does it seem as if such plants were almost elevated to divinity and worshipped, so strong is the element of wonder they evoke. The earlier æsthetics were wise in selecting the annual Sunflower as the floral emblem of their art religion, because English people having none too much of refined or cultivated taste, and æstheticism was but art run mad, do love something big and gaudy. It may be a merit of the Sunflower that it will grow and flower where some better things will not, but the giant form is an overgrown ungainly plant at the best. Mr. Fyfe has at Lockinge what may on the other hand be described as a real beauty amongst annual Helianthuses. He obtained it a couple of years since by intercrossing the giant variety of annuus with the dwarf minimus, and thus he secured a distinct and most useful strain. The plants range in height from 3 to 4 feet, branch literally into bush form; blooms of a neat useful size, with broad effective petals, are most abundantly produced, and for cutting to set up in large vases in halls or big rooms, nothing can be more useful where a striking colour is desired. I should like to see this variety, I do not know how it is designated, put into commerce and widely grown to the displacement of the giant form, which is so useful to breed food for pheasants, but is so ungainly in gardens.—A. KINGSTON.

—— ROYAL HORTICULTURAL SOCIETY.—The next Fruit and Floral meeting of the Royal Horticultural Society will be held on Tuesday, November 9th, in the Drill Hall, James Street, Westminster, 1 to 4 P.M. A lecture on "Roots" will be given at three o'clock by Professor F. W. Oliver, D.Sc.

—— DAHLIA KEYNES' WHITE.—A new Cactus Dahlia named "Keynes' White" has quite recently been honoured by two of the leading German Societies, the Verband der Handelsgärtner Deutschlands and the Werein der Kunst-und-Handelsgärtner, Berlin, with a certificate (*werthzengnisse*), unanimously awarded in both cases. The variety will be sent out by the raisers, Messrs. Keynes, Williams, & Co. of Salisbury; but in Germany, Austria, and Russia, we are informed, plants will only be obtainable through Messrs. Kohlmannslehner and Schwenke, Schöneberg, Berlin.

—— TWO HUNDRED TONS OF SEED FOR INDIA.—It will be remembered that this large quantity of seeds was ordered from Messrs. Carter & Co., by the Government of India last winter, with the idea of ameliorating the distress in districts threatened with famine. The firm has recently inspected some trials made with samples of seed from the various parcels shipped to India, in their grounds at Mortlake, the whole showing results that were considered most satisfactory. Sir George Birdwood, K.C.I.E., of the Indian Office, was present, and expressed his approval of all he saw.

—— WATERING PLANTS.—In reading the well chosen remarks made by "Epacris" under this heading, I thought to myself, do we, as a rule, see plants in better condition in private places (where the knuckling business is strictly carried out) than those of the trade growers? In the case of the latter the hose plays a prominent part, and as to individual treatment, how can a man with thousands of plants in his care stop to examine each one separately? Will somebody be good enough to tell us why the loss from overwatering is so small in the latter case, and the results so good?—A BUSY MAN.

—— ARBUTUS UNEDO.—Intending planters this autumn would do well to include in their list of hardy evergreen shrubs the Arbutus unedo, if they can find a place for it sheltered from the north and north-east winds. The plant is of rather slow growth when young, and should not be crowded among other quicker growing shrubs. A specimen here in full flower is quite an object of beauty, with its many thousands of flowers and berries. Another shrub (deciduous) is the wild Viburnum, which is plentiful in the hedgerows about here. It is worth growing for the beauty of its berries in the autumn. I have inserted some cuttings, which if taken off with a heel root easily, and soon make good plants.—THOMAS WEAGER, *Mardy, Abergavenny.*

—— HARDY BORDER FLOWERS.—Having to give lecture on hardy plants a few nights since at Ewhurst in Surrey, I was very agreeably surprised to find awaiting me an interesting and varied collection, showing how late many will bloom, and also how remarkably useful are they in garden decoration, even after some early frosts may have destroyed tender plants. These flowers were furnished by Mr. Russell, who is gardener to Miss Ewart, a member of the famous Liverpool family, who now resides in that beautiful locality, Ewhurst. There were various Helianthuses, Heleniums, Rudbeckias, Chelone barbata, perennial Asters, the noble Acanthus, perennial Phloxes, China Roses, Japanese Anemones, and numerous others. Remembering that it was so late, October 29th, I could but feel, even more forcibly than ever, how worthy of wide cultivation in gardens were hardy flowers.—A. D.

—— MEDALS AT THE ROYAL HORTICULTURAL SOCIETY.—In our report of the last Drill Hall Show an oversight resulted in the omission of the medals awarded to the exhibitors. These we give herewith. Fruit Committee.—Silver-gilt Knightian medals to Messrs. J. Laing and Sons and J. Cheal & Sons for collections of fruit; to Mr. W. Taylor, Forest Hill, for Grapes; and to Messrs. H. Cannell & Sons for vegetables; bronze Knightian medal to Messrs. J. Carter & Co. for vegetables. Floral Committee.—Silver-gilt Flora medal to Mr. W. J. Godfrey for Chrysanthemums; silver Flora medals to Messrs. J. Laing & Sons for foliage plants, H. B. May for Adiantums and Begonias, and H. J. Elwes for Nerines; silver-gilt Banksian medals to Messrs. W. Paul & Son for cut Roses, and W. Wells for Chrysanthemums; silver Banksian medals to Messrs. G. Wythes, J. Veitch & Sons, H. Cannell & Sons, and T. S. Ware for Chrysanthemums; to Miss Emmet for models of flowers, and to Messrs. W. Cutbush & Son for miscellaneous plants. Orchid Committee.—Silver-gilt Flora medal to Messrs. J. Veitch & Sons, silver Flora medal to Mr. H. J. Chapman, and silver Banksian medals to Messrs. G. Cragg and W. J. Empson, each of whom staged collections of Orchids.

—— A Double White Lapageria.—Mr. John Haigh sends us from Messrs. Crosland Brothers, florists, Sheffield, a flower of the white Lapageria in which the stamens and stigma have assumed a petaloid character. We have seen other Lapageria flowers of a similar nature but none so really double before. The change gives to the bloom a massive appearance, but does not add to its elegance. It is a really double flower and could not possibly produce seed.

—— French Marigolds. — Messrs. Dobbie & Co. write from Orpington—"We have the pleasure of sending you on 1st November a few blooms of French Marigolds to show that, although frost has worked havoc around here, these, at least, are still in the land of the living. They have been cut from a collection of 15,000 plants grown in an open field, and from which many thousands of fine blooms can still be had." [The flowers were of excellent quality, and the colours exceptionally good.]

—— Late Dwarf Beans.—A well-known gardener mentioned to me a day or two since that in spite of some early frosts which had destroyed the Runner Beans, he had still an abundant supply of Dwarf Beans outdoors. The breadth was sown late on a south border expressly to give late gatherings, and over the plants early in October a rough framework was fixed. Over this at night so soon as the temperature fell were thrown some mats, and in that way when so much harm was done to unprotected things, these Beans were saved, and they will probably, should the weather keep open, continue to crop freely until the middle of November. It would be an unusual feature to see handsome Dwarf Beans from outdoors exhibited during November, although perhaps it would be pleaded they were rather out of season.—D.

—— Fibre Plants.—The American Department of Agriculture has recently published an important work on the fibres and fibrous substances of all countries, entitled "A Descriptive Catalogue of the Useful Fibre-plants of the World." The author, Mr. Charles Richard Dodge, special agent in charge of fibre investigations in the Department, asks that any information about fibre plants known to have been employed either commercially or in what may be termed native uses, such as for rough textiles, cordage, fishing nets and lines, and basketry, that has been omitted from this work be reported to him. He would also be glad to hear of any native or aboriginal names by which fibre plants are known in the countries where they grow, which he has not been able to give. He asks, too, for notes on any errors in nomenclature, and for all such information as may enable him to prepare a revised edition of this important work, which is the outcome of a vast amount of patient labour, scientific investigation, and technical knowledge.- ("Garden and Forest.")

—— The Dead Season.—Although in Nature nothing absolutely dies, only changes, yet to our finite minds what we see just now going on around us in gardens in myriads of plants, or everywhere in trees, seems to be death, because there is such a change from universal leaf clothing to one of nakedness, and of beauty in flowers to one of barrenness. It is no mere figure of speech, therefore, to refer to the winter season in gardens as the dead season, although nothing is really dead. The plants, stems, or leaves, with flowers or seed husks, having discharged their part in the economy of Nature, are now but reverting to the elements from which they came, and by the aid of bacteria, the agency of decomposition and change, vegetable matter will soon be converted into gases or mineral substances, feeding other roots or plants and re-appearing in diverse forms and beauty the next or ensuing year. When it is possible for everyone to realise that the same process of change and reversion to original elements is perpetually proceeding in the animal world, the intellectual world will be much wiser and more sensible than it now is. But we part with life and beauty in our gardens when the dead season comes with regret. The objects which have so much interested and gratified us, vegetation and its products in all its forms, we had learned to love. These things had given charm and beauty to our lives whilst they endured. Those of us who have means alone can have them, as happily so many do, in equal beauty and loveliness in glass houses all the winter through ; but to the million such pleasures are not possible, and these have for a season—the dead season—to mourn the loss of loved and familiar friends. Perhaps it is a wise dispensation for us it should so be thus to have a short season of rest for our sentiment. Presently comes a real resurrection, though not one that is abrupt or ushered in with trump or cannon. The Naked Jasmine, the Christmas Rose, the pretty Forsythias, the humble Hepaticas and Daisies, the beautiful Crocus and the pure Snowdrop, these are the *avant couriers*, the harbingers of the new resurrection before the glories of which the dead season reluctant flies.—Gardener.

—— The Beckenham Horticultural and Gardeners' Improvement Society.—This is probably the largest Society of its kind in Kent, numbering some 300 members. It has a reading-room and excellent library, and lectures are provided at intervals throughout the season. At the last meeting (on the 29th ult.) Mr. Bayer's fine collection of Grapes was staged by Mr. Taylor, the same, with additions, to which a silver medal was awarded by the Royal Horticultural Society on the 26th ult. It comprised forty-four bunches, a remarkable display, such as has, perhaps, never been equalled at such a meeting as that at Beckenham. It was a crowded and enthusiastic meeting of earnest amateurs and able gardeners, the lecturer declaring that the Grapes were worthy of the beautiful silver medal of the local Society. The audience agreed in the "usual manner." The Society is fortunate in having such a zealous and competent Hon. Secretary as Mr. T. W. Thornton, F.R.H.S. One of the members of the Society, whose name is, but ought not to have been, forgotten, is such an ardent amateur that he does his digging with the aid of the lantern, and has won over fifty prizes this year, including several at the Co-Operative Show at the Crystal Palace. This is the substance, of which lantern "slide" lecturing and diagramatic expositions are as shadows in comparison, though these may have been helpful. The name of this Beckenham amateur should be forthcoming. A description of his ways and achievements would be interesting.

—— Chinchas Guano and Garden Manure.—That there has been a great falling off in the value of guano generally during recent years seems to be a fact that is generally admitted. This is attributed to the exhaustion of the best natural stores in those islands of Peru from which cargoes were obtained, but a new and valuable source of supply appears to have been discovered in the Chinchas Islands of a distinctly superior character, and Chinchas guano is now regarded by competent authorities, who have no interest whatever in its sale, to be the best brand now obtainable, and quite equal to that imported in the early days of the guano era. The Anglo-Continental Manure Co. (late Ohlendorff's) are importing this rich guano largely. The firm sent out a commission, consisting of Dr. Von Ohlendorff and several chemists and experts, to examine the guano deposits. The substance of their report is embodied in a miniature trade catalogue, which also includes some photographs of a rather striking nature of the Chinchas deposits and millions of pelicans. This, as also containing the analyses of Dr. Voelcker and Mr. Bernard Dyer, is worthy of examination. This is evidently a "strong" manure, and a little goes a long way. As a milder form may be preferred by many persons, a special "garden guano" has been prepared, consisting largely of Chinchas. A sample of this has been sent to us. It is perfectly dry, finely granulated, or dust-like, with the true guano aroma ; handy and cleanly to use as a top-dressing, and for quickly making liquid manure. It is about one-third less in price than the pure Chinchas, and as both are sold in small quantities, from 1 cwt. bags to 1¼ tins, it will not be difficult for cultivators to test both (and they are worth testing), as no information is so good as that which results from experiments.

—— Winter Blooming Pelargoniums. — There is a not uncommon impression that for supplying a rich showy bloom from these plants in the winter special varieties must be grown. That is, however, not so, as literally any good variety of the Zonal section will bloom as freely during the winter as in the summer if the needful conditions be furnished. Anyone who looks in at Messrs. Cannell and Sons' Swanley Nursery during the summer, where houses of Zonal Pelargoniums will be seen blooming profusely, will, if they look in there again in midwinter, see the same or similar houses full of similar plants, also blooming profusely, and will note that practically the same varieties are grown. The only difference then discerned is that whilst in the summer everything externally is in bloom, and the air is warm, in midwinter the ground may be covered with snow, hard frost may prevail, and everything vegetable apparently withered up. It is then that the glory and beauty of Zonal Pelargoniums is seen. There is usually, too, at that time of the year a richness, and even delicacy of tint, in the flowers that render the floral spectacle doubly attractive and beautiful. Such showy bloom as is seen at Swanley may be found in a lesser way in some private gardens, notably at Mr. Haywood's place, Reigate, where Mr. Salter furnishes in midwinter a most brilliant show of flowers. Plants selected from autumn-rooted cuttings, kept through the winter in small pots, shifted on into 48's, then later into 32's, or if very strong into 24's, stood outdoors in the full blaze of the sun, though best plunged in ashes, kept well watered and pinched to produce sturdy bottoms, got in under glass in September, allowed to come away freely at the end of the month, getting a little weak manure water, get into rich bloom in November, and are gloriously beautiful in a moderate temperature all the winter.—A. D

—— WEIGHT OF MARROWS.—In reply to your correspondent, "H. T.," I might say that I have lately cut three Marrows from one plant of Sutton's Long Green, weighing respectively 60 lbs., 47 lbs., and 18 lbs., or a total weight of 125 lbs. This is the heaviest Marrow that has been known in this district.—R. FILKINS, *St. Mary Cray, Kent.*

—— OCTOBER WEATHER AT DRIFFIELD.—Mean temperature at 9 A.M. (corrected), 49·06°. Wet bulb, 47·12°. Mean maximum, 56·2°; mean minimum, 41·06.° Highest, 64·4° on the 20th; lowest, 25·2° on the 14th. Mean of maxima and minima, 48·63°. Mean radiation temperature on the grass, 36·09°; lowest, 18·4° on the 14th. Rainfall, 1·865 inch. Number of rainy days, thirteen. Greatest amount on one day, 0·64 inch on the 14th.—W. E. LOVEL, *Observer, York Road, Driffield.*

—— THE CALIFORNIAN ORANGE CROP.—The Orange crop of California for the coming season, according to conservative estimates based on the present condition, will amount to from 7000 to 8000 carloads, as against 5000 carloads last year. As 300 boxes are required to fill a car. this means an increase of from 600,000 to 900,000 boxes of this fruit. Other authorities consider 4,500,000 boxes as not too high an estimate for the amount of this season's output. California Oranges. from last season are still offered in the Eastern States in the choicest collections of fruits; and in rich quality these rival Rodi Oranges, the celebrated summer fruit from the Mediterranean. Since the first shipments of new crop Oranges from the Pacific coast are expected in New York during November, the likelihood is strong that California Oranges will hereafter be in market throughout the entire year.—("Garden and Forest.")

—— RUDBECKIA GOLDEN GLOW.—We have to thank Mr. Wolley-Dod for his interesting and valuable contribution on page 380. The cottage gardens in Malpas, which, as I have seen for myself, are greatly influenced by having so eminent a flower lover in the parish, are to be envied by many of greater pretensions in the possession of this Rudbeckia. I believe it was Messrs. Pitcher & Manda who brought it to the notice of flower growers as a new plant only a year or two ago. In view of Mr. Wolley-Dod's explicit statement, it cannot be called a novelty in the strict sense of the word, but it is practically a "new plant" to the great bulk of growers of hardy flowers. It is satisfactory to hear it so well spoken of after long experience of its qualities.—S. ARNOTT.

—— ZONAL PELARGONIUMS IN WINTER.—Elsewhere than at Swanley, where a splendid show of Zonal Pelargoniums is a standing attraction, I have nowhere seen such a truly beautiful display of these tender flowers as Mr. Salter has produced at Woodhatch. For plants in 6-inch pots, and for splendour of bloom, the house of these there now really represents a triumph of culture. No wonder visitors, gardeners or otherwise, on looking into the span house where these beautiful plants are, are amazed at the wondrously rich and lustrous colouration seen. There are white, pink, salmon, carmine, magenta, rose, scarlet, crimson, and other shades, the trusses large, and pips of the finest. It is, all the same, very easy to have such a show of Zonal Pelargoniums, for cuttings taken from the old plants are put in in February, rooted, grown on, finally get into 6-inch pots, being firmly potted with a good compost; stood outdoors in the sunshine, kept pinched and watered, then let come away end of August and housed in September.—A. D.

—— TREES DAMAGED BY LIGHTNING.—During the thunderstorm in the N. of London, on July 21st, a Poplar in Clissold Park, Stoke Newington, was damaged in a rather unusual way. The tree, a large one, stood on the edge of a gravel walk; and a low (9 inch) rail of 1 inch iron, which divided the footpath from the adjoining grass (and which was supported for most of its length by dwarf iron posts) had been driven into the tree so as to support the extremity of the rail. There was, therefore, virtually a long horizontal conductor connected to earth at every 8 feet, ending in the tree. When the storm-cloud came near, there was an explosive discharge, *not* at the top of the tree, nor even at any of its branches, but from about 6 inches above where the rail entered, up to about 4 feet 6 inches above the ground; there the outer rough bark was blown off for about 3 feet high by 1 foot broad; along the middle of this the inner soft bark had been grooved (as is often the case with Poplars) and separated from the trunk of the tree. We did not see the tree for two days, and doubtless the edges had been touched, but we noticed one feature to which we desire to call special attention, so that others may see whether the fact we noticed is, or is not, exceptional. The frayed edges on one side of the groove were attached by their upper extremities, and those on the other side by their lower ones—not without exception, but probably six fragments out of seven followed this rule. Of course, this suggests the passage of two currents in opposite directions. We express no opinion, and make no assertions; we merely record what we saw, and ask all who see a tree which has been grooved by lightning, to examine the edges carefully, and report the result. It is, we think, not much use looking at Oaks, as they seem to be generally burst asunder as by an internal explosion.—("Symons' Meteorological Magazine.)

CORNUS.

THOUGH one or two species of this genus are passable as flowering shrubs, it is more for the sake of the foliage and coloured bark that the "Dogwoods" are grown. From a garden point of view they may be divided into three sections—flowering, ornamental foliage, and coloured stemmed.

Of the first section C. florida is possibly the best. It was known to English gardens before the middle of the last century. Early in the present century it was figured in the "Botanical Magazine," t. 526. In the account given with the figure it is stated that the plant from which the flowers were taken for figuring was growing in the Duke of Marlborough's garden, and was 15 feet in height with a spread of 18 feet, a trunk 6 feet high before it branched, 2 feet in circumference a yard from the ground.

Specimens of anything near those dimensions are rarely, if ever, seen now. The most likely reason for this is that it is only in warm and favoured localities that this species does well, plenty of sun heat being required to thoroughly ripen the wood. The flowers are whitish, and 2 to 3 inches across. In autumn the leaves turn to a brilliant red before falling.

C. mas, although not ranking among the best of flowering shrubs, is worth growing both on account of its earliness and the freedom with which the flowers are produced. It makes an upright growing bush with stiff twiggy growth. The flowers are small and yellow. They are produced in clusters from almost every node on the young wood. In a mild spring the earliest flowers open about the end of February, and flowering continues for several weeks It is an European species.

The Japanese C. kousa is said to rival C. florida. As yet it is little known in this country, but if it does not flower more freely than that species it will never become very popular. A dwarf species from Canada, C. canadensis, is useful for planting in damp places in the rock garden. It grows but a few inches in height, and each stem is terminated with a head of small flowers enclosed by a number of rose and white bracts. A figure of this may be seen "Bot. Mag.," t. 880.

Of the ornamental foliage section more can be said, as several very beautiful foliage shrubs belong to the genus. Of C. mas there are several variegated forms, the most distinct being C. mas variegata, and C. mas aurea elegantissima. The former is in habit like C. mas. The leaves are 2 to 3 inches long by three-quarters of an inch wide, with green centres and wide silver margins.

C. mas var. aurea elegantissima is widely different in habit. The branches are pendulous, the leaves small, 1 to 1½ inch long by half to three-quarters of an inch wide, varied in colour, some deep yellow, some with green centres and deep yellow margins, others with green centres and mottled brown and red margins, others green mottled with brown, and yellow and red margins. During summer a plant which is growing freely is a very pretty sight.

C. candidissima variegata has pale green leaves with silver margins. The habit of this is very similar to that of C. mas. C. alba var. Spæthi is by far the most beautiful of the variegated Cornus, and is one of the very best foliage shrubs. It makes a spreading bush a few feet in height. The leaves are about 4 inches long by 2 or 2½ wide, having a green centre and broad yellow margin, the centre part suffused with a lighter shade of green and bands of gold. Towards autumn many of the leaves turn red.

C. alba var. sibirica variegata is a silver variegated form, with leaves about the size of the preceding: it is well worth growing, but is not to be compared with the former variety. C. macrophylla has handsome green foliage. The leaves often measure 6 inches or more in length by 4 in width. It is quite distinct from any other species. C. macrophylla variegata is perhaps better known as C. brachypoda variegata The leaves of this are not nearly so large as those of the type, and many appear to be more or less deformed; it is, however, a pretty white variegated shrub. When young it is a little tender. It grows until late in the year, and frosts sometimes damage the soft ends of the shoots; as it gets older it grows slower and stands better. A large plant 10 feet or more in height is to be seen in the Coombe Wood nursery of Messrs. Veitch & Sons.

Of the coloured-stemmed section much could be said. With the exception of the coloured-stemmed Willows possibly no shrubs make a finer sight on a sunny day in winter than some of the Cornus. Whether grown by the water side, in beds, irregular masses for cover, or as groups in the shrubbery, they are equally effective. C. sanguinea is perhaps the best known. This is often used as a cover plant, and as an undergrowth in plantations; it has red bark. In autumn the leaves turn a fine bronzy red on the upper surface, the under surface being silvery. C. amomum, C. Baileyi, C. Nuttalli, and C. stolonifera, all American species, have bright red bark, as also has the Northern Asiatic C. alba and its varieties. A charming picture may be had in spring if an undergrowth of Snowdrops be made to beds of these red-stemmed shrubs. A variety of C. stolonifera, which has yellow bark, is in cultivation, but is not well known as yet.

Given fairly good soil all can be grown with little trouble, and even in poor sandy soil C. sanguinea and several others give satisfactory results. Whether for large or small gardens, for growing singly, in small or in large masses, these shrubs will be found equally useful.—W. D.

VEGETABLES FOR HOME AND EXHIBITION.

Celery.

(*Continued from page* 359.)

Planting is the next important operation. Abundance of moisture and an ample supply of well-decayed manure are absolutely necessary to produce examples of the best quality. In the formation of trenches opinions differ considerably, some growing their Celery in single trenches, others making them to accommodate two, three, and even six rows of plants. It seems to be entirely a matter of opinion, for if all other conditions are favourable Celery of equal merit can be grown in trenches containing six rows of plants, as in one only accommodating a single row, whereas the former method is economising space and lessening labour, which in many gardens is a matter for consideration. Trenches should run in a northerly and southerly direction, and the soil thrown out to a depth of about a foot. If the trench be wide the soil excavated and formed into a sloping back will prove an admirable place for growing Cos Lettuce.

The soil in the trench must be well broken up, in order to render it friable, and a good layer of well-decayed manure should be forked in. The plants must be carefully removed from the nursery bed with good balls of earth adhering to them, taking great care that the soil is not dry. Plant with a trowel about 9 inches apart, allowing 15 inches between the rows; this is, of course, if the trench contains more than one row of plants. Water freely as planting continues if the soil be at all dry, as neglect in this respect causes a check which often proves disastrous. Continual supplies of water must be given till the plants are thoroughly established, as the Celery plant in a wild state is a sub-aquatic. An occasional soaking with soot water or liquid manure will prove beneficial; but it should not be applied too often, as it is apt to cause rank growth.

Earthing is the next important operation, and should be performed at intervals. Growers for exhibition often wrap brown paper bands round the plants prior to earthing in order to facilitate the bleaching process, and, choosing a few plants, pay more careful attention to these than to the main crop. Care should be taken that the plants are perfectly dry when the earthing is commenced, as any moisture inside the leaves is naturally kept there when the soil is pressed round them, and causes decay. Next remove all sucker growths carefully that may be growing from the base of the plants; and thirdly, tie the leaves up loosely with bands of matting. Break up the soil well, and work it carefully round the stems with the hand, not packing it tightly, or covering above halfway up at the first earthing. The operation may be repeated on two more occasions, allowing about a fortnight between.

When four or six rows are grown in a trench, a quicker method of earthing is often adopted. Two boards the width of the trench are placed on edge between the rows; the space between them is then filled with soil, and the boards being drawn out the soil is worked round the plants with the hands; the boards are then placed in the next row, and the operation is repeated. Protection during severe weather is necessary, and for this purpose a thick covering of dried bracken, where it can be obtained, is admirable, and failing that, strawy litter from the stock yard serves the same purpose.

The well-known Celery fly appears to be the worst pest that attacks the crop, and the larva of this being a leaf-mining grub, working its way under the thin outer tissues, it is difficult to destroy by any application. Prevention is better than cure, and endeavours should be made to debar the female from depositing her eggs on the leaves, by covering them with something that is distasteful to her. A light dusting with soot or dry lime in the early morning, when the dew is on, will do this, but the application must be repeated. If traces of the pest are noticed, it is the best plan to go carefully over the plants and pinch all that are affected, in this manner destroying the grub. I may add that amongst the many varieties of Celery now in the market, the wants of growers for home and exhibition may be supplied by growing to perfection such kinds as White Gem, Sulham Prize Pink, and Major Clarke's Solid Red.

Celeriac, or the Turnip-rooted Celery, is a delicious vegetable in the hands of a good cook, and at some tables it is highly prized. It is easy to grow, and as a long season is necessary seeds should be sown in heat early in March, following the same mode of procedure as recommended for Celery. Any light well-worked soil that has previously been enriched with manure will be suitable, and disperse the plants on the surface at a distance of about a foot apart. Apply water liberally during dry weather, and keep the surface soil well stirred. Take care that all side growths are constantly removed, and before severe weather sets in the crop may be lifted and stored in sand, the outer leaves only being removed. If cultivated in this way there will be no difficulty in producing an abundance of this vegetable, the good qualities of which are, perhaps, not very widely known, or it would be more often met with in gardens.—Grower and Judge.

THE CAMBRIDGE BOTANIC GARDEN.

One of the first lists of plants which I had the opportunity of using for reference in the early days of my horticultural novitiate was the "Hortus Cantabrigiensis," by James Donn, "a catalogue of the plants cultivated in the Cambridge Botanic Garden." It was an edition prepared by Frederick Pursh, a really useful reliable list, containing a large proportion of the plants in cultivation at that date (1819). The preparation of a similar list at the present time would be a formidable undertaking, but an example of the progress made in the past seventy-eight years is afforded by a comparison between the numbers of Ferns grown there when the catalogue was issued and in the present year. An opportunity for making this comparison is at our command, for a list of Ferns and Fern allies cultivated in the University Botanic Gardens, prepared by Mr. R. I. Lynch, the Curator, was issued in January, 1897. From this we gather that upwards of 600 species or varieties are now included, whereas in the catalogue of 1819 the number was 151. If all other groups of plants have been increased in the same proportion, the number of forms included in the old catalogue (about 10,000) would now be advanced to an enormous total. Unquestionably the collection has been greatly increased during the eighteen years Mr. Lynch has held his office, for he brought to his work a critical knowledge of plants that few men have the chance or inclination to acquire. Occasional visits at wide intervals have enabled me to watch the progress of this interesting garden, a most satisfactory advance being remarked each time; but the improvement seemed even more notable on a recent inspection, the only regret attached to which was the inability to spend a longer time in a close examination of the collection.

The extent of the garden at Cambridge does not admit of much attempt at landscape effects, yet there are several attractive features that might rival others on a larger scale. The most notable is the lake, the margins of which are well planted, and an island in the centre is admirably furnished with vegetation down to the water's edge. Very conspicuous on the bank are huge plants of the giant Polygonum sachalienense, which are well adapted for such situations and are seen to the best advantage at a moderate distance across the water, towards which the stems slightly bend, showing their broad ovate leaves very distinctly. In a moist soil, if liberally supplied with autumn dressings of old manure, this plant makes surprising growth every year, and increases rapidly, after the manner of its smaller relative, P. cuspidatum. It is quite hardy, as indeed might be expected from its home in the island of Saghalien, north of Japan. The vigorous growth of the stout succulent stems had caused it to be recommended for cultivation as a fodder plant, but they are not very tempting as a green food. Near the Polygonum is another fine waterside plant which forms a grand bank. This is a slender growing narrow-leaved Willow, that has been grown in the Cambridge collection for some years, and which is regarded as a variety of Salix purpurea. It appears to be of rather dwarf habit, but free, with a slightly drooping tendency.

Perhaps the most majestic plant for the margin of a lake or other piece of water is Gunnera manicata, which grows uncommonly well on the bank quite near the water. It is a stronger plant than G. scabra, and generally proves more satisfactory in cultivation, though the latter is possibly better known. The deeply lobed leaves on long stout leafstalks, like giant Rhubarb, have a very imposing effect. To succeed with the Gunneras they should have a sheltered situation—a moist, well-dug, and fertile soil, with liberal dressings of old thoroughly decayed manure in the autumn or winter. Some slight protection is advisable, a layer of either straw or leaves placed over the crowns being sufficient.

Near the Curator's house is a remarkable specimen of an interesting plant, Ephedra distachya, which is about 15 feet in diameter, and probably the finest example in cultivation. The rigid leafless habit, somewhat like the common Broom, is suggestive of a very different type of vegetation from that which we are accustomed to seeing at the present time. It is included in the family of Joint-Firs, botanically known as Gnetaceæ, which seems to be a kind of intermediate link between the Conifers and other flowering plants. The only near relatives are the Gnetums, perhaps the best known being Gnetum Gnemon, the seeds of which, like those of the Ephedra, have been used for eating when roasted.

Around the glass houses on the sunniest side are narrow borders, in which Mr. Lynch has succeeded in growing a number of succulent plants, chiefly species of Opuntia, very vigorously, and with a little protection in winter they are carried through severe weather safely, and appear, in fact, perfectly at home. Many other plants thrive in this dry warm position, notably Portulacas, of which the numerous varieties prodnce a charming display of colour. As regards curiosities, the following may be noted. In one corner is the Caper plant, Capparis spinosa; then we observe a strong plant of Vitis Coignetiæ, remarkable for its handsome foliage. A large example of the Coral plant both grows and flowers freely, the distinct crimson flowered Gerbera Jamesoni, with many other plants of interest.

A few yards takes the visitor to the rockery, where the occupants are very numerous, and all distinguished by some character of flowers or habit that render them attractive in no ordinary degree; the collection has, in fact, been very carefully formed, and with a critical knowledge of the plants adapted for such a position. A graceful, free-growing, and floriferous plant which occupies a good deal of space on the rockery is

Hedysarum, or Desmodium multijugum, which has long spikes of bright purple flowers, very distinct and effective. Near this is the blue-flowered type of Campanula isophylla, a charming little plant well adapted for culture in pots suspended from the roof of a greenhouse or in a window. The white variety is, perhaps, even a greater favourite—in fact, few plants are more popular in cottagers' windows. Mr. Lynch claims having first brought this plant into general notice, and he certainly did a service to many thousands of humble admirers of flowers who can only indulge their tastes in a very moderate way; and this Campanula being of easy growth, readily increased, and free-flowering, rendering it suitable for all, it might be as appropriately named the "Window Campanula" as C. pyramidalis is termed the "Chimney Campanula."

The Cambridge collection of hardy herbaceous plants is a good one, and includes large numbers of distinct, effective, or interesting plants. The various late flowering members of the family Compositæ were chiefly in evidence at the time of my visit, and amongst these were a trio of Sunflowers that possess more than ordinary value as garden plants. Helianthus mollis is one of these, a North American prairie species, with medium size flowers freely produced, and soft silky leaves. H. argyrophyllus is another elegant plant, with abundant flowers and silvery leaves; and the third is H. cucumerifolius, extremely free and graceful, though the flowers are small.

Concerning the plants in the handsome range of houses a long chapter might be written, but a few notes must suffice. One fact strikes a horticultural visitor, and that is the great advantage, where a large collection of valuable plants is grown, in having the houses connected by a corridor. In many large establishments on the Continent this is the rule, but in British gardens it is more customary to build the ranges of glass in such a way that any particular house is only reached by passing through the others, or, what is worse still, houses are isolated singly or in blocks. When a series of houses are arranged at right angles to a corridor which connects their ends, the advantage in regard to the working routine, the transference of plants from one house to another in severe weather, and in other ways, are so obvious that it is surprising this system is not more generally adopted. At Cambridge the corridor is about 100 yards long, and is rendered very ornamental by a collection of climbing plants trained up the wall and over the roof, narrow borders at the sides being occupied with various dwarfer flowering plants. Amongst the climbers the most notable at the time of my visit were Solanum jasminoides, which was flowering profusely, its trusses of white flowers forming graceful festoons from the roof; and Ipomæa Bona-Nox, a most beautiful and interesting plant; the pure white corollas are nearly 6 inches in diameter, round, and flat, with a long slender tube. For a warm conservatory or the cool end of a stove this beautiful climber is admirably suited, and in common with many of its relatives it succeeds in a compost of light turfy loam and peat with sufficient sand to keep the soil sweet and free from stagnation.

The small plants of Todea barbara, occasionally seen in collections of Ferns, are not particularly attractive; but in huge specimens like that in the temperate house at Cambridge (or in the corresponding house at Kew), the characters of the plant are fully developed, and it appears to much better advantage. It is like a dwarf Tree Fern, and produces peculiar stump-like stems of enormous size. The specimen at Kew is said to have weighed 15 cwt. when imported in a dry state, and the Cambridge plant looks even larger than that; while we have heard of one sent to the Continent which weighed 23 cwt. We are so accustomed to regard the Todeas as choice Filmy Ferns to be preserved with the utmost care under glass cases, that it seems difficult to imagine the gigantic T. barbara (fig. 65) as a relative of the justly named T. superba. T. barbara is a native of Australia, where it is often found on banks in gorges where moisture and shade provide the plant's chief requirements.

FIG. 65.—TODEA BARBARA.

Wreathing one of the pillars in the same house with an abundance of bright green foliage and a profusion of purplish blue flowers was an old favourite—namely, Maurandya Barclayana, which is sometimes seen formally trained over a small trellis in a greenhouse or conservatory, but rarely in the free style now noted, which suits it admirably. To many present-day amateurs this graceful plant is quite unknown, yet it is of such easy growth that it might be included in any collection. It is a native of Mexico, and a member of the family Scrophulariaceæ, and though too tender to stand an average British winter out of doors, yet it will thrive in sheltered positions during the summer months as well as many other Mexican plants. Any ordinary light compost suits it, and it can be increased readily by seeds or cuttings. Asparagus retrofractus, which covers a neighbouring pillar in the same house, is a distinct and graceful plant, the needle-like leaves being produced in a regular radiating manner from the stems. Datura Knighti, with its enormous trumpet-shaped double pendulous flowers, has an imposing appearance. Where there is plenty of space, this Datura, with the powerfully fragrant single flowered D. suaveolens, and the scarlet D. sanguinea, can be grown with satisfaction either in pots or planted out; but they require liberal treatment in respect to manurial supplies, with hard pruning and a period of rest.

But we must hasten on, noting by the way the choice collection of healthy Ferns which fill one house, the Palms and larger growing tropical plants in the lofty stove, the charming Nymphæas and other aquatic plants in a tropical tank. To the collection of succulent plants a long time could be devoted, for this is a department to which the Curator has given close attention for years. Both at Cambridge and Kew large numbers of seedlings have been raised, and the miniature plants are making good progress, many being great raritics, and some exquisite examples of vegetative symmetry like crystallised plants.

To conclude these notes reference must be made to a most interesting plant, which is shown in the house devoted to Mosses and Liverworts, a collection of the minute forms of plant life that is seldom seen in cultivation, even in botanic gardens. The plant in question is the so-called "Luminous Moss," Schistostega osmundacea, that in an early stage of its existence produces a tiny green film-like growth near the surface of the substance upon which it is growing, generally on moist banks, rocks, or in caverns. From some strange arrangement of the cells this reflects the light falling upon it when seen at the proper angle, and the reflected light has a phosphorescent appearance, the Moss itself seeming to be emitting light, as if it were a kind of vegetable glow-worm. The effect is very peculiar, as if it were a kind of vegetable glow-worm, the little greenish fragments glittering with a weirdness rather suggestive of the electric X-rays. What can be the purpose of this peculiarity is beyond my imagination to conceive, but it is only one of the singularities the student of plant life is constantly observing, and Shakespeare might well have been a naturalist when he wrote "There are more things in heaven and earth, Horatio, than are dreamt of in your philosophy."—L. CASTLE.

CHRYSANTHEMUMS

Chrysanthemum Shows.

As is usual at this time of the year we have received numerous intimations of Chrysanthemum shows which are to be held during the coming season. Space, however, can only be found for mentioning those that have been advertised in our columns. If any have been omitted we shall be glad to add them to the following list. We append the names and addresses of the various Secretaries.

Nov. 5th and 6th.—Altrincham.—A. Hay, Navigation Road, Altrincham.
,, 9th and 10th.—Kingston.—E. H. Douet, Ortner, South Terrace, Surbiton.
,, 9th and 10th. Leeds.—J. Campbell, Methley Park, Leeds.
,, 9th, 10th, and 11th.—Royal Aquarium (N.C.S.).—R. Dean, Ranclagh Road, Ealing.
,, 9th, 10th, and 11th.—Birmingham.—J. Hughes, 140, High Street, Harborne.
,, 10th and 11th.—Bournemouth.—J. Spong, Lindisfarne Gardens, Bournemouth.
,, 10th and 11th.—Hanley.—J. and A. Kent, Hanley Park.
,, 12th and 13th.—Bradford.—R. Eichel, 16, Westcliffe Road, Shipley.
,, 12th and 13th.—Eccles.—H. Huber, Hazeldene, Winton, Patricroft.
,, 12th and 13th.—Sheffield.—W. Housley, 177, Cemetery Road, Sheffield.
,, 17th and 18th.—South Shields.—B. Cowan, Harton, South Shields.
,, 17th and 18th.—Hull.—E. Harland and J. Dixon, Manor Street, Hull.
,, 17th and 18th.—Bristol.—E. G. Cooper, Mervyn Road, Bishopston, Bristol.
,, 17th and 18th.—Rugby.—W. Bryant, 8, Barby Road, Rugby.
,, 17th, 18th, and 19th.—York.—J. Lazenby, 13, Feasegate, York.
,, 18th and 19th.—Bury St. Edmunds. G. A. Manning, "Bury Post," Abbeygate Street, Bury St. Edmunds.
,, 19th and 20th.—Bolton.—J. Hicks, Markland Hill Lane, Heaton, Bolton.
,, 25th and 26th.—Leamington Spa.—L. L. Lawrence, 76, Parade, Leamington.

National Chrysanthemum Society.

On Monday afternoon last the Floral Committee of this Society held a meeting at the Royal Aquarium, Mr. T. Bevan occupying the chair. There was a very good display, and the Committee awarded first-class certificates to the undermentioned novelties.

G. J. Warren.—A very large, fine, pale yellow sport from Madame Carnot. Shown by Mr. W. Wells.

Mrs. G. W. Palmer.—A rosy bronze sport from Mrs. C. H. Payne. Also from Mr. Wells.

Lady Isabel.—Immense incurved, broad petals, deep flower; colour blush white, base flowers pure blush pink. Also from Mr. Wells.

Lenaivee.—Large loose spreading Jap, long fluted petals, incurving at tips; white edged pale rose. From Mr. Ollerhead.

Mrs. F. A. Bevan.—Pretty incurving Jap, long and slightly recurving petals, incurving at the ends; colour deep flesh pink, paler reverse. From Mr. W. J. Godfrey.

Geo. Foster.—Large, compact, incurved Jap, broad tightly incurving petals; colour rich yellow. Also from Mr. W. J. Godfrey.

Mrs. Chas. Birch.—Large incurved Jap, with tightly incurving and somewhat narrow florets, which are slightly hirsute; colour white edged pale rose lilac. Shown by Mr. W. J. Godfrey.

Mary Molyneux.—Very large, handsome, incurved Japanese of grand quality, with long, broad, curling, and incurving petals; colour inside rose pink, with pale silvery rose pink reverse. Exhibited by Mr. N. Molyneux, Rooksbury Park, Fareham.

Mrs. N. Molyneux.—Massive incurved flower, very deep and globular; petals arranged rather irregularly; colour creamy white. From Mr. N. Molyneux.

The R.H.S. Award of Merit.

Would it not be well for the R.H.S. to make a change in the system in which the award of merit is frequently made? I am referring to the case when two or more growers exhibit the same variety of plant or flower, and each share the honour. Would it not be better that the award be made to the best specimen? I will illustrate a case. On the 28th October I placed before the Floral Committee of the N.C.S. blooms of the Chrysanthemum Lady Ridgway, to which a F.C.C. was awarded. Someone connected with another firm of growers, gathering that these blooms would be placed the next day before the Floral Committee of the R.H.S., also sent blooms of the same variety, and although these said blooms were only one-third of the size of those which I exhibited, the firm shares equal honour with myself, who really won the award of merit. I think it is time for some such change to be made as I have suggested.

You omit two varieties of certificated Chrysanthemums from the report last week—Madame Phillippe Rivoire and Lady Byron.—W. J. Godfrey.

[Only one, Mr. Godfrey. Mistakes are sometimes made by the most careful and watchful of men. Lady Byron was shown by our correspondent. It is well known as a charming white Japanese variety.]

Chrysanthemums in Surrey.

Having just recently seen three of the finest collections of Chrysanthemums in the county of Surrey, I do not fear to assert that had we in London or elsewhere a county competition, Surrey would occupy a very forward place in it. All of these collections were the property of private growers. The three seen would indeed be hard to beat. They comprised Mr. Tate's, practically as seen last year, champion collection at Woodside, Leatherhead, grown by that veteran, and probably one of the ablest cultivators of to-day, Mr. Mease, whose flowers just now are a treat to see. Then came Mr. T. B. Haywood's superb collection at Woodhatch, Reigate, grown so finely by Mr. C. J. Salter, were arranged in long lean-to's, and mixed up of Japs, incurveds, Anemones, and reflexed. Not only are the blooms of splendid form, but the show is almost a brilliant one.

The third is a less known, but still a splendid collection, grown at Bramley Park, Guildford, for Colonel Ricardo by Mr. H. Paddon, who is also a first-class man, as his grand blooms testify. I found on the 29th ult.—and what magnificent weather there was on that day—these two latter collections to be rather more forward than was the Downside lot seen on the 30th, also a brilliant day. No doubt the others' positions, especially that their houses are lean-to, are warmer, and therefore rather more forcing than is the Downside locality. There the plants are in large span houses, and as Mr. Mease is such a first rate judge as to time, no doubt he will occupy a prominent position as an exhibitor again this year.—A. Dean.

Chrysanthemums in Italy—Rust and Royalty.

Your issue of October 21st was to me more than especially interesting, as it touched on two subjects which have troubled me considerably this season—viz., Chrysanthemum leaf rust and damping of the flowers. The first I do not remember having observed before, and the second has given me little trouble in former years.

The earliest signs of leaf rust I noticed about the middle of September last, there having been previously much rain, and the plants being continually in a saturated condition; feeding I had practically not begun. I immediately syringed all the plants with the old remedy for mildew—viz., sulphur and lime boiled and then diluted. This I did as well as possible with an ordinary syringe, without unfastening the plants from the strained wires, but the parts of the leaves most affected, being the under sides, were more or less untouched by the solution.

Like your correspondent, Wm. Taylor, Niveus I find the most affected with this disease, and I enclose an affected leaf of the variety mentioned. I may also remark that Niveus has mostly damped its flowers with me, although generally it has seemed a grand doer here as in America.

The wood of the Chrysanthemum in this part of Italy does not ripen and remains soft for nearly three parts of the stem. The same applies to Tomatoes, and after a few days' rain the fruit becomes black and the plants rotten. Generally speaking, Chrysanthemums and Tomatoes grow double the height to those in England, although the former are strangely capricious in this respect, but the vegetation is always quick and sappy.

From what I observed when in England, I do not think that in nine cases out of ten—like your correspondent Mr. G. Parrant—overfeeding is at the root of the mischief. It has seemed to me that overwatering, insufficient ventilation and heat when the blooms are expanding, are the chief causes for this distressing disease.

Whether leaf rust has had anything to do with the damping of some of my blooms this year I cannot say, but I should not be surprised were this so, but the rust disease will receive more attention from me another year, and I take this opportunity, if I may, to thank Mr. Abbey for the trouble and pains he has taken in observing the evil, and for suggesting remedies. Sulphide of potassium and the Bordeaux mixture I have always found a splendid cure for mildew of the foliage.

It may be of interest to some of your readers to hear that an exhibition of Chrysanthemums is to take place at Pallanza on the 6th, 7th, and 8th inst. It is the first, I understand, of the kind on the Lake Maggiore, and judging from the number of entries already to hand, promises to be a great success. The gardener of the King of Italy, who cultivates thousands of plants in pots, will be largely represented, and it is hoped that the Queen's mother, the Duchess of Genoa, will be able to open the exhibition. It is needless to add that any English "Mummers" will be cordially greeted, and blooms welcomed.—H. Briscoe-Ironside, *Fallanza, Lago Maggiore, Italy.*

[We are much obliged to Mr. Briscoe-Ironside for his interesting communication, but fear the invitation to his Chrysanthemum compatriots comes rather late for acceptance. Some will see it on the 5th, but many not till the 6th inst. The infested leaf is sent to Mr. Abbey, who will report thereon in due time. A short character sketch of the Italian show would be acceptable.]

Chrysanthemums at Exmouth.

The grand display of Chrysanthemums at the present time at this famous nursery is one of finest exhibitions ever seen in England. In making such an assertion I am not unmindful of extensive and magnificent displays that will be admired during the present autumn in many private and trade establishments. These will, in a vast number of cases, be exceptionally fine, the blooms consisting of a large number of old and tried sorts, with a few, perhaps, of the newer and more recent introductions. Such collections will exhibit good culture, good taste in the selection of sorts, and much judgment in arrangement, so that the special beauty of each variety may be seen at a glance.

At Exmouth are some 6000 plants, almost all novelties of the last two years' introduction, including many seedlings of Mr. Godfrey's own raising, some of which are being proved the second year, ere finally chosen for propagation and distribution. The older sorts are chiefly grown outside in beds for stock purposes, whilst large beds, too, are devoted to a number of free bush blooming varieties for cut flowers. I had hoped when I called a few days ago I should have seen the collection at its best, and I must say I was not disappointed, and although some 600 show blooms had already been cut, but little appreciable difference was made to the magnificent display. And such blooms! The number of first-class certificates already secured by Mr. Godfrey this season, and the grandeur of the blooms he has staged, give evidence of culture, selection, and setting.

Among those to which my attention was called M. Calvat's Topaze Orientale is a new incurved of great distinction, a large flower well up, of a clear sulphur yellow, somewhat in the way of Lord Alcester in form but much superior, the breadth of petal being specially noticeable. Clara Jeanne (Jap) has grand flowers of an apricot orange, in form somewhat resembling Viviand Morel. This will doubtless prove better for cutting purposes than the exhibition boards. Rose Queen (Jap) is a new seedling of Mr. Godfrey's, a free and splendid grower, flowers of large size and lovely form; colour pale rose shaded with salmon; a very deep and full bloom, the petals slightly reflexed. Admiral Ito, a new variety from Japan, is an immense flower of a clear canary yellow, with a soft shade of carmine on the outer edges of the florets, in form resembling Viviand Morel but of much stouter substance. George Foster is a grand bloom of deep canary yellow, globular, with broad florets slightly incurving. G. Gover is another of Mr. Godfrey's seedlings, being a bright rose colour with silvery reverse, large and full, and of good habit. Flamingo is of American origin, deep crimson, very promising, one of the very darkest forms yet seen. Madame Gustave Henry (Calvat), is a very large white flower, with a creamy shade in the centre, fine habit.

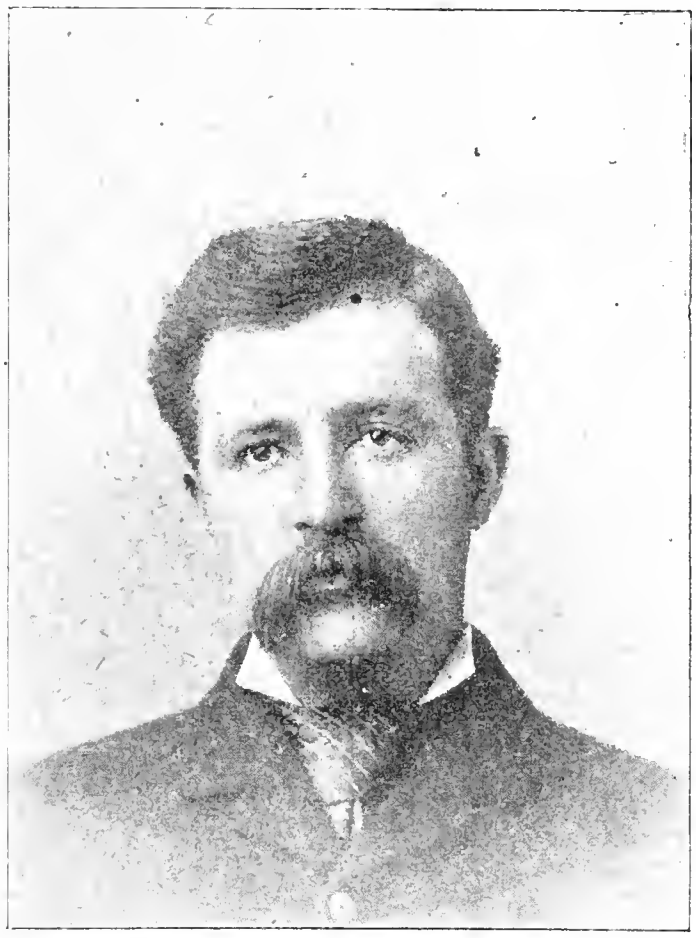

Fig. 66.—Mr. W. J. Godfrey.

Ma Perfection (Calvat), incurved Japanese, splendid pure white, broad florets; a very noticeable flower. Modesto is a magnificent bloom, of rich yellow colour. Mrs. J. P. Bryce, bright crimson, with an old gold reverse; grand form and habit. Belle Mauve is represented by many plants having large and deep blooms, which are of a delicate lavender mauve, without any shading. Ella Curtis is a striking flower, rich old gold colour, with broad petals, measuring on the plant 10 inches in diameter and 8 inches deep. Lady Ridgway, a peculiar shade of crimson carmine with buff reverse, of handsome form. Mrs. Mayling Grant, in form resembles Mons. Chenon de Leché, but stouter and bolder; the centre of the bloom is yellow fawn, shading to salmon apricot. Madame J. Bernard, creamy white; a beautiful flower, one of M. Calvat's last year's introductions, and must not by any means be overlooked. W. R. Prince makes an immense bloom, bright yellow edged with carmine; a great improvement on Sunflower. Dorothy Seward, a large reflexed flower of great depth, bright terra-cotta red, retains its distinct colour to the last.

Pride of Exmouth is here in large numbers. The blooms are of large size, full and deep, the outer florets drooping in a charming manner; the colour is very delicate white, shaded with a clear bright pink. Mrs. Hume Long, bright rosy pink with silvery reverse; the florets are very long, and twist from the centre in a most even manner. Madame Philipe Rivoire, pure white, broad florets, large and full. Sunstone, straw yellow tinted with apricot; very large blooms and of fine form. Exmouth Yellow and General Rocke, deep amaranth; will be heard of again. Mrs. J. Lewis, milk white, full and deep; this is one of Calvat's introductions. Lovely (new), immense blooms of fine form, broad florets of creamy yellow; very good.

Western King, of American introduction, is a good incurving Japanese of the purest white, deep and massive, but hardly up to the requisite size, Wilfred H. Godfrey, rich bronze yellow, large florets, and of good substance. Croada may be best described as an easily grown Mrs. Wheeler. Mrs. F. A. Bevan, is rich pink with long tapering and drooping florets; Mons. Edouard André, carmine red with old gold reverse, petals broad and incurving; King of the Yellows, the richest yellow of the incurved section; Madame E. Roger, sea green incurved Jap; Australian Gold, a yellow of first-class importance; John Neville is like Sunflower, but of a bright chestnut red colour. H. T. Wooderson much resembles Mrs. Harman Payne, but is much more chaste and refined. N.C.S. Jubilee is a clear rosy pink, deep and full. Yet another is Philip Mann, crimson maroon, form of Sunflower, good size and habit. The foregoing will give some idea of the many novelties of sterling merit that are to be seen here. A large number have yet to arrive at their best, and if considered worthy will be kept and tried again for another season.

Adjoining the Chrysanthemum show house is the Carnation house, 150 feet long by 20 feet wide, filled with plants in the best health and vigour, and producing flowers in great abundance. Many are of Mr. Godfrey's own fertilising and raising, and the results are of a pleasing and satisfactory character. Here I noticed Lady Doreen Long, bright yellow with carmine mottling; Pride of Exmouth, flesh pink with smooth edge, nearly as large as a Malmaison; Mrs. Hunter Little, pale salmon pink; Vicar of Exmouth, bright scarlet, in every way superior to W. Robinson; Lady Gertrude Rollo, rose pink, a charming form. An American form is Mrs. McBurney, delicate salmon, very full and of a fine habit. A number will doubtless receive names as the blooms open, for the type seems unusually fine and free.

Of the Zonal Pelargoniums I can say little or nothing at present. In a very short time there will be a sight of dwarf Callas such as cannot perhaps be seen in any other establishment. Just on the point of leaving this grand sight, I am informed that a telegraphic message is to hand from London, stating that Mr. Godfrey has this week been awarded ten first-class certificates and a silver-gilt Flora medal, a sufficient proof of the excellence of those I have attempted to describe.—S. B.

[In consideration of Mr. Godfrey's prominence as an exhibitor, and his services in the Chrysanthemum and Carnation worlds, we have pleasure in presenting herewith (fig. 66) his portrait.]

Amateur Chrysanthemum Growers

Mr. Needs of Heath View, Horsell, has for some years been known as a skilful grower of these favourite autumn flowers, and much interest is taken in his productions as the season comes round. His well-known devotion is almost a byword around Woking, and, moreover, his example and ever-ready advice have caused others to take up their culture with no little success. At the Chrysanthemum show at Woking the productions of these gentlemen will make the amateur classes interesting and instructive, showing what may be achieved by those with limited time and accommodation if they give their minds to the work and persevere to the end. Mr. Needs' house this week presents the same as is usual at this season—a crowd of well grown plants and highly finished blooms. There is little need to move about to see them, so well is the group arranged, and so little space is unoccupied that two persons can hardly stand with comfort inside. Several varieties are late in opening; but this will answer his purpose very well, as he hopes to compete in more than one show, most probably in open classes, success in this section having crowned his efforts in two previous seasons. By doing so he has, perhaps, done as much for the amateur novice as by his cultural example, the classes reserved for them being more open. The most striking flowers at present are Edith Tabor, Miss Elsie Teichman, M. Georges Biron, Australian Gold, Mutual Friend, Modesto, Lady Byron, Charles Davis, Eva Knowles, Mrs. J. Lewis, and Sunflower

Westhall, Byfleet.

To frequenters of Chrysanthemum shows at the Crystal Palace, Westminster Aquarium, Kingston, and a few local shows where first-class blooms were always to be seen in the highest stages of perfection, a few years ago the name of Mr. G. Carpenter, then gardener to Major Collis Brown, was familiar. For a season or two that name has been missed at all these exhibitions, and unfortunately we are not likely to be again charmed with the results of his skill at these or other shows in future. What visitors to shows will lose can only be estimated by those who have seen the magnificent lot of plants he has now in flower, some 800, comprising the cream of the newest and older varieties of Japanese and incurved, arranged in along the back wall of the entire range of new vineries recently erected under Mr. Carpenter's supervision. It would be a difficult task to select fifty of the best during a short visit, so good and even do they all appear, but the following were noted as remarkable:—

Lady Byron, Pallanza, Phœbus, E. Molyneux, Modesto, Mrs. G. W. Palmer, a bronze sport from Mrs. Harman Payne, but without the coarseness so often observed in the original form; Miss Elsie Teichman, Madame Carnot, Madame G. Henry, Frank Hardy, Mrs. J. Lewis, Wm. Seward, exceptionally deep coloured; Sunflower, A. G. Hubbuck, Mrs. G. Carpenter, Hairy Wonder, Madame Campion, Mrs. F. A. Bevan, Marjory Kinder, M. Georges Biron, Thomas Wilkins, Miss Ella Curtis, one of the most striking novelties of the season; International, and Charles Davies.—VISITOR.

BAGLAN HALL.

BAGLAN HALL, the pretty Welsh seat of Mrs. Llewellyn, is at the present time worthy of a visit by all interested in the queen of all autumn flowers. The energetic young gardener, Mr. Gilbert, having served under Mr. Lees in the gardens at New Barnet previous to his coming into Wales, is naturally an enthusiast on Chrysanthemums. That all their requirements are fully understood is proved by the strong stems, fine leathery foliage, and the still finer flowers, these being of the very best—large, solid, graceful blooms, without any trace of coarseness.

We noted some fine examples of Australie, Mrs. W. H. Lees, A. H. Good (magnificent yellow). Mrs. G. W. Palmer, the bronze sport from Mrs. C. H. Payne, has produced some excellent blooms. Elthorne Beauty and Simplicity are grand varieties, the latter being the most perfect white we have as yet seen. A good yellow was noted in Sunstone. Mrs. J. Lewis and Mrs. C. Blick are both fine white varieties. Wood's Pet is a pleasing flower, while Mrs. G. Carpenter, John Aplin, and Calvat's Boule d Or, are all in good form.

Other varieties that are well timed and of good promise are Mons. Chenon de Leché, Thos Wilkins, Mrs. A. H. Weeks, Primrose League, Mons. Chas. Molin, W. G. Newitt (very fine), Mutual Friend, Mons. Gustave Henry, Col. Smith, Mdlle. Marie Hoste, Louise, Phœbus, Duke of York, Madame M. Ricaud, Mrs. C. H. Payne (grand), M. Jerrard, and Modesto. Oceana is developing some fine blooms, as also is Australian Gold. At Baglan the last mentioned variety comes a more refined and better shaped flower from late buds, but loses somewhat in size.—EXILE.

CHRYSANTHEMUMS IN THE ISLE OF WIGHT.

YARBOROUGH HOUSE, BRADING.

MR. GEO. BURT, gardener to J. Darley, Esq., has a very fine collection again this season that has been visited by a large number of growers throughout the Island. The collection is especially interesting, not only because it contains over thirty of the newest and best varieties that have been added this year, but on account of Mr. Burt having a large number of seedlings of his own crossing from some of the latest new varieties that promise well.

Mr. Burt has been successful in obtaining crosses between Madame Carnot and Edith Tabor, and also from Mrs. W. H. Lees and Mrs. Smith Rylands, which nearly all show their parentage in the foliage and stem, but it is very interesting to see how they differ in height, one from Edith Tabor being only about 18 inches high, and producing a fine flower of a deeper yellow than its parent, while another is nearly 7 feet high, and showing a creamy white flower such as may be expected from Edith Tabor × Madame Carnot. It is too early at this date to pronounce any opinion on their merits, but one or two of them at present are very promising, and will, no doubt, find their way into commerce.

Amongst the forwardest of the newer varieties are Mrs. S. C. Probin, a fine solid incurved Jap of a clear soft pink; Mrs. C. Keyser, yellow splashed red; Mrs. D. Dewar, white; Simplicity, another fine white; Mrs. C. Orchard, deep primrose; Mr. G. Langdon, long petals splashed chestnut red on a yellow ground; Elthorne Beauty, pink; Mrs. Hume Long, Oceana, fine yellow; Mrs. F. A. Bevan, Pride of Exmouth, Modesto, Australian Gold, Mons. Hoste, Arona, Edith Tabor, Miss Elsie Teichman, Mrs. John Shrimpton, Matthew Hodgson, Hairy Wonder, and Eva Knowles. Mr. Burt has also a pink sport showing from Madame Carnot, but it is not quite forward enough to describe it correctly. It appears to have a lavender shade suffused with pink.

WOODLANDS VALE, NEAR RYDE.

There is a very good collection of varieties in this very pretty and well kept place, but Mr. Heath is to be condoled with on account of the ravages of the new disease, Puccinia Chrysanthi, or Chrysanthemum rust. Mr. Heath has no idea whence it came, but it is virulent in its course, and scarcely one has escaped. It is my first acquaintance with the fungoid pest, and the figures and description in the *Journal of Horticulture* a short time back give one an idea of its character, but in reality it is much worse than it appears in the woodcut. The prolific spores that fall from the under sides of the leaf smother everything, being of a brown snuff colour.

Notwithstanding this drawback, Mr. Heath has some very fine flowers of both incurved and Japanese varieties. Amongst the best of the former are Chas. Curtis, Major Bonnaffon, Mrs. J. Gardiner, Jeanne d'Arc, Lord Wolseley, Madame Darier, and Golden Empress. The best of the Japs are Western King (very fine), also Phœbus, H. L. Sunderbruch, Mdlle. Marie Hoste, Sunflower, Edith Tabor, Mrs. H. Cheesman (very fine white), Australian Gold, L'Iscre, Viviand Morel, and others.

MORETON, SANDOWN.

Mr. H. Love has again a dwarf, bright, and interesting collection of the cream of the newest and some of the best of the older varieties, and no doubt some of the honours of the N.C.S. and other exhibitions will fall to his share. Among his best are Yellow Madame Carnot, coming several shades darker than Australian Gold, Royal Sovereign, very fine; Lady Hanham, good; Sunstone, Mrs. Hume Long, Viscount Roger de Chezelles, Simplicity, good; Pride of Exmouth, Modesto, Mrs. C. Orchard, Elthorne Beauty, Mons. Hoste, Mons. E. André, Beauty of Teignmouth, Edith Tabor, Mons. Chenon de Leché, and Phœbus.

OSBORNE HOUSE, COWES.

Mr. G. Nobbs, gardener to her Majesty the Queen, has been very successful again this season in producing a splendid show of fine exhibition blooms. Notable amongst the rest are Mrs. H. Weeks (very fine), Mrs. Hume Long, Reine d'Angleterre, Charles Davis, Mrs. Briscoe Ironside, Phœbus, Madame Paul Lacroix, very pretty creamy white, with a canary yellow shade in the centre; Mrs. W. H. Lees, Hairy Wonder, Madame Ad. Moulin, H. T. Drewett, International, Viviand Morel, Ed. Molyneux, Duchess of Wellington, Etoile de Lyon, Edith Tabor, Modesto, Col. Chase, and Amiral Avellan. The incurved are represented by some good blooms of Robert Petfield, Lord Wolseley, Prince Alfred, Madame Darier, and others.

SALTWOOD, EAST COWES.

The winner of the Isle of Wight challenge cup last season—Mr. Butler, gardener to S. Bird, Esq.—has consequently made a name and reputation for himself throughout the Island, which will be worthily upheld by his collection this season. The Japanese are large, solid, and bright; and the incurved of excellent quality. Among the best of the former are Oceana, grand; Lady Ridgway, tawny buff and red, a huge spherical bloom in the way of Australie; Mrs. H. Weeks, Lady E. Smith, large solid white incurved Jap; Mons. Chenon de Leché, Edith Tabor, Simplicity, Graphic, Australie, fine; Pride of Exmouth, very fine; Thos. Wilkins, Mrs. W. H. Lees, Phœbus, Mons. E. André, Pride of Madford, fine; Modesto, H. Jacotot Fils, Mons. Hoste, fine; Mrs. Hume Long, W. Wright, two very large fine pinks; J. Bidencope, Mutual Friend, and Hairy Wonder.

Conspicuous among the incurved are Duchess of Fife, very large and fine; Chas. Curtis, Major Bonaffon, Robert Petfield, Mrs. R. C. Kingston, Princess of Wales, and the various types, including Richard Parker, true; Globe d'Or, Ma Perfection, true, incurved here; Perle Dauphinoise, large, rather long but pointed florets; Harold Wells, very broad florets, rather loose in the centre; Wm. Tunnington, Nil Desperandum, and others.

LADY HARPER CREWE'S, EAST COWES.

There is a very select and good collection grown here by Mr. Joblin, the gardener, which includes, amongst others, some of Calvat's new varieties of this season. Conspicuous in the collection are N.C.S. Jubilee, a very fine, large incurved Japanese, soft silvery pink; Iserette, buff and terra cotta; Mrs. J. Lewis, a grand addition to the whites, a much improved Mdlle. Marie Hoste; Baronne A. de Rothschild, rather quilly; Australian Gold, Edith Tabor, Pride of Madford, Lady Byron, Thos. Wilkins, Phœbus, Madame Carnot, Robert Owen, Chas. Davis, Viviand Morel, William Bolia, International, and Amiral Avellan.

CLARENCE HOUSE, EAST COWES.

Mr. Martin, the very energetic gardener here, has got a very useful collection of the popular flower, which includes some very good Japs, and also incurved. Chas. Curtis, Miss M. A. Haggas, Lord Wolseley, Mrs. Heales, Queen of England, Emily Dale, Baron Hirsch, Bonnie Dundee, Lucy Kendall, and Madame Darier, are the best of the latter; and Western King, Louise, Modesto, Phœbus, Reine d'Angleterre, L'Isère, Edith Tabor, Mrs. Rd. Jones, Mrs. H. T. Drewett, Mons. Hoste, Oceana, Col. Chase, Alice Seward, and International the best of the Japs.—C. ORCHARD, *Bembridge, I. W.*

CHRYSANTHEMUMS IN THE NORTH.

WITHIN the limits of a day's drive round Hessle the following establishments are well worthy of a visit—Welton House, Brantinghamthorp, Swanland Manor, Tranby Croft, Hesslewood, Hessle Cliff, and Woodleigh. The Hull Chrysanthemum Society is largely indebted to these places for filling up the local classes with the magnificent miscellaneous groups, Chrysanthemum groups, and cut blooms which have made the Hull Show famous. Having accepted a cordial invitation to spend a day in the district, by arrangement the evening previous I met the gardeners in charge of the above places at the bi-monthly meeting of the Hessle Gardeners' Improvement Society. This arrangement simplified the programme for next day, so that much more ground was covered than would otherwise have been possible.

WELTON HOUSE, BROUGH.

On entering the gardens here we found ourselves facing an entire reconstruction of the glass department, wisely directed so that no break in the supplies is experienced. Two fine ranges of plant houses, with some forcing houses, are already completed, and an extensive vinery is in course of erection. The plant houses are already furnished with the fine specimen plants which find their way to the York and other northern shows. Of Chrysanthemums we found a well-grown collection, including large bush plants specially grown to furnish the conservatory in the new year. That fine variety, Mrs. R. C. Kingston, now generally distributed, and nearly everywhere giving great promise this year, was one amongst several other seedlings now under trial. Mr. Lawton speaks highly of the quality of a Japanese variety of a rich apricot colour, but at the time of my visit the blooms were not far enough advanced for comparison with the standard varieties; its constitution and habit, however, are everything which can be desired. Another incurved seedling,

having a constitution equal to Mrs. R. C. Kingston, but much dwarfer in habit, was developing blooms of the character of Robert Cannell in its best form, the individual florets of a good length and firm smooth texture, incurving perfectly ; the colour a warmer and altogether richer tone than Nil Desperandum.

The following varieties were conspicuous in the general collection :—John Lightfoot, Madame Carnot, Chas. Shrimpton, Stressa, Thos. Wilkins, Chas. Lawton, M. Chas. Molin, H. L. Sunderbruch, and Madame Ad. Chatin.

Brantinghamthorp.

This estate is situated four miles from Welton, through a beautiful country, the roads flanked with thriving plantations in the full glory of their autumn tints. At the entrance to the gardens we were met by Mr. Hotham, the gardener, who has long devoted his attention to the Chrysanthemum, the beautiful coloured Mrs. R. King having originated as a sport under Mr. Hotham's care. Here we found about 400 fine plants. The Queen and Princess of Wales types are fully represented, both sections giving promise of perfect development. Jeanne d'Arc, Brookleigh Gem, C. H. Curtis, Mrs. R. C. Kingston, and Lord Rosebery were all very promising. Fine blooms among the Japanese were numerous, specially worthy of notice Rose Wynne, Duke of York, Hairy Wonder, Good Gracious, Souvenir de Petite Amie, Phœbus, Robt. Owen, Edith Tabor, Chas. Shrimpton, International, Pride of Madford, and Maggie Blenkiron.

Elloughton Vicarage.

On our return journey we called to view the Rev. E. Bennett's collection of bush specimen Pompons. This gentleman is an enthusiastic amateur gardener, who personally carries out all the most important cultural operations in connection with his plants. The flowers are chiefly used for the decoration of his own church, but the plants have also repeatedly made their mark at the Hull Chrysanthemum Show, and been greatly admired there as examples of good cultivation. Free-blooming varieties of good habit are selected, and the plants again show vigorous health, promising a fine display of bloom.

Swanland Manor.

This is the charming residence of Sir Jas. Reckitt, and those who know Mr. Wilson, the popular head gardener, recognise him to be a genial good fellow, and those who meet him in the exhibition arena, especially in grouping, after the awards have been made, have also good reasons to remember him with respect. Mr. Wilson does not grow a large number of plants, but the selection of varieties and the manner in which they are kept in hand display good judgment.

The buds are well timed and were opening freely, the following being noteworthy :—Western King, Mephisto, La Esmerelda, Australie, Graphic, Milano, Miss Elsie Teichman, Lady Byron, Simplicity (grand), Phœbus, Mrs. Gower, La Moucherette, M. Demay Taillandier, Modesto, E. Molyneux, Mrs. Briscoe Ironsides, Falka, Australian Gold, Pride of Exmouth, Directeur Tisserand, and Robert Owen. Mr. Leadbetter was waiting my arrival at Swanland, where after partaking of Mrs. Wilson's bounteous hospitality, we were soon on our way again.

Tranby Croft.

Here we met another contingent of mummers from the Beverley district, and we had to hurry to the Chrysanthemums. The iucurved varieties were classified in the different types ; standing in single rows in the early Peach houses the plants received an abundance of light and a free circulation of air all round them. The buds of the Queen and Princess of Wales type gave every indication of developing blooms of the highest grade. In the general collection of incurved D. B. Crane, John Fulford, Mr. James Murray, Mrs. R. C. Kingston, Lord Rosebery, Jeanne d'Arc, and Brookleigh Gem were very promising.

In the Japanese the following were noted for evidence of high finish : —Miss Rita Schroeter, Duke of York, Mrs. J. Lewis, Edith Tabor, Niveus, Australian Gold, Pride of Exmouth, Pride of Madford, Lago Maggiore, E. Molyneux, President Carnot, Gustave Henri, M. Demay Taillandier, Major Bonnaffon, Mrs. G. Newitt, Emily Silsbury, and Thos. Wilkins.

Hessle Wood.

Another sharp drive landed us at the entrance to the gardens of F. R. Pease, Esq., where I found Mr. Picker in consultation with his employer *re* extensions in the glass department. After being introduced to that gentleman, and my business explained to him in the most courteous manner, he postponed the matter in hand, and accompanied us all round the garden, displaying the greatest interest in everything. Coming to the Chrysanthemums, which, like everything else at Hessle Wood, are well looked after, I found the following varieties most noteworthy :—Nianza, Milano, Lago Maggiore, M. Demay Taillandier, M. A. de Galbert, Duchess of Wellington, Simplicity, Ed. Molyneux, Louise, Pride of Madford, Oceana, M. Ad. Chatin, Australian Gold, Edith Tabor, Pallanza, Madame Carnot, John Seward, and Chas. E. Shea.

Hessle Cliff.

This is the residence of Mrs. Whitaker, and her gardener, Mr. Jarvis, is well known as one of the best cultivators in this neighbourhood, and at present holds the very handsome challenge trophy of the Hull Society for the best group of Chrysanthemums. We found plants at all heights, cut-backs, tops, and naturally grown, many of the rooted tops not more than 9 inches to a foot high, cut-backs nearly as dwarf, carrying remarkably well developed flowers, the following varieties showing up prominently :—Mrs. E. T. Trafford, Viviand Morel, Phœbus, Pallanza, Boule d'Or (Calvat's), Louise, and some wonderful plants of W. H. Lincoln, carrying seven or more fine blooms, with Souvenir de Petite Amie, scarcely inferior. In the incurved grown in the ordinary way, the Teck family promised well, as did the Princess of Wales type.

Woodleigh.

The residence of A. Smith, Esq. (gardener, Mr. Mason), a close neighbour of Mr. Jarvis, was included in the day's programme, but much to my regret the shades of evening were falling before we had finished inspecting the Hessle Cliff collection, and by the time we reached Woodleigh it was quite dark, and we were unable to find Mr. Mason. I cannot close these notes without expressing the deepest gratitude to all for the kindness and hospitality on every hand, which made a hard day's work one of the pleasantest experienced by—A Yorkshire Gardener.

Notes from the Far North.

Now that the shows are getting close at hand one gets interested regarding the prospects of the well-known champions, and begins to wonder how their plants are looking. Naturally one feels a special interest in those within the circle of one's own neighbourhood. We therefore took the liberty of calling the other day at Rossie to see the plants grown by Mr. David Nicoll, who has gained a more than local reputation as a Chrysanthemum grower and exhibitor. We were highly delighted to see his plants so healthy and promising, the majority of them evidently having their buds well timed. They have made strong growth, splendid foliage, and although they seemed tallish as a rule, they were well ripened and surmounted by plump, promising buds.

The autumn has been a capital one in this locality for ripening the wood, and we shall probably see a large amount of blooms above the average in quality at our northern shows this year. There is not the danger in our colder climate of getting the wood over-ripened which growers further south have to fear. Mr. Nicoll includes in his collection a goodly number of the novelties, as well as the older sorts, which come up to the exhibition standard.

Australie, James Bidencope, Le Moucherotte amongst the coloured varieties are very promising ; also Mons. Chenon de Leché, very dwarf in habit and most distinct in colour. Amongst the yellows we observed Sunstone, very strong ; Modesto, gorgeous colour, extra ; Phœbus and Oceana, a pair of splendid varieties, which will be popular ; Edith Tabor, a refined and lovely bloom ; and last, but by no means least, the yellow Carnot, with nice promising buds. Whites were in abundance, such high-class sorts as Mutual Friend, Simplicity, Mrs. J. Lewis, Mrs. W. H. Lees, Mdlle. Thérèse Rey, Madame A. Chatin, Madame Carnot, and many more, which it is not necessary to enumerate here. Taken over all, the collection bears ample proof of careful and intelligent culture, and we doubt not will give a good account of themselves on the exhibition boards. —Albyn, *Perth.*

Liverpool Chrysanthemum Notes.

In the course of a week or so we shall be launched into the midst of the Chrysanthemum fray, which is sufficient in itself to tax all the energies of our best growers. I have—for this season at all events—departed from my usual custom of sending early notes on our best collections, from the fact that the truest idea cannot be guaged of their qualities at the present time, and as they are more susceptible to damp in some places than others, the inferences drawn cannot always be accepted as quite correct. I hope, however, to deal with several collections later on, also to notice some that have not been mentioned in these pages, but who, if not exhibitors, are equally worthy of mention.

Of the season itself nothing but good can be written. We have had fine growing weather, and a dry autumn ; but perhaps the greatest wonder of all has been the almost entire absence of the usual autumnal gales, which have in former years caused the greatest havoc amongst the plants. The usual older varieties are in capital form, and I have already noticed some excellent new ones, but of these I must speak anon. Our exhibitors, Messrs. Carling, Haigh, Vaughan, Eaton, Burden, Williams, Osborne, and Greene, are all up to the usual standard, and should give an excellent account in the best of company.

The opening exhibition in our district is the Blundellsands, Waterloo, and Seaforth, a Society which has made much progress within the past few years, and which is held on November 5th and 6th. Liverpool are subject to the City Council for the use of the handsome St. George's Hall, than which no finer place can be found in which to hold the autumn show, and it is to be sincerely hoped that visitors will support the Committee to the best of their bent, and I feel sure they will not be disappointed with the splendid display arranged by the second city in the kingdom. Music of the highest class has been arranged for, and the show promises to be one of great excellence in flowers as well as fruit. The grand challenge cup, value 20 guineas, and 10-guinea money prize, which was won last year by Mr. Townshend, gardener to Col. Lloyd, Aston Hall, is already the topic of the day, and Mr. Townshend will have to be specially good to retain it this season as his own property. With these few notes I leave the issue at stake, confident that the Judges appointed will work to the satisfaction of all exhibitors. I may add that the date fixed was November 10th and 11th, but the hall not being available the dates have been altered to the 9th and 10th November, as advertised in your columns, so will exhibitors and visitors kindly make a note of this ?—R. P. R.

SHOWS.

TORQUAY.—October 27th.

The Torquay District Gardeners' Association held a most successful show on Wednesday, October 27th. One of the principal features was a well filled class for table decorations, there being ten entries. These occupied one end of the hall with beautiful effect. Mr. P. W. Bushby (Mr. F. Peacock, gardener) won the first prize with a light and tasteful arrangement, Lady Macgregor (Mr. Davis) running him very close for second. A most striking arrangement was that of Mrs. Wilson with Gloriosa blooms and Grasses. The groups were grand, that of Dr. W. Ford Edgelow (gardener, Mr. L. R. Prowse) receiving the N.C.S. silver medal in addition to the money prize given by the Association.

The chief honours in the cut bloom classes were secured by the Rev. H. Hutchins (Mr. J. Hill), Mrs. J. Wright (Mr. W. H. Peale), and Mrs. T. Barkley (Mr. R. W. Hodder), the latter showing splendid blooms cut with long stems, in vases.

The trade growers were in strong force, Mr. W. J. Godfrey staging a large number of novelties, as did also Mr. Wells of Redhill and Mr. Gee of Teignmouth. Mr. W. B. Smale was represented by a grand bank of bloom, prominent among which were Mutual Friend, Lady Byron, and Mrs. H. Weeks. Messrs. Curtis, Sanford & Co., Ltd., with Chrysanthemums and other plants; Horn & Sons, Burridge & Sons, Tuplin and Sons, R. Veitch & Son, R. Beachey & Co., and W. Allward also exhibited, as did Miss Lavers, Capt. W. Fane Tucker, and Lady Macgregor. The Salon Orchestra attended, and the receipts at the door far exceeded those of any previous show. The arrangements were carried out by an efficient Committee and Mr. F. C. Smale (Hon. Sec.). The balance in hand at the end of the year is expected to reach £50.

BATTERSEA.—October 29th and 30th.

This exhibition, which was held in the Battersea Town Hall on the above dates, is always very interesting, especially from the amateur's point of view. The major portion of the prizes are competed for by residents in the immediate neighbourhood, and whose conveniences are exceedingly limited, while their inconveniences are more than proportionately great. Bearing this in mind, nothing but congratulation can be offered, for the flowers were, in almost all cases, highly creditable. The Battersea Society is not a very old one, but since its inception it has done much to foster and to extend the love of gardening in the district. The monthly meetings are most successful gatherings, and these, with the arrangements of the show, are admirably managed by the Hon. Secretary, Mr. J. O. Langrish, who works thoroughly well for a good cause.

There were a few open classes, of which one of the chief was for a group of miscellaneous foliage and flowering plants. This, unfortunately, only brought forth two competitors, who each showed creditably. The premier position was assigned to Mr. Carter, gardener to P. Purnell, Esq., Streatham, and the second to Mr. J. Portbury, Putney Heath. Mr. J. Freneh, gardener to Mrs. Barclay, Ambleside, Wimbledon, staged well in the class for eighteen Japanese, and well deserved the first prize. Amongst his best blooms were Simplicity, Australie, Mutual Friend, Pallanza, Mrs. C. Harman Payne, Mrs. H. Weeks, Edwin Molyneux, and Australian Gold. Mr. J. Portbury was a fair second. Mr. J. French was also first for twelve Japanese in not less than eight distinct varieties. Messrs. J. Brown and J. Portbury were second and third as named.

The flowers staged by Mr. J. Brown, Norman Road, Wimbledon, in the class for six Japanese, distinct, were of excellent quality. The varieties represented were Phœbus, Viviand Morel, Lady Byron, Mutual Friend, Col. W. B. Smith, and Beauty of Teignmouth. The second prize went to Mr. J. French, and the third to Mr. J. Portbury. For a similar number of incurved flowers, Mr. J. French, with fair examples of Mrs. R. C. Kingston, Jeanne d'Arc, C. H. Curtis, Madame Darier, Lord Wolseley, and Brookleigh Gem went to the front. Mr. J. Portbury was again second.

For a group of Chrysanthemums, arranged in a space of 6 feet by 6 feet, Mr. W. H. Riddle, Wandsworth Common, was a capital first. His well-grown plants carried fine flowers. Mr. C. Hemstead was a good second, and Mr. J. Daniel third. In the class for a smaller group of Chrysanthemums, the prizewinners were Messrs. A. W. Bolton, W. A. White, and W. J. Stringer, each showing creditably. It is impossible, considering the pressure on our space just now, to name the prizewinners in the numerous amateurs' classes, though we noticed some charming flowers in several of them.

Miscellaneous exhibits were fairly numerous and of average quality. The principal display in this section of the show was made by Mr. Robert Neal, Wandsworth Common, who arranged a large group. Amongst the many well-grown plants were Palms, Ferns, Ericas, Bouvardias, Marantas, Cyperus, and Chrysanthemums. Having been carefully arranged, these looked very well. Mr. N. Davis sent several handsome Japanese varieties, as did R. Garton, Esq., Worplesdon Place, Guildford. In each case the flowers were of good size, clean, and well coloured.

BRIGHTON AND SUSSEX.—November 2nd and 3rd.

This was well up to the average, but we did not think the exhibits quite equalled those of last season. Groups were good; so, too, were the cut flowers, but there was a lack of any special feature, and these have now become a great attraction to this exhibition. For a group, 12 feet in diameter, Mr. G. Miles, Dyke Road Nursery, Brighton, was well ahead, the group being enlivened by dwarf Crotons, Dracænas, and Caladiums at the base. Mr. Miles was also well in front for a smaller group, again putting up a very tasteful arrangement. For a group of 9 feet diameter Mr. W. E. Anderson, gardener to B. Parish, Esq., Melodia, Preston Park, won with a graceful exhibit, and good flowers. In the two last classes Mr. J. Hill, gardener to W. Clarkson Wallis, Esq., Springfield, Withdean, was a close second, and was most successful in the classes for plants, winning first for four standards, for one ditto, for four dwarfs, for four Pompons, and for a specimen pyramid.

Mr. T. Fairs, gardener to R. Cloves, Esq., Hassocks, was second for four standards, and first for four pyramids. Throughout the show plants were good. The first prize for an amateur's group was secured by Mr. C. F. Gillam, 75, Waldegrave Road, Preston, who also secured the Society's silver medal.

For thirty-six Japanese there were twelve competitors. Mr. J. R. Heasman, gardener to Mrs. Oxley, Fenn Place, Turner's Hill, Sussex, was placed first, his best six being Phœbus, Madame Carnot, Modesto, Western King, G. J. Warren, and Mrs. C. Keyser. Mr. J. Stredwick, Silverhill Park, St. Leonard's-on-Sea, was just beaten by Mr. T. Davey, gardener at St. Leonard's Forest, Horsham, for second place. For twenty-four Japanese, Mr. Wallis, gardener to Mrs. Mews, Hartfield, won, Mr. Davey again following. Mr. Wallis was also ahead for twelve incurved, being followed by Mr. J. R. Heasman. Mr. Harris, gardener to Lieut.-Colonel C. P. Henty, Arundel, was a good first both for twelve Japanese and six incurved varieties; while Mr. T. Davey, St. Leonard's Forest, Horsham, won for six Anemone-flowered and for six reflexed.

Apples and Grapes were the chief features here, dessert Apples being particularly good. For three bunches of any white Grape Mr. W. Taylor, gardener to C. W. Bayer, Esq., Tewkesbury Lodge, Forest Hill, won with some well-finished bunches of Muscat of Alexandria; Mr. Harris, gardener to Mrs. Eversfield, Denne Park, Horsham, following. Mr. Taylor was also first for three bunches of black, staging Alicante in a well-finished condition; and again for three bunches of Gros Maroc. For three of any black variety Mr. J. Gore, Polegate, won with Gros Colman. For four dishes of dessert Pears, and also for two ditto stewing Pears, Mr. G. Goldsmith, gardener to Sir E. G. Loder, Bart., Horsham, was ahead in very strong competition. Four dishes of dessert Apples brought out no less than seventeen competitors, Mr. G. Goldsmith winning with Blenheim Orange, Cox's Orange Pippin, King of the Pippins, and Ribston Pippin, all in good form and highly coloured. Mr. G. Duncan, gardener to C. J. Lucas, Esq., Warnham Court, Horsham, was second.

Among the miscellaneous exhibits, not for competition, Messrs. Balchin & Sons must not be missed. Fruit, flowers, plants, and a most gracefully decorated kiosk were the chief features. Messrs. Cheal and Sons, Crawley, and Messrs. Cannell & Sons, Swanley, also made good stands. Some beautiful Violets came from Mr. House, Bristol, but these we may perhaps note more fully when space is not so crowded.

SOUTHAMPTON.—November 2nd and 3rd.

The annual Exhibition of the above Society was held in the Skating Rink as in former years. The Rink was well filled, cut blooms and groups forming the principal features of the show. The first named consisted chiefly of Japanese, although incurved were well represented. Under the management of Mr. Fuidge, the popular Secretary, and working Committee, the arrangements of the show were carried out in a most creditable manner. Fruit and vegetables were well staged.

The principal class in the cut blooms was for eighteen Japanese, distinct, which brought nine competitors, the first prize falling to Messrs. Elcombe & Son, Romsey, with bright, fresh, and well arranged blooms of Pride of Exmouth, C. H. Payne, A. H. Wood, Australie, Graphic, Lady Ridgway, Reine d'Angleterre, Dorothy Shea, Mrs. Lees, President Nonin, E. Molyneux, Mons. Hoste, C. Davis, Phœbus, Chenon de Leché, Viviand Morel, Oceana, grand; and M. E. Rosette. Second, Mr. G. Nobbs, gardener to her Majesty The Queen, Osborne, Cowes, I.W. Third, Mr. R. West, gardener to H. J. Wigram, Esq., Northlands, Salisbury.

For the same number of incurved, distinct, Mr. F. G. Foster, Brockhampton Nurseries, was a good first with small but well finished blooms of the following:—C. H. Curtis, Mrs. R. C. Kingston, J. Agate, Miss D. Foster, Duchess of Fife, Miss V. Foster, Baron Hirsch, Madame Darier, Mrs. J. Murray, Globe d'Or, Empress of India, Princess of Wales, Brookleigh Gem, Mr. J. Kearn, Bonnie Dundee, Prince Alfred, Jeanne d'Arc, and Yvonne Desblanc. Mr. J. Agate, nurseryman, Havant, was a good second, and Mr. R. West third. For eighteen blooms, not more than two of any one variety, the first prize went to Mr. W. Goss, gardener to W. G. Roy, Esq., Beams, Marchwood. Mr. R. West was a good second, and Mr. J. Nobbs third.

In the class for twelve Japanese, distinct, Messrs. Elcombe were first, staging blooms similar to their other first collections. Second, Mr. L. Dawes, gardener to P. Ogilvie, Esq., Rosecroft, Hambledon. Third, Mr. G. Nobbs. For the same number of incurved, distinct, Mr. R. Woodfine, gardener to Col. Boyd, Emsworth House, Emsworth, was an easy first, staging blooms of good quality. Second, Mr. R. West. Third, Mr. J. Agate. For the best single bloom of Japanese, Mr. H. M. Mose. Belmont Nursery, Sholing, was an easy first, staging magnificent Viviand Morel. Second, Mr. L. Dawes, with Duke of York. Third, Mr. G. Nobbs, with C. Davis. Amateurs were not very well represented, but Mr. H. H. Lees, 54, Cedar Road, Southampton, showed some splendid blooms, taking the prizes in all classes.

For the best collection of Chrysanthemums grown in pots, arranged in a space measuring 10 feet by 6 feet, quality and general effect only to be considered, brought four competitors, but Mr. C. Hosey, gardener to J. C. E. D'Esterre, Esq., Elmfield Hill, was a long way ahead with a splendid group, and well arranged; Mr. G. Brixey, 44, Liverpool Road,

second. For a single and four specimens Mr. H. G. Holloway, gardener to Mr. A. Brown, Hill Farm Dairy, was easy first. Mr. E. Carr, gardener to W. A. Gillett, Esq., Fair Oak Lodge, Bishopstoke, and Mr. C. Hosey second and third in the order named.

CROYDON.—NOVEMBER 2ND AND 3RD.

THE Public Halls, Croydon, were brightly beautiful on the above dates, when the Croydon Chrysanthemum Society held its tenth autumn show. The number of exhibits was very large, and in several of the classes the pointing was extremely close. We must congratulate the Secretary, Mr. Beckett, on the arrangements, and particularly on the punctuality with which the judging was commenced. Other secretaries might well take an example from Croydon in this respect. We give below notes of a few of the chief classes.

The chief class was for thirty-six cut blooms of Japanese Chrysanthemums in not less than twenty-four distinct varieties. This was open to the whole of England, and a 25-guinea challenge cup went with the premier prize. The cup can only become absolute property of anyone winning three times out of five. Needless to say the competition between the seven exhibitors was very keen, Mr. E. Mills, gardener to Frank Lloyd, Esq., Coombe House, Croydon, eventually securing the coveted position. The flowers were generally of good size, a few being small, but all were fresh and well coloured. The varieties comprised G. J. Warren, C. Davis, Miss Elsie Teichman, Prefet Robert, Mons. Chenon de Leché, Edith Tabor, Madame Carnot, Mrs. C. Harman Payne, Louise, Phœbus, Hairy Wonder, Mons. Panckoucke, G. C. Schwabe, Viviand Morel, Mutual Friend, Lady Byron, Vicomte Roger de Chezelles, President Borel, Graphic, Australie, Edwin Molyneux, Sunflower, John Seward, Madame Carnot, and H. L. Sunderbruch, some of course being in duplicate. The second position was assigned to Mr. D. Gibson, gardener to J. B. Johnstone, Esq., Kingston-on-Thames. The flowers were equally fresh and clean and beautifully coloured. Amongst the best were Mrs. H. Weeks, Australian Gold, Phœbus, Duke of York, Madame Carnot, Mutual Friend, and Mons. Ch. Molin. Mr. D. Gooch, gardener to T. Wickham Jones, Esq., Selhurst, was third, and Mr. W. King, gardener to J. Colman, Esq., Reigate, fourth, both staging handsomely.

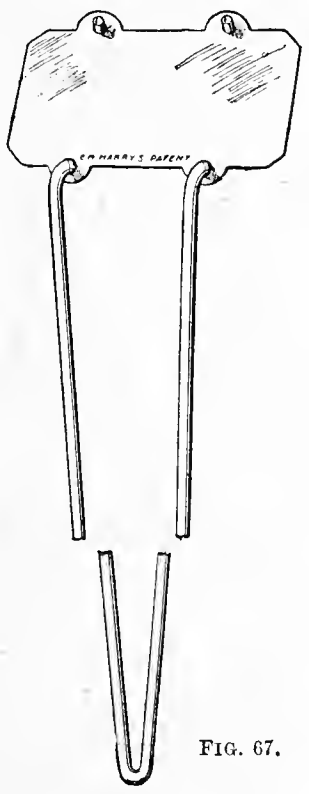

FIG. 67.

For a group of Chrysanthemums, arranged in a semicircle of 10 feet by 5 feet, there were six competitors, each showing well. Mr. A. Sparshott, gardener to Mrs. Hill, Park Hill Rise, was first with splendidly grown plants carrying good flowers. Mr. C. Lane, gardener to E. H. Coles, Esq., Caterham was second; and Mr. D. Gibson a creditable third. Mr. G. H. Cooper, Sydenham Road, was the only exhibitor of four trained plants, and received the premier award. For a smaller group, Mr. R. Gladwell, gardener to S. Smith, Esq., South Norwood, was first; Mr. G. Lewry, gardener to Mrs. Blake, Duppas Hill, second.

Two exhibitors brought eighteen distinct incurved. Mr. W. King secured the leading award with a stand composed of Empress of India, C. H. Curtis, R. Petfield, Lord Wolseley, Violet Tomlin, Globe d Or, Major Bonnaffon, Prince Alfred, Mrs. Heale, Queen of England, Mrs. R. C. Kingston, Bronze Queen of England, Mons. R. Bahuant, Brookleigh Gem, Mrs. D. B. Crane, John Lambert, Jeanne d Arc, and Lucy Kendal. The second went to Mr. G. Prebble, gardener to M. Hodgson, Esq., Shirley.

For six incurved, one variety, Mr. G. Prebble was first with Jeanne d'Arc, and Mr. W. Hattin, gardener to A. Smith, Esq., second with Baron Hirsch. Mr. H. Reddin, gardener to J. W. Bird, Esq., West Wickham, sent half a dozen splendid singles, and received the first prize. There were three stands of six Japanese, one variety, the first prize going to Mr. S. Mills with beautiful examples of Mons. Panckoucke; Mrs. Smith being second with Mons. Chenon de Leché, and Mr. L. Gooch third with Phœbus. For two vases, each containing six blooms, Mr. J. Slater, gardener to F. Smith, Esq., Park Hill Road, was first, Mr. G. Cooper second, and Mr. F. Smith third.

In the class for eighteen incurved, in not less than twelve varieties, Mr. G. Prebble was first, and Mr. J. Munro, gardener to J. Bucknall, Esq., Beckenham, second. Mr. R. Gladwell was first for twenty-four Japanese, in not less than eighteen varieties, with some excellent flowers. The varieties represented were Phœbus, Duke of York, Edith Tabor, Edwin Molyneux, Louise, Madame E. Capitante, Primrose League, Thos. Wilkins, Australie, C. Davis, Dorothy Seward, Mrs. C. Blick, Mons. Panckoucke, Mons. Chenon de Leché, Viviand Morel, Col. W. B. Smith, President Borel, Oceana, Souvenir de Petite Amie, Louise, and Charles Davis. The second prize went to Mr. E. Mills.

Besides the classes already referred to there was a division confined to single-handed gardeners and amateurs residing within a 5-mile radius of the Croydon Town Hall. In these there were some charming exhibits, and amongst the chief prizewinners we observed Messrs. N. Wrightson, A. Dyer, W. D. Asquith, W. Hattin, A. Osmond, C. Stew, T. Williams, H. Reddin, C. Perrett, W. Watson, H. C. Crook, F. T. Wright, and A. G. Lipscomb.

Miscellaneous exhibits were very numerous and of excellent quality. They were, too, thoroughly well diversified, and consequently the interest in them was much enhanced. We must give them in brief, as is our almost invariable rule at this season of the year. Messrs. J. Peed and Sons, Norwood, sent a collection of Apples and plants of Begonia Gloire de Lorraine; Messrs. J Laing & Sons, Forest Hill, splendid Apples, Pears, and miscellaneous flowering and foliage plants: Mr. W. Wells, Japanese Chrysanthemums in fine form; Messrs. J. Cheal & Sons, Crawley, richly coloured Apples and Pears; Mr. T. Butcher, Croydon, floral decorations; Messrs. G. Bunyard & Co., Maidstone, beautiful Apples; Mr. H. Anstey, Norwood, floral designs; and Mr. J. R. Box, Croydon, Apples.

BLACKHEATH.—NOVEMBER 3RD AND 4TH.

THIS Show was held, as in former years, at the Rink, Blackheath. The groups appear to have grown numerically, but the effect produced by the exhibitors was not by any means pleasing, being much too crowded and formally arranged. The cut bloom classes are always a strong feature at this Show, and the present occasion was no exception to the rule. The decorative classes were also a good feature.

The premier honours for a group of Chrysanthemums, arranged in a space of 50 superficial feet, were awarded to Mr. A. Hollands, Lee Park Nursery, Lee, for a very bright group, comprising both Japanese and incurved varieties. Mr. E. Dove, gardener to W. E. Fry, Esq., Bickley Hill, secured the second position with a group of very fine plants, the arrangement being the best in the competitive classes, but it lacked the freshness so visible in the first prize group. Mr. T. Dobson, gardener to F. J. Preston, Esq., Lee, was third.

The groups of flowering and foliage plants were beautifully arranged. First honours fell to Mr. J. Lyne, gardener to H. F. Tiarks, Esq., Chislehurst, with an effective display of Orchids, Crotons, Aralias, Palms, and other flowering plants. Second place was awarded Mr. G. B. Lees, gardener to R. De Quincey, Esq., Chislehurst, for a very effective exhibit.

The class for eighteen Japanese and eighteen incurved varieties brought out a good competition, the premier award going to Mr. T. Robinson, gardener to W. Lawrence, Esq., Hollingbourne, for a very even exhibit, the incurved being neat and well finished. The best blooms were Madame Carnot, Pride of Madford, Eva Knowles, Mons. Hoste, Phœbus, and Edith Tabor in the former section, while the latter contained good flowers of J. Agate, Chas. H. Curtis, Empress of India, Madame Darier, Jeanne d'Arc, and Robert Petfield. The second prize was awarded to Mr. Walter Harvey, gardener to R. B. Martin, Esq., M.P., Chislehurst, who had a very strong stand of Japanese, but the incurved were considerably weaker. The third prize was allotted to Mr. J. Lyne, who must have run the previous exhibitor very closely.

The first prize for twenty-four Japanese, distinct, was awarded to Mr. J. Blackburn, gardener to J. Scott, Esq., Chislehurst, for a very fine exhibit. Violetta, Col. W. B. Smith, Madame Gustave Henry, Mutual Friend, Eva Knowles, Primrose League, and Viviand Morel were the most notable varieties. Mr. J. Blackburn was again successful in the class for twelve Japanese, distinct, with a fine even exhibit. Mr. Chas. Dann, gardener to R. J. Balston, Esq., Maidstone, second. Mr. Ed. North, gardener to J. Wells, Esq., Catford, third.

Mr. W. Harvey was placed first for twelve incurved varieties, distinct, having Chas. H. Curtis, Lord Wolseley, Jeanne d Arc, John Doughty, and Mrs. J. Kearn, good; Mr. J. Lyne second, with a less even exhibit. In the class provided for reflexed varieties, Mr. R. Leadbetter, gardener to A. G. Hubbuck, Esq., Chislehurst, was well ahead, followed by Messrs. J. Lyne and T. Couldry, gardener to W. H. Sedgwick, Esq., Grove Park, in the order named.

Mr. C. Jordan, gardener to H. Hoskier, Esq., Hayes Common, was most successful in the class for six blooms, one variety, coloured, with very fine blooms of Phœbus. Mr. E. Russell, gardener to T. Pim, Esq., Crayford, second. The latter exhibitor was placed first for six blooms incurved, one variety, with fine Chas. H. Curtis. Mr. G. B. Lees, gardener to R. De Quincey, Esq., Chislehurst, second with Baron Hirsch. Mr. E. Dove, third.

A large group of Chrysanthemums, interspersed with Palms and Crotons, came from Mr. H. J. Jones, Ryecroft Nursery, Lewisham. The exhibit was arranged in Mr. Jones' well known artistic style, and presented a very bright and attractive appearance. A group of miscellaneous plants from Messrs. Cutbush & Sons, Highgate, comprising Gloire de Lorraine. Begonias, Ericas, Oranges, Chrysanthemums, and Palms proved a very attractive feature of the show. The stage was prettily decorated with Palms, Crotons, Dracænas, Ferns, and a variety of autumn-flowering plants by Messrs. J. Laing & Sons, Forest Hill. Mr. Wm. Wells, Redhill, exhibited a fine stand of Japanese blooms, also bunches of single and decorative varieties.

HARRY'S "IDEAL" LABEL.

MR. G. H. HARRY of Brockley has sent us a label (fig. 67) which almost, but not quite, explains itself in the annexed illustration. The inventor claims for this label neatness, cheapness, durability, and convenience for writing. It differs from other labels of the same general character in what may be termed the plate being moveable for the purpose of writing the names. That is so. It is easily removeable, and appears firm when fixed; also the twin stem when forced into the soil does not show the least disposition to twist round, but the name faces the direction required The "Ideal" label is made in different sizes and patented.

THE YOUNG GARDENERS' DOMAIN.

Bothy Customs—"On Duty."

As a bothyite I am of opinion that "Well-Wisher's" remarks (page 384) are not all that could be wished for by the young gardeners of to-day. Some head gardeners seem to regard the young men under them as their personal servants. While in a previous situation I was asked to sing at a concert. This I consented to do, so was placed on the programme; but as I was leaving the bothy the head gardener returned from his evening drive, he called to the man on duty, who happened to be attending to the fires, so I was then ordered, though "off duty," to take out his horse, and do other work, and break an engagement that I was fully entitled to make. As regards the reference to the young gardeners who were off duty being sent to the station on Christmas morn to unload slack, I will only say that if "Well-Wisher" approve, as he seems to do, such procedure, I think he should change his *nom de plume*. —M. T. Saunders.

Malmaison Carnations.

So popular has the Malmaison Carnation become that in many large establishments we find houses devoted entirely to the cultivation of the several varieties. Where this is the case their management is much easier than when grown with other plants, and when well grown they are unsurpassed by any other flowering plant in cultivation. They may be grown so as to produce a succession of their delicioously sweet-scented flowers for the greater part of the year.

So far as my experience goes the best mode of propagation is by layers, which operation may be carried out at intervals, commencing as soon as the first flowers are over. A range of cool frames will be found suitable for layering. The first point, and a very important one, will be to secure some good fibrous loam of a sandy nature, using two parts of this, chopped fine, with one of leaf soil, one of peat, and about one-quarter of the whole of silver sand. The plants should have been previously taken out of their pots and plunged in a somewhat slanting position, when it is much easier to get the young growths down for layering. The foliage is stripped from the fourth joint downwards, commencing the cut just below the fifth joint, upwards through the fourth, peg down with the tongue open, and make as firm as possible with the fingers. Select only healthy growths for layering, and shade from the hot sun. Give, however, as much light as possible, and keep the frames closed for about a week, when air should be given freely. A gentle dewing over with a syringe will prove beneficial at this stage, but afterwards every effort should be made to prevent moisture coming into contact with the foliage. At this stage they will require very careful watering.

When sufficiently rooted they may be potted singly into large 60's using a compost similar to that advised for layering, with the addition of a small quantity of mortar rubbish. Place the plants again into the cool frames near to the glass, keep these rather close for a few days, and shade from hot sun. When root action has again commenced admit air freely. In about a month they ought to be ready for repotting—the strongest plants into 7-inch, and the remainder into 6-inch, which will be quite large enough for flowering. Use a compost of three parts good fibrous loam, one of peat, and about the same quantity of sheep manure dried and rubbed fine, with wood ashes, and one-quarter of a part of mortar rubbish, charcoal, and silver sand. Give chemical manure as soon as the plants have filled the pots with roots about once a fortnight, and an occasional watering of clear soot water.

When required for winter flowering these plants are placed in 9 and 10-inch pots, using a compost similar to that used for the previous potting. The young growths are neatly staked, and any kind of artificial feeding is withheld until the flower-buds appear. The three essentials to success are watering, potting, and abundance of air in favourable weather. Houses in which Malmaisons are growing should be made as light as possible, with top and side ventilation at each side of the structures; blinds are also necessary to protect the flowers. The temperature I have seen them do best in when growing is about 40° to 45° at night and a little higher during the day. The flowering house should not fall below 50° at night. When in flower bees must be excluded from the houses, as they destroy the scent and shorten the duration of the flowers.

Owing to the dryness of the atmosphere red spider will be rather troublesome; green fly will also attack the plants, and do a considerable amount of damage in a very short time. Either of these pests should be quickly eradicated, either by fumigating or syringing with some approved insecticide. Any diseased plants ought to be removed from the healthy ones, and either destroyed or put into a separate house to flower, removing also all decayed leaves as soon as discovered. Malmaisons are, I believe, more subject to fungoid diseases than any other Carnations, and therefore need more careful attention. I am of the opinion that by keeping the plants rather dry during winter, but not allowing them to suffer for want of water, will act as a good preventive. I may add that the preceding notes are the result of practical experience, and will, I hope, be of assistance to readers of the Domain.—J. F. D., *Yorkshire*.

Blossom and Bees.—A Pear tree is now in full bloom in a gentleman's kitchen garden, situated within about a mile and a half of Leeds Town Hall. The tree has been visited daily for a week past by bees, which have been observed carrying pollen into their hives, kept in a neighbouring garden. Summer must linger long in these northern latitudes.

HARDY FRUIT GARDEN.

Strawberries.—The oldest beds of Strawberries should, if they are not profitable to retain, be pared off, and the ground dug deeply or trenched, adding a liberal quantity of manure. It is not advisable, if it can be possibly avoided, to plant on the same ground at once or in the spring. The ground will better suit some other crop.

Healthy quarters or beds of Strawberries not older than three years may be retained another season. Clear off at once all superfluous runners and large shabby leaves; remove also young plants which have rooted between the rows, preserving the best, if further stock is required, for spring planting. Lift these carefully with a trowel, and plant 6 inches apart in small beds on a piece of good ground. Fork up strong, deep-rooting weeds; but disturb the ground no further, as digging between rows of Strawberries injures the roots, the largest proportion of which are near the surface. They are fibrous, and very numerous. The best method, therefore, of finishing off the beds, giving them a neat appearance, and at the same time benefiting the plants, is to afford a rich and liberal dressing of decayed manure.

Young Plantations.—Recently planted quarters may be lightly hoed over to destroy seedling weeds and promote growth of the plants. Any runners which may have extended ought to be cut off. Mulching these with manure at the present time will scarcely be necessary.

Raspberries.—Where the old bearing canes of Raspberries have not been cut away since fruiting these should be removed now, cutting them close to the base. The weakest of the current year's canes may also be thinned out, leaving four to six of the strongest for next season at each stool. The canes will require shortening to the tops of the trellis or stakes in the course of the winter. Finally remove weeds of large growth and apply a heavy mulch of farmyard manure without previously digging the soil between.

Preparing Soil for Planting Fruit Trees.—Every preparation ought to be made for the season of planting fruit trees which is now close at hand. The soil in most cases requires to be dug deeply, not necessarily trenched, so as to bring unfit soil to the surface, burying the good below. When ordinary deep digging in the usual method is scarcely sufficient, the plan of bastard trenching may be adopted, this insuring that the present position of the layers of soil will remain the same, but well broken up. A depth of 2 feet of well-worked soil is ample, though when light and dry it might be deeper with advantage. If fairly rich and fertile the addition of manure in the course of preparation will not be essential. Poor ground ought to have some well-decayed material intermixed with the soil as stirring and breaking up proceeds. When light and sandy, strong loam or pulverised clay may with advantage be added to give it a more holding character.

Clayey and adhesive loams are difficult to deal with in a limited period of preparation, because such land always wants time for the influences of weather to assist cultural operations in the work of pulverisation. If land cannot be brought into fair condition for planting to take place in autumn it is better to defer planting until spring, or even the next season, in the meantime giving every attention to cultivation, so that its physical character may be permanently improved.

Lime is an excellent material to apply to strong and stubborn soils. It helps largely in breaking down quickly their cementing and adhesive qualities, rendering them workable and more finely divided.

Preparing Stations.—It is not essential to prepare the soil for a greater width than necessary when planting in isolated positions. Stations may be prepared 6 to 9 feet in diameter, according to the size of trees employed. Dig out the soil two spits deep, break up the bottom and return the soil, adding a little manure if poor, but preferably some rich loam with a little wood ashes worked in. This will improve the surface for planting the trees. The preparation necessary in forming a station brings the soil above the surrounding level. It is, therefore, desirable to finish some time before planting in order that the soil may become partly consolidated.

Preparing Borders.—Borders for fruit trees usually require to be of the same width as height, when the trees are on free stocks, and cover a space as wide as the wall is high. Few wall tree borders need be wider than 10 feet. Half that distance will do for cordon trees planted 2 feet apart. The soil should be improved by trenching and working in some good soil to lighten or enrich it. If drains are necessary these should be 4 feet deep and 15 inches asunder. Draining is only necessary when the natural escape of superfluous water from the surface soil cannot take place.

FRUIT FORCING.

Cucumbers.—To keep the plants in a healthy fruitful condition the night temperature should be maintained at 65°, 70° when mild, and 60° in the morning when sharp frosts occur, 70° to 75° in the daytime by artificial means, advancing to 80°, 85°, or 90° or more from sun heat. Whenever the weather is favourable a little air may be admitted at the top of the house, being careful not to lower the temperature or admit a cold current of air, as that cripples the foliage. It is better when the

weather is cold to shut off the top heat for an hour or two when the sun is powerful than to admit air when the winds are sharp. On the modern system of growing Cucumbers this practice obtains the year round, and in winter time little or no air may be necessary for weeks or months on the older, and, as we consider, better practice of ventilation. The paths and walls will need damping in the morning and afternoon on fine days, but the syringe must not be used to the foliage unless the days are exceptionally bright, and then soon after midday. The water or liquid manure given to the roots must be of the same temperature as the house, as also must the soil applied to the beds.

Autumn-fruiting plants are now in full bearing, and having plenty of stamina in them, and not being overcropped, will continue to bear good fruit a considerable time longer. It is also necesary to remove the fruit as soon as it becomes a useable size, and all deformed fruit when seen, as these needlessly weaken the plants. Attend to the plants once or twice a week for the removal of bad leaves, stopping irregular growths, and cutting out superfluous, keeping the foliage moderately thin. If mildew appear dust the affected parts with flowers of sulphur, or form this into a paste with skim milk, and brush a little on the hot-water pipes. The fumes given off act against red spider and white fly, but aphides and thrips should be subdued with vaporisation of nicotine essence or fumigation with good tobacco paper or the advertised substances, which are generally safer and thoroughly effectual.

Winter-fruiting plants are far the most difficult to manage. The great thing is to get them well established and furnished with sturdy growths and thick leathery leaves, letting the shoots advance well up the trellis before stopping them, training the side growths evenly, and not more closely than to allow of the foliage being well exposed to light. Stop the side growths after a few good leaves are made, and the growths issuing from the wood left will show plenty of fruit, and such may be stopped one or two joints beyond it. This will secure foliage for accelerating root action and the proper nourishment of the fruit. To insure the fruit swelling it is sometimes necessary to have recourse to fertilising the flowers, but allow few or no male blossoms or tendrils, removing them as fast as they appear, for they only weaken the plants. Add fresh soil to the ridges or hillocks as the roots protrude, and be careful not to overwater, affording a supply only when needed.

Peaches and Nectarines.—*Earliest Forced Trees in Pots.*—For securing very early fruit the trees are unquestionably best grown in standard form in pots, and the stems varying in height so that they will accord with the incline of the structure, and thus have their heads well up to the light. The very early varieties do well under this method of culture, as from the pinching they have blossom buds on the younger wood, and these are not liable to drop as are those on the first made wood of the previous year through over-development. Such varieties as Alexander, Waterloo, Early Louise, Early Leopold (an excellent variety for affording abundance of pollen from for fertilisation purposes), Hale's Early, and Stirling Castle Peaches, with Cardinal, Rivers' Early, Lord Napier, Goldoni, and Stanwick Elruge Nectarines answer for early forcing and give a good succession of fruit. A three-quarters span-roof house facing south, provided with top and front ventilation, and four rows of 4-inch hot-water pipes—two along the front and two next the path on the front side of the house—cannot be bettered for very early forcing, the back wall being utilised by growing Tomatoes against it, and when the Peach trees are withdrawn, as they may be after the weather becomes settled in June, the front of the house can be occupied with Tomato plants grown in pots for the purpose.

Earliest Forced Planted-out Trees.—These must be put into proper order and the house made as clean as possible. Afford inside borders a due supply of water, and if the trees are weakly give liquid manure, but not too strong, which will conduce to a more vigorous expansion of the buds as well as better setting and swelling of the fruit in the early stages. The house closed at the middle of the month must not have the temperature in the daytime above 50° without giving air, admitting this whenever the weather is bright, employing fire heat only to exclude frost, for the slower the trees are excited the stronger will be the blossom. Syringe the trees moderately in the morning and early afternoon of fine days, otherwise damp the paths occasionally so as to secure a fair amount of atmospheric moisture. Outside borders should be well protected with about 4 inches thickness of leaves, with a little litter over them to prevent their displacement by wind.

Succession Houses.—The trees casting their foliage must not be hurried by removing the leaves forcibly, but admit air freely at night, keeping the houses rather close in the early part of the day, and by maintaining a dry atmosphere, seek gradual maturation, when the foliage will part freely from the trees. When the leaves are all down, unfasten the branches from the trellis, perform any pruning required, cleanse the house thoroughly, paint the woodwork and trellis if necessary, and dress the trees with an insecticide. Secure the trees to the trellis, leaving room in the ligatures for the branches to swell, as tight tying is one of the most prevalent causes of gumming. Remove the surface soil down to the roots, and supply fresh loam rather stiff, containing a judicious amount of some approved fertiliser. Give a thorough sup ly of water to inside borders of houses with fixed roofs; but it is better to remove the roof-lights and allow the borders to become thoroughly soaked by the autumn rains, which will not do any harm, but great good where the drainage is efficient.

Any lifting and root-pruning of trees, not in a satisfactory state, should be attended to whilst the leaves are upon the trees, not, however, until the foliage becomes mature, and then acting with dispatch. If fresh trees have to be introduced, this should be done when they are safe for removal—namely, when the leaves are nearly off the trees. The best description of trees for planting in houses are those three or more years trained to walls or to trellis under glass, and prepared by annual or biennial lifting. Such trees transplant safely with abundance of fibres. Carefully planted they can be forced the first year with every confidence of a crop if not started before the new year, not brought on too rapidly. It is always desirable to select trained trees in bearing in preference to planting young ones that are not furnished with some bearing wood; but if young trees must be planted, select such as have a well-furnished base, free from gum, not very strong in the wood, and that well matured.

Late Houses.—The fruit, except a few of the latest varieties, is now perhaps gathered, and the wood that has borne fruit and is not required for extension should be cut out, as nothing is so prejudicial as too much wood. If the trees are young and not ripening the wood well, form a trench about one-third the distance from the stem the trees cover in height of trellis, and down to the drainage, so as to detach the roots, and after remaining open a fortnight, fill the trench firmly, adding calcareous matter to the soil if deficient of that substance. This will check the tendency to late growth and induce wood ripening. The surface soil should be removed down to the roots in the undisturbed portion as soon as the leaves fall, supplying fresh material, or replacing the old soil after adding some calcarcous matter, and give a good watering. The trees will then push fresh roots and ripen the wood, but the lifting or interference with the roots inside the trench must not be practised whilst the wood is soft and the leaves green and sappy, or the check will cause the wood to shrivel. Trees judiciously operated upon at the roots invariably set the blossoms well after operations of this character, the roots in lifting being laid in carefully in fresh compost and kept near to the surface. This is a great point in Peach and Nectarine cultivation.

THE BEE-KEEPER.

Examination of Hives.

It is a good plan at this season to make a thorough examination of all hives that are exposed to the weather. Those which are placed in properly made bee houses will be secure, but as these are in the minority when compared with the thousands of hives that are exposed to all winds and weather, it behoves bee-keepers to pay particular attention to the condition of their hives before severe weather sets in. As the fact is well known, directly a stock of bees become saturated with moisture from any cause, they will at once begin to deteriorate, and if steps are not taken to remedy the evil they will succumb. Prevention, however, is better than cure, and the present spell of fine weather is favourable for putting all hives in such a condition, that, let the weather be what it will, the inmates will be secure.

In the first place, each hive should be examined separately, and if the wood is in sound condition the bees need not be disturbed. The hive should then receive a coat of paint made from the best white lead, which may be obtained in small quantities ready prepared for use. This is a much better plan for amateurs to adopt than to procure the white lead and oils separately, as it often ends in failure. Paint made from white lead is preferred to the numerous mixtures often recommended for various purposes, as it will withstand frost and snow, rain and sunshine, better than anything else.

After the first coat of paint has become dry it will be advisable to fill all the small crevices round the sides of the hive with putty. This should be well pressed in with a knife, or some other suitable tool. Afterwards another coat of paint will, in the majority of cases, be sufficient to make the hive waterproof. After this date the bees will not be on the wing much, so no fear need be entertained of causing an injury to them by carrying out this operation.

It will not be advisable to paint the alighting boards unless they are fixtures, but if deemed necessary it should be delayed till late in the afternoon, when there is no further danger of the bees leaving their hive; the paint will then become dry by the following morning.

This shows the advantage of loose floorboards, as the hive may be quietly lifted off and placed on a clean floorboard without disturbing the bees. The spare board can then be removed to a dry place and painted as far as necessary, and be given to another colony a few days afterwards, when the paint has become dry and the unpleasant smell has passed away.

Making Roofs Waterproof.

It is important that the roofs of all the hives should be made thoroughly waterproof. But how is this to be done? someone may ask. As many have found to their cost, it is much easier said than done. Although it seems a very simple matter, I must own to have had more difficulty in this respect than in any other branch of bee-keeping. If the roofs are made of wood, and are waterproof for a year or two, they usually crack after an excessively dry summer, and then something more than putty and paint is required to keep the hive dry. This may be done by taking a piece of thin calico, slightly larger than the crevice through which the moisture gains access; well saturate it with paint and place it over the damaged part, and no further leakage will occur.

If the roof is badly affected similar material, treated in the same manner, and strained over the whole of the roof, will make it quite rainproof, and if painted once a year will last for a long time without removal. Another excellent plan is to cover the roof with a sheet of thin zinc, and if carefully put on will last as long as the hive. It must not be nailed on the top but only at the edges, otherwise the nails will in course of time become loose and the roof will no longer be rainproof. The zinc must be cut off close to the bottom edge of the roof. If turned underneath for 2 or 3 inches the moisture will condense on it, and the hive will seldom be dry. I lately examined several hives that had been treated in this manner with the above result. The overhanging zinc was removed as advised, and dry coverings placed on the top of the frames, which had the desired effect, and have since kept quite dry. This shows the necessity of carrying out the work in a proper manner, and is mentioned to prevent others making a similar mistake.

The corrugated galvanised iron, too, is a good substitute for wood and zinc, and as it does not fit so closely on the frames to which it is secured, it provides ample ventilation on the top of frames.

Dampness in Hives.

If the above instructions are carried out there will be less danger than formerly of the interior of hives being damp. Dampness in hives is the forerunner of many diseases, and no stock of bees will remain healthy long if steps are not taken to remedy it. Many colonies of bees which would otherwise have been strong and healthy the following spring are lost annually from this cause alone, and next to foul brood it is the chief danger in bee keeping to guard against. If the weather is severe, although they may have ample stores, they soon succumb; and if they do not they gradually dwindle away, so that by the following spring few bees will remain; these will, doubtless, have dysentery in a bad form, and if left to take their chance will make no headway.

When this is found to be the case, which is more often from carelessness than any other cause, the bees should be placed in a dry hive, and carefully fed with warm syrup, or be united to another stock. In numerous instances I have known bees to forsake their hive in a body, and cluster similar to a swarm in early spring.—An English Bee-keeper.

TO CORRESPONDENTS

All correspondence relating to editorial matters should, until further notice, be directed to "The Editor," **8, Rose Hill Road, Wandsworth, London, S.W.**, and **NOT** to Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor.

Chrysanthemum Leaves (*Inquirer*).—The leaves arrived too late for microscopic examination and the publication of the results in the present issue. In the meantime you cannot do wrong by dusting the plants with anti-blight powder.

Plants on Vine Border (*W.*).—Many gardeners resort to the practice of placing plants on inside Vine borders, not because they approve of such practice, but because necessity compels. They have to supply the plants without other structures being provided for growing or preserving them. Any kinds of plants on the border, either in winter or summer, more or less act to the "detriment of the crop of Grapes," as the soil is deprived of the action of air and light, besides being kept to a greater or lesser extent constantly wet. Gardeners, as a rule, are only too glad to keep the inside borders clear or solely devoted to the Vines, but from press of plant space many are obliged to act otherwise in the worthy endeavour to meet requirements in respect of both plants or flowers and fruit, and it is creditable to them that such a large number succeed so well.

Drying Orchid Flowers (*J. B., Wilts*).—If you wish to simply dry the flowers flat, there is nothing to beat the ordinary pressing between sheets of the best blotting paper. White is the best, but it must be of good absorbent quality. But possibly you wish to retain the shape of the flowers as well as their colour, in which case you must proceed differently. Procure some of the finest white sand; ordinary silver sand is much too coarse. Wash it thoroughly in clean boiling water, to remove any small insects and dirt, then spread it on sheets of zinc or some other metal, and dry it thoroughly. This cleansing and drying of the sand is most important, as without it the flower will be spotted. Procure boxes of suitable size and depth, according to the number of flowers, and place an inch of the prepared sand in the bottom. Lay the flowers on this, at a considerable distance apart, in as natural a position as possible. Then, with a fine sieve—or, with care, you may do it between your fingers—fill up all hollow parts of the flower, such as the labellums, and gradually cover them with the sand, taking great care that the segments are not displaced. When all are covered, place the boxes in a cool, dry room, and in about a month the flowers will be dried sufficiently, and may be taken out for your specimen cases, or whatever you require them for. The flowers will not, of course, be so bright as the natural tint, and some kinds are much more satisfactory than others. They should not be cut until they are fully developed, but before the colour begins to fade.

Vineries Infested with Mealy Bug (*J. S., Wales*).—There are few things so difficult to get rid of as this pest when it becomes thoroughly established. The practice we have followed very successfully was to syringe the Vines thoroughly as soon as the Grapes were cut, with a mixture of softsoap, soda, petroleum, and water. The water was at a temperature of 130°, 2 ozs. of softsoap dissolved in a 3-gallon watering-canful, also half an ounce of washing soda, then a wineglassful of petroleum placed in, and by filling the syringe quickly and forcing it back into the vessel a few times, the oil was mingled with the water. This done the syringe was filled and the contents forced on the Vines, the next syringeful being forced into the watering-can, then the next over the Vines, and the following one into the vessel, and so on. The object is to keep the oil mixed with the solution, and to wet every part of the Vines and house by syringing both ways. In three or four days repeat the dressing, and again at a similar interval. When the leaves are ready to fall take them off the Vines and burn them, and when the Vines are pruned subject the prunings to a similar ordeal. Then wash the woodwork with soap and water, using a brush; the glass with clear water. Limewash the walls. Remove the loose bark from the rods, not, however, peeling them into the live bark, and wash them with either a solution of soluble petroleum, according to the instructions supplied with the article by nurserymen and horticultural sundriesmen; or with a preparation of 2 ozs. caustic soda, and 2 ozs. of commercial potash, dissolved in 1½ gallon of boiling water, applying with a brush at a temperature of 130°. If you reach every mealy bug or its eggs with either of these applications you will do well, and end the trouble, but the pest lurks in all kinds of places, such as in dry soil near hot-water pipes, in fissures anywhere, and the under sides of dry shelves. The surface soil of the border must be cleared away, and a top-dressing given of fresh turfy loam. If any bug come next year, vaporise with nicotine at intervals of about ten days or a fortnight a few times, and that will clear out the pest. Of course, it must not be reintroduced.

Stubborn Pear Trees (*Newhurst*).—Your first thoughts were best. The "stunted" condition of the trees is the result of their large size when planted, and their comparatively weak root power. It is impossible to take up such trees without leaving at least half of their root fibres behind them, and the proportion of loss is far greater when the lifting is done—as is not uncommon—somewhat roughly. The balance between roots and branches was destroyed with the spade, and the larger the trees are the longer the time needed for restoring the lost equilibrium. Because the roots were so severely shortened in the autumn the branches ought to have been cut back in the spring to good wood buds, even if there were blossom buds beyond them. If, as appears to have been the case, there were many of these, the cutting back to small wood buds below them was the more necessary for obtaining free growth extension. Do this now. Wherever a branch from which extension is desired terminates in a bold oval shaped blossom bud, search for a small growth bud on clean wood below the terminal and shorten the branch to this bud; it may be a mere speck, yet capable of producing a shoot in the spring, which a terminal bud is not. Moreover, if the branches are numerous, or within a foot of each other, cut out some of the weaker or more stubborn looking entirely, even if they are studded with blossom buds. Your first object must be to encourage extension growth. There will be more than enough blossom buds after the pruning advised. If any young shoots have been made this summer, cut these back to the best buds on the soundest wood in each case. When growth is fairly starting in the spring, sprinkle the soil over the roots and for a little distance beyond them with nitrate of soda, at the rate of 1½ oz. to the square superficial yard, and on the approach of hot weather in summer mulch from the stems outwards to a foot beyond the extension of the roots with 2 or 3 inches of somewhat lumpy manure for conserving moisture and preventing the surface soil shrinking and cracking. If the mulching is applied in spring it will exclude the sun's warmth and defer root action. Admit the warmth by hoeing frequently in bright weather, not mulching till growth is free and the sun becomes exhausting. By blackening the cold clayey soil with soot in the spring it will be warmed the sooner. If the uppermost roots are about 4 inches below the surface do not add any more soil. With good root action and free growth you need not trouble about a little stock exposure. The branches must be free from scale or other incrustrations. If you have any doubt about this send us a small sample with spurs or blossom buds. It is gratifying to feel we have been able to add to the pleasures of your life, apart from putting a little money in your pocket, but this in itself is not infrequently a factor in human happiness. Carry out the instructions we have given with judgment and without fear, and you will be the gainer in the end, even if you sacrifice a few dozens of blossom buds now.

Inarching Vines (*W. S. J.*).—Lady Downe's and Gros Colman will do excellently for inarching with Muscat of Alexandria and Madresfield Court. Both stocks are good growers, and cater well for the scions you propose. This we have proved by experience, and with satisfactory results. We have also seen several instances of success in the hands of others when the Vines employed as stocks were healthy.

Victoria Medallists of Honour (*J. V.*).—The names of the selected medallists were:—J. G. Baker, Prof. I. Balfour, P. Barr, A. F. Barron, E. J. Beale, W. Boxall, G. Bunyard, W. Bull, F. W. Burbidge, W. Crump, R. Dean, G. Dickson, Rev. H. H. D'Ombrain, M. Dunn, C. T. Druery, Rev. Canon Ellacombe, H. J. Elwes, Prof. Michael Foster, J. Fraser, G. Gordon, J. Heal, Rev. George Henslow, H. Herbst, the Very Rev. S. Reynolds Hole, Sir Joseph Dalton Hooker, Rev. F. D. Horner, J. Hudson, Miss Gertrude Jekyll, P. Kay, J. Laing, C. Maries, J. McIndoe, H. E. Milner, E. Molyneux, G. Monro, F. Moore, Dr. D. Morris, G. Nicholson, J. O Brien, G. Paul, W. Paul, T. F. Rivers, Hon. Walter Rothschild, F. Sander, Baron Schröder, J. Seden, N. N. Sherwood, J. Smith, M. R. Smith, W. Speed, A. W. Sutton, O. Thomas, D. Thomson, W. Thompson, H. Turner, Miss Ellen Willmott, G. F. Wilson, Rev. C. Wolley-Dod, J. Wright, and G. Wythes.

Pruning Maiden Fruit Trees for Double Cordons and Pyramids (*G. N. S.*).—1, Cut the trees intended for double branched cordons at a promising bud with another equally prominent just below it on the opposite side at about 9 inches from the ground, and when the buds start rub off all but the growth from those two, or the most promising that push on opposite sides of the stem. It is not advisable to originate the growths nearer the ground, nor have them over a foot from it. The trees intended for pyramids should be cut down to 15 or 18 inches from the ground, always to a good bud well situated for forming a leading growth. This will cause side shoots to push sufficiently near to the ground for forming the base. The leader may be stopped at about a foot of growth, and the side shoots, not too many, say three to five, will form the framework of the tree. 2, Of the Apples you name King of the Pippins makes the best cordon, but if you desire higher flavour Cox's Orange Pippin will afford it, this variety making excellent and productive cordons on the Paradise stock, but requires a warm soil or substratum. King of the Pippins does well on a cool base. 3, The Plums you name—Victoria, Kirke's, Gisborne's, Czar, and Monarch, answer either as cordons or pyramids. It is a question of management.

Names of Fruits.—*Notice.*—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. *In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing.* The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. *They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state.* (*J. C. D.*).—1, Withington Fillbasket; 2, Lady Henniker: 3, Hoary Morning; 4, Belle Dubois; 5, Mère de Ménage; 6, Golden Winter Pearmain. (*R. J. R.*).—1, King of the Pippins: 2, Cellini. (*J. Brown*).—1, Beurré Hardy; 2, Doyenné Boussoch; 3, Beurré de Capiaumont.

Names of Plants.—We only undertake to name *species* of plants, not varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*J. C.*).—The varieties of Crotons sent are all the outcome of florists' skill. If you send specimens to such a firm as Messrs. Veitch & Sons, who grow a large collection, they will name them for you by comparison. (*A. K.*).—Sternbergia lutea. (*C. H. W.*).—1, Colletia spinosa; 2, Jasminum Sambac flore-pleno. (*Orchidman*).—A charming variety of Cattleya labiata.

COVENT GARDEN MARKET.—Nov. 3rd.

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, ½ sieve	0 0	0 0	Onions, bushel	3 6	4 0
Beet, Red, doz.	1 0	0 0	Parsley, doz. bnchs.	2 0	3 0
Carrots, bunch	0 3	0 4	Parsnips, doz.	1 0	0 0
Cauliflowers, doz.	2 0	3 0	Potatoes, cwt.	2 0	4 0
Celery, bundle	1 0	0 0	Salsafy, bundle	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Seakale, basket	1 6	1 9
Cucumbers	0 4	0 8	Scorzonera, bundle	1 6	0 0
Endive, doz.	1 3	1 6	Shallots, lb.	0 3	0 4
Herbs, bunch	0 3	0 0	Spinach, pad	0 0	0 0
Leeks, bunch	0 2	0 0	Sprouts, ½ sieve	1 6	1 9
Lettuce, doz.	1 3	0 0	Tomatoes, lb.	0 4	0 0
Mushrooms, lb.	0 6	0 8	Turnips, bunch	0 3	0 0

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	1 0	to 3 0	Grapes, lb.	0 8	to 2 0
Cobs	22 6	22 0	Lemons, case	11 0	14 0
Filberts, 100 lbs.	0 0	0 0	St. Michael's Pines, each	3 0	8 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6 0	to 36 0	Ficus elastica, each	1 0	to 7 0
Aspidistra, doz.	18 0	36 0	Foliage plants, var., each	1 0	5 0
Aspidistra, specimen ...	5 0	10 6	Heliotropes, doz.	3 0	5 0
Chrysanthemums, doz. ...	4 0	9 0	Lilium Harrisi, doz.	12 0	18 0
,, ,, single plants	1 6	2 0	Lycopodiums, doz.	3 0	4 0
Coleus, doz.	2 6	4 0	Marguerite Daisy, doz. ...	4 0	9 0
Dracæna, var., doz.	12 0	30 0	Mignonette, doz.	4 0	6 0
Dracæna viridis, doz. ...	9 0	18 0	Myrtles, doz.	6 0	9 0
Euonymus, var., doz. ...	6 0	18 0	Palms, in var., each	1 0	15 0
Evergreens, var., doz. ...	4 0	18 0	,, specimens	21 0	63 0
Ferns, var., doz.	4 0	18 0	Pelargoniums, scarlet, doz.	2 0	4 0
Ferns, small, 100	4 0	6 0			

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms ...	3 0	to 5 0	Marguerites, doz. bnchs. ...	2 0	to 3 0
Asparagus Fern, bunch ...	1 0	2 6	Maidenhair Fern, doz. bnchs.	4 0	8 0
Asters, bunch	0 4	0 8	Mignonette, doz. bnchs. ...	2 0	4 0
Bouvardias, bunch	0 6	0 8	Narciss, white (French) bunch	0 4	0 6
Carnations, 12 blooms ...	1 0	3 0	Orchids, var., doz. blooms	1 6	12 0
,, doz. bnchs. ...	0 6	1 0	Pelargoniums, doz. bnchs.	4 0	6 0
Chrysanthemums, 12 bnchs.	2 0	6 0	Roses (indoor), doz.	0 6	1 0
,, ,, 12 blooms	0 6	2 6	,, Tea, white, doz. ...	1 0	2 0
Eucharis, doz.	3 0	6 0	,, Yellow, doz. (Niels)	1 6	4 0
Gardenias, doz.	1 6	2 0	,, Red, doz. blooms ...	0 9	1 0
Geranium, scarlet, doz. bnchs.	4 0	6 0	,, Safrano (English) doz.	1 0	2 0
Lilac (French), bunch ...	5 0	6 0	,, Pink, doz.	1 0	2 6
Lilium lancifolium, bnch.	1 6	2 0	,, outdoor, doz. bnchs.	3 0	6 0
Lilium lancifolium, short, per 12 blooms	1 0	1 6	Smilax, bunch	1 6	2 6
Lilium longiflorum, 12 blooms	4 0	6 0	Tuberoses, 12 blooms ...	0 3	0 4
Lily of the Valley, 12 sprays	1 0	2 0	Violets, doz. bnchs.	1 6	2 0
			,, Parme (French), bch.	2 6	3 6

SANITARY SCIENCE.

What strides this has taken since our childish days! How much greater value is now set on human life, and in consequence how the span of that life is prolonged What care is exercised for us and over us; even if we are indifferent ourselves the law steps in and insists on precautions and remedies that till of late years were optional. We may live under a paternal government; let us be thankful we do, and show our thankfulness by aiding, rather than hindering, in the execution of those schemes for our own good and the good of those around us. Few families escape attacks of illness—illness that is often preventible—and how in many cases have we to mourn the loss of those near and dear, their untimely loss; we mean children in their youthful vigour, and men and women in their prime.

Country folk are often found who aver with scorn that nothing would prevail to make them live in close-smelling towns, where neither air, food or drink, could possibly be had fresh; and yet we are obliged to confess it—in sanitary matters our town friends are often ahead of us who dwell amid green fields and by running brooks.

True, town air must always be a good deal vitiated by the fumes issuing from thousands of chimneys, and by heavy mists and fogs that the smoky atmosphere will not allow to rise and pass away; but although the air may not be all we can desire, yet when it comes to a system of drainage, as a rule the town beats the country hollow.

In the matter, too, of scavenger work, all is done methodically and with a wholesome dread of the sanitary inspector's eye. The water supply has been undertaken by the municipal authorities; it is carefully analysed, tested again and again at intervals, and though occasionally, as at Maidstone just now, a fearful blunder may be made about the water, on the whole the consumer may be pretty sure his water is wholesome. He has, too, a plentiful supply for domestic purposes, and conveniently handy.

In case, too, of infectious complaints, the hospitals are open and free, and there is always the hope that the outbreak of any complaint may be confined to the patient who was removed in an early stage to comfortable quarters, where all that science and nursing can do will be done. Now, in the villages and solitary farm houses there is still much to do. Take the water supply alone. How often it is sadly defective, both as to quantity and quality!

There is not public enterprise enough for waterworks, and each house and each group of cottages has to depend on a well or spring, very much on the surface, water easily contaminated by dangerous matter from foldyards, cesspools, and badly arranged pigsties and other worse abominations. Then again, the supply (pure or otherwise) is by no means certain. We have known cases of water having to be led ten miles to satisfy the stock on a 1400 farm! What would happen in case of fire? Nothing could absolutely be saved. We know of another farm where the available supply was a large pond (which got very low and dirty in summer), and a pump where the water was highly impregnated with iron, so much so as to seriously disagree with most bipeds, and which put all the horses sadly out of condition.

Much is written and said now about impregnated milk. Certainly on some farms the poor cows do not have much chance of any fairly pure water. Whether their huge bodies act as filters, and enable the milk supply to be pure and wholesome, is a subject we had rather leave alone, it is too wide and too vast for us.

There was an Act passed in 1885 regulating the condition of dairies, cow houses, and milk shops, and insisting upon the registration of such people as cowkeepers or milk sellers. Now, certainly as far as we know, no retail milk dealers ever receive either a visit from an inspector or are registered. This may be all right in the main, but it leads to much carelessness in (1) the housing of the cows, (2) the storing of the milk. The water, too, used for cleaning pails and pancheons is anything but free from suspicion; and it is a well-known fact that milk is one of the most easily tainted of foods, and has often, alas! been the vehicle for carrying deadly disease. We have been interested lately in seeing a bottle of impurities extracted from milk in a Swedish creamery. The milk is forced through a layer of fine granite, which is afterwards purified by fire, and the wonderful and curious sediment was an object lesson indeed.

Of course in the case of private milk sellers we do not look for such excessive care, but we do ask that ordinary precautions should be used, ordinary cleanliness, attention to cow house and dairy, and to the water supply. So much waste is often permitted by the percolating of the liquid part of manure, a most valuable substance in the right place, and a most pernicious one in the wrong. Some farmyards are so badly constructed that this waste seems inevitable; others, again, are fitted with tanks and cesspools. In buildings which are unguttered there is waste in several ways. We lose the excellent soft water, which is often so bountifully provided; we allow it to dilute our manurial agents, and the drip from the eaves is highly detrimental to brick and woodwork. The ordinary farm labourer is a bit stolid, and will allow and enjoy his pig much nearer his back door than is good for health. We suppose the constant play of fresh air round the cottage minimises the bad smell, or habit becomes second nature.

There is often far too much carelessness as to the disposal of such dead animals that are not worth taking to the fellmongers. These possibly are thrown into a corner of the stackyard, to become the source of a great nuisance, if not danger.

Of course it is a difficult thing, well nigh impossible, to put all farm buildings into good sanitary condition. Landlords fight shy of improvements which bring them no present benefit, and the farmer is still less willing to lay down good money on another man's property.

How many stables do we find dark and ill-ventilated? This is, however, quite as much a town as country failing. A horse is peculiarly susceptible as to its bronchial arrangements, and many a case of "roaring" or broken-windedness can be traced to a close foul stable. No animal can thrive in dirt or discomfort, in extremes of heat or cold; but we speak often to very deaf ears.

There is a very wide field for reform in the treatment of several complaints incident to cows and sheep. In cows particularly there exists a severe form of lung consumption; often even when suspected the ailing animal is not separated from the rest of the herd till too late. Of abortion we hope to deal in another article—it, alas! is far too prevalent. If the inspector gets wind of it, he looks after the scabby sheep. But there are several other ailments that call for timely attention and isolation that pass all but unnoticed.

We think liver complaint is confined to man, and some will be surprised to hear what a victim the barndoor fowl is to this disease. So it is; but as a fowl is not ruinous matter, we advocate for the stopping of the spread of this complaint a sharp knife.

WORK ON THE HOME FARM.

The summer of St. Luke has extended into November, and has proved a friend indeed to the farmer of arable lands. Such a fine dry October without, absolutely without, frosts we cannot remember, and when we come to look back to our experience of last year, with its constant waterfall, heavy labour bill, and disastrous effects, we have much to be thankful for at the present time.

The late Wheat is going in splendidly; in fact, on light soils the conditions are almost too dry, and may tend to encourage the growth of such small weeds as the Poppy and the wild Convolvulus, which like a fine dry seed-bed; so we must keep a sharp look-out in February, and miss no opportunity of giving the young Wheat a light harrowing, which will kill the weeds while they are small and in the first leaf.

Though it would be bad policy to neglect any crop if it is worth growing at all, yet the prospect of fair if not good Wheat prices for at least another twelve months gives encouragement to every farmer to lay out both money and time in the attempt to produce a good crop. The early sown Wheat has come up quickly and well, and has made a most satisfactory start.

The trade for pigs is very slow. This is partly owing to swine fever restrictions, but more to a likelihood of a scarcity of pig food Potatoes are such a miserable crop that even the chats and cut tubers will be scarce and dear; this, added to the higher price of barleymeal and sharps, will have a depressing influence on store pigs. There is, however, a great probability of pork being dearer as Christmas approaches. We must remind our readers that attention is most important in pig-feeding. The animals should not have more food given them than they will quickly clean up; and instead of filling the trough morning and evening, as so many people do, the pigs should have five or six meals per day—small quantities at regular intervals. They should never be kept waiting beyond the usual time, but fed to the minute; they will thus keep quiet, and not fidget about and get agitated at being kept waiting. "A contented mind is a continual feast," and it goes a long way towards the fattening of all animals.

OUR LETTER BOX.

Fowls Picking out Each Other's Feathers (*W. Smith*).—Fowls in confinement are much addicted to this habit. Watch the birds on a sunny day (unseen by them), and you will probably detect the culprits. Remove them and place them in coops for a few days. Probably all the fowls will be found to be troubled by "nits,' this is the beginning of fowl pecking. Give plenty of green food, such as Cabbage and Turniptops, a fresh supply of dry earth and lime for dusting purposes, and if the fowls be very full of vermin dress with some harmless insect powder, which any chemist will supply.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

DATE. 1897. October.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp of soil at 1 foot.	IN THE DAY. Shade Temperature. Max.	IN THE DAY. Shade Temperature. Min.	IN THE DAY. Radiation Temperature. In Sun.	IN THE DAY. Radiation Temperature. On Grass.	Rain.
	Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Inchs.
Sunday 24	30·257	51·4	48 6	N.E.	50·4	56·9	46·0	85·2	40·4	—
Monday 25	30·240	42·8	42·8	N.	49 1	56·1	40·1	82·2	33·4	0·092
Tuesday ... 26	30·328	46·7	46 4	N.	47·9	57·2	39·0	72·5	33·9	0·03
Wednesday . 27	30·318	47·1	47·0	N.	48·7	54·0	44·3	65·0	38·4	—
Thursday.... 28	30·284	45·2	45·2	N.	48·4	48·3	42·3	53.5	37·2	—
Friday 2	30·156	44·8	44·7	N.	46·9	61·9	37·7	80·8	31·9	—
Saturday .. 3	3 ·166	45·0	44·9	N.	46·3	61·2	39·0	85·4	33·6	—
	3 ·250	46·1	45·7		48·2	56·6	41·3	74·9	35·5	0·122

REMARKS.

24th.—Cloudy early; almost cloudless from 10 a.m.
25th.—Fog early, clearing about .30 a.m., and sunny after.
26th.—Rain from 6.30 a.m. to 10.30 a.m.; almost continuous faint sunshine from 11.30 a m., but spots o rain at 1.30. p.m.
27th.—Dull, with more or less fog almost throughout, but a gleam of sun at 2 p.m.
28th.—Fog all day, slight for several hours in the middle, with the sun showing through.
29th.—Fog early, with sun visible; bright sun from 11 a.m. to sunset.
30th.—Fog till 11 a.m, with the sun visible; then bright sun till about 3 p.m.; fine night.
Another fine week, with more fog than usual.—G. J. SYMONS.

Journal of Horticulture.

THURSDAY, NOVEMBER 11, 1897.

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ROOT-PRUNING AND OTHER JOTTINGS.

IN the busy round of daily labour connected with the gardener's art, each season has its own particular work, and thus time flies, as the world, like the gardener's work, is ever changing, decaying in one direction, springing into new life in another. Autumn and winter are seasons when vegetation recoups itself—by partial rest—for the work of another year; but while Nature rests the gardener must work, and, to some extent, bend her changing moods to his will, if the golden harvest is to follow. Look at those fine pyramidal and bush-shaped Apple trees beside the garden walk. How rampant the shoots have grown! What has Nature been doing here? Why does she refuse to give us fruit?

The above is the gist of a little homily delivered to me a few days ago by an intimate friend. Because, good friend, said I, you have treated her harshly. You have given the roots of those trees plenty of room to ramble at will, while you have tried to keep the branches within too limited a space. You have pruned hard and often, but the strong shoots still come, and will do, till you alter your tactics. There are two courses open to you; choose the one which, under the circumstances, you think the better. Remove the alternate trees, thin freely the branches of those left, and for the future keep them fully exposed to the glorious sunshine. Nature will show you that she appreciates your kindness, and will not withhold her reward. "Ah!" he exclaimed, "but the trees are so near to the walks that they will soon grow beyond bounds, and I should also like to retain that nice row of them intact. In other words, I must restrict them to the space they now occupy as regards their diameter, and I only want them to grow a little higher." Very well, you must then resort to another plan. Look at the main branches, they are too close together; they must be thinned with no unsparing hand. Cut some of them out till those left are at least 18 inches apart. Now fetch the spades and forks, and let us see what the roots are like. One of my old masters, years ago, gave me a good drilling at this kind of work, and the smell of the upturned soil always gave me an appetite for it—the work.

We dig out a trench 3 feet from the tree stem and 2 feet in depth, but few roots are seen. The forks are next handled to break down the wall of soil in front, so as to get nearer the tree stem, and soon we come upon long straggling roots with little fibre. These are carefully pegged back if thin enough for the purpose; the stronger ones we work round, picking out the soil with the forks. This goes on for a time, till a good trench surrounds the tree, and the ball stands in "splendid isolation." Next we meet with very strong roots, going down straight into the subsoil. These are severed with the spade or mattock, at a point where they penetrate the subsoil. As the stem of the tree is neared fibrous roots become more plentiful, and it is apparent that our hitherto radical plan of action may be altered. The ball of earth now extends for 15 inches round the tree stem; the surface of this is removed till a mass of roots is found, and then we are ready for filling in the trench.

The soil is rather heavy, so we obtain a few broken bricks or tiles, shovel more soil from the bottom of the trench, and ram the bricks firmly into the bottom of it. "Ah!" says my friend, "they won't get through that easily." A layer of leaves are next placed over the bricks, the ends of the roots cut with a sharp knife (making an upward cut), and a few inches of good soil placed upon the leaves and trodden firmly. We find a little fibrous loam handy, so a layer of this is next added, and some of the roots spread upon it, taking care to notch several of the stronger ones. More soil is added, the fresh loam being placed around the roots, and the old employed to fill the interstices. Thus the work goes on, layer after layer, the roots in each case being spread out to their fullest extent, brought up nearer to the surface, and covered with soil pressed moderately firm.

When completed the soil formed a mound a few inches above the surrounding ground line, and was left rough on the surface. I hinted to my friend that he might leave it in that state, to become sweetened and aërated till sharp frosts threatened, then a few inches of half-decayed manure placed over the soil would give the roots near the surface the protection needed.

My object in penning the above notes was that, as I thought perhaps there might be some other fruit trees in various parts of the country which were not satisfactory, the Editor of "our Journal" might think the notes worth printing. My old master used to pin his faith on practising that kind of work upon strong growing fruit trees, and I think he knew what he was about, at least I am sure he did when I remember the fine crops he grew. Another old plan he used to be very particular about doing was to unnail the Peach shoots as soon as the leaves had fallen, and let them hang away from the wall, the main branches being secured here and there. "A capital plan is this, my lad," he used to say, "for it helps to ripen the young shoots all round, keeps the buds back so that they do not burst into flower very early in the spring, and therefore they escape to a great extent injury by frost." Before the shoots were unnailed, if any trees had grown too strongly, a trench was taken out around it, and from 1 to 3 feet from the stem (according to the size of the tree), the points were cut with a sharp knife, and the soil replaced and pressed down firmly. In fact we were always pulling the roots of fruit trees about in the autumn.

Sometimes we went into the orchard or fruit plantation, and set to work in earnest there. If we came across a tree that looked stunted, though not particularly old—one that looked starved—a trench was soon taken out round it; sometimes this was 5 or 6 feet away from the trunk, and more than 2 feet in depth, Some good manure was then placed in the bottom, a layer of soil added, then another layer of manure, and so on, till the hole was filled in. Any soil left was scattered about in all directions, and a coating of real good manure spread upon the ground as far as the branches extended. The weakest of the trees were treated in this way, and many others received heavy waterings with liquid manure, for we had several cesspools which required emptying about that time. The liquid in them was strong too, so strong that we seldom ventured to apply it at full strength, but generally diluted it with an equal part of water.

I remember once after watering some Ribston Pippin Apple trees in the way above described they bore some grand fruits the following season. A dish of these easily won first prize in the class for dessert Apples at our local show (which was famed for its Apples). Some of the old gardeners said our "Ribstons" were so good that they ought to have been sent to one of the "big London shows;" we might even have got a medal for them. My old master was one of the ancient school (in some things), for he used to take such pride in his wall trees; he would have the young branches start from just the right point; it was useless to suggest how quickly we might cover the space by bringing a shoot "a little way round" to fill up a blank; the look he gave the one who made the suggestion usually prevented him from taking a similar course the second time. "No; I must have a shoot just there, and you must keep cutting the leaders back till the required shoot comes." These were not exactly the words the master used, but they show what he meant—he had the gift and language, and put the matter quite forcibly.

Old unfruitful wall trees were not tolerated long in that garden. When they ceased to be fruitful, up they came without much mercy being shown them, and some of the very best new varieties speedily took their place. When this sort of thing did happen there were no half measures about the work. Holes 5 feet in diameter were taken out, they were generally made 3 feet in depth, and then given 6 inches of drainage in the shape of rubble and broken bricks; after these bricks were covered with old turf, some of the old soil was placed over it, and then the young trees were planted entirely in good turfy loam. It was something like loam, too, that we used to get there; so full of fibre, and quite a good "holding" soil. I remember many things that my old master used to believe in; he held strong opinions about pruning; but I must stop now.—WORKING GARDENER.

THE LANGUAGE OF PLANTS AND FLOWERS.

I TRUST no reader will imagine, after reading the above heading, that I am going to indulge in a series of poetic quotations from some popular "Language of Flowers." Those dainty little collections of poems and sentimental phrases suit well the taste of many in the "gushing days of early youth," but as the years roll on we all, I think, take a more practical view of life, and thus become interested more particularly in things which lead to progress, and increase our knowledge of the wonders of the universe.

It is, therefore, my intention to endeavour to show what practical lessons we can learn from the appearance of plants and flowers under various circumstances, for observant cultivators have long ago discovered that their appearance at various times and under differing conditions show plainly what is, or has been, amiss with them. Let us just take a case which is apparent to all, and then pass on to deal with others which require the exercise of close observation to detect. If on a hot summer's day we find the leaves of a plant drooping—or, as we term it, flagging—while the soil is dry, such a plant is asking in unmistakeable language for water; the constant stream of liquid passing through its cells has been reduced to its lowest possible ebb, its motive force has gone for the time, and unless attention is quickly given the energies of that plant are permanently enfeebled. Those who by experience and observation have learned to read the language of plants, even as they learn to read a book, know these things at a glance, and act quickly when mistakes are discovered.

Again, there are times when the leaves of plants droop while the soil in which they are growing is quite wet, yet here the leaves present to a close observer quite a different appearance from those which droop through dryness of the soil. The too wet soil causes many of the white tender root points to decay, and thus lessen the supply of food, or manure water applied in too strong a form will have the same effect. There is yet another instance of leaf drooping which differs from either of the above, and which may be more quickly set right. It is that of a plant under glass flagging during bright sunshine, when the roots are perfectly healthy and in the right condition in regard to moisture. This usually takes place after dull periods, or when the sun bursts out with stronger force than usual, and shows that evaporation from the leaves is taking place more rapidly than the roots can supply the needed moisture. Shade the leaves, and thus lessen evaporation, and they quickly resume their natural appearance. To the observant gardener they said quite plainly—in their language—"Give us shade."

Take another phase of the subject—the watering of delicate plants, or of more vigorous ones in a critical stage of their development, such as Chrysanthemums when unfolding their florets. A good waterer studies not only the appearance of the soil, but also of the plants. Many a time he will be in doubt as to whether water is really required, and a glance at the foliage quickly decides his plan of action. And yet he would be unable to thoroughly explain the precise way in which he gleaned this "revelation" from the leaves, though he might tell you he noticed an indefinable something about them which the trained eye understood, if the brain did not. There are, however, many instances in which vegetation speaks quite plainly, even to eyes that are not highly trained.

Go into a neglected garden, or badly cultivated field in summer time when the crops should be looking their best, what a sorry plight either presents. The crops are poor and poverty stricken in appearance, while the weeds are rampant, robbing the ground of much of the food it contains. To the gardener who practises good culture such struggling crops cry in unmistakeable terms for food, for space free from noxious weeds. Look also at the stunted trees in many an English orchard, stunted through starvation combined with a neglect to thin the branches. Manure and a free circulation of air are the things they ask for; give them that which they crave, and they will in due time reciprocate the kindness.

Strange as it may seem to some, it is none the less true that only a few years ago I met with fruit growers in Kent who still clung to the doctrine that fruit trees did not need manure. But it is right to add that were some of the "old school," who were not noted for the high quality of their produce. I think there are few readers of the *Journal of Horticulture* who do not know that—when the land has been properly prepared before being planted—young trees do not require manure till they begin to bear good crops, but if it is then continually withheld stunted growth and unsaleable fruit will in time be the result.

Fortunately, however, there is a brighter side to this subject, for plants, trees, and flowers show quite as clearly when they are being well treated as when they are neglected. The vigorous crops of vegetables which have been well attended to during every stage of their development show by their glossy leaves, stout stems, and shapely roots or tubers, that they will yield a bountiful harvest. The well-tended orchards and fruit plantations, which are now yearly increasing in number, give—if we take the average for a number of years—a return for the labours bestowed upon them such as few other crops will yield. During a plentiful season, when the brightly streaked or golden fruits are weighing down the branches, a gladness pervades the land, for if rightly disposed of it means abundance of delicious food for millions. Even in seasons when fruit is somewhat scarce we have to some extent a consolation, for England would not be half so fair without her fruit trees at blossoming time.

The numerous flowers, too, which are cultivated solely for their beauty have a fine language of their own, and when that language bursts forth in all its beauty at some critical time, or in some almost forsaken spot, its influence cannot be withstood by the hardest and most callous natures. To the hardened criminal it speaks of the green fields and flowing streams of innocent childhood days, and the mind is instinctively uplifted at the thought. To the sick and suffering in many a home of poverty flowers speak, and inspire with a magic spirit of hope.—H. D.

WATERING PLANTS.

"A Busy Man" (page 431) inquires why the per-centage of loss among market growers' plants is so small and the results so good. To answer this question fully would require a lot of space, but there are several things that lead up to it.

In the first place, market growers' plants, as a rule, are graded; each batch of plants is in the same size pots, and one is almost a fac-simile of another. But there is a more important point than this. Any man of experience in plant growing can easily tell by the appearance of such as Pelargoniums, Chrysanthemums, and many others, whether or not the plant is dry at the root. The thing is to get into the habit of thinking, and acting quickly and decisively. The hand and head must work together, and one might almost say that a practised eye sees through the ball of soil contained in a flower pot. There is a lot of time wasted in private gardens by the knuckling process, as your correspondent terms it; but I imagine that the promiscuous use of the hose would not lead to the splendid results one may daily see in Covent Garden.

I recently saw a collection of some 20,000 Heaths that were being prepared for sale at a large market-growing establishment, but I can answer for the fact that each one of these had for months been separately examined before water was given. The collective mode of treatment that a market man can practise simplifies his work considerably, and I do not speak without experience in market work; but "A Busy Man" may rest assured that well considered culture may go on, notwithstanding the fact that the hose is used pretty freely.—H. R. R.

BUNYARDS'.

Good Fruit and no Fever at Allington.

A song for dun October,
That tints the woods wi' broon,
And fills wi' pensive rustling
The wooded dells aroon'.
While lintie, merle, and mavis
Nae langer pipe wi' pride,
Nor larks wi' song salute us
Aboon the green hillside.

It is old-fashioned, I believe, to begin an article with rhyme, and still more so to end with it. And yet—well, stand on the "green hillside" of Allington, gaze round on the beautiful wooded landscape, rich with the browns and yellows, the chromes and coppers, of early autumn, and the searching lines force themselves out. Below lies the stricken town, but it has no air of melancholy. Cheerful and bright it looks under the October sun, making the best of misfortune as bravely as its inhabitants are doing.

The Red Light Extinguished.

Danger? A fig! If there were danger in entering Maidstone then would the present writer have something to boast about; but there is none—not a shred; not a particle. And as for Allington—why, the place is two miles away, with a distinct water supply, a wholesome situation, and as fine, invigorating an air as anyone need wish to breathe. It is strange to hear that a buyer from Bunyards' has cancelled a good order because—mark the reason—he does not care to have trees from a neighbourhood where there is fever! It would be as reasonable to refuse to buy sugar at the Army and Navy Stores because a plant in the Drill Hall was attacked by green fly. Injustice would be done to a good old firm and to a distinguished fruitarian if this example (which is based on complete lack of knowledge) were followed. Nothing kills like ridicule, and floods of it ought to be poured on people who display such unreasonable nervousness.

Visitors to Bunyards' need not go near Maidstone unless they wish. Practically, the nursery has a station of its own. "Ah!" someone may remark; "and that station is Barming, where the fever is bad." Another baseless objection. The station for Barming village is East Farleigh, and the L.C.D. station of the former name is probably two miles away. A good two miles, judging by the vigorous remarks of people who get out at Barming station under the impression that they are at the village. Nothing of the sort; they are at Bunyards'. There, close to the line, is a private gate, and a civil porter lets you through it. Once across the portal you have acres of trees all around you, and a wholesome fruit atmosphere, healthy, inspiriting, driving away with a rush all unworthy fears.

A Tree Transformation—Axes and Brains.

A beautiful nursery this. For a full mile along the railway it stretches, the front most tastefully and handsomely adorned with shrubs. It stretches away in all directions, bounded by a distant tree in one quarter, by a wood in another, and so on. The whole affair spells progress. Not so many years ago three parts of it was simply a wood. Axes got loose in the wood, so did brains. The axes did not scatter the brains (there is too much of that lop-sided system at work in the world), but the brains guided the axes. That is why scores upon scores of acres have been so marvellously transformed. They are wood now, if you like to look at it in that way, for far as the eye can reach almost there is nothing but trees, full of health and full of vigour; but the millions of fat buds bristling among and through the yellowing leaves tell of a new order of things. Their mission is a higher one than that of the old-time trees. They yield the magnificent fruit that carries the name and fame of Kent all over the United Kingdom. That forlorn looking bush, now drooping its aging foliage, gave a Bismarck the size of a teapot, and the drift of trees on the right yielded the Gascoynes of which the huge size, splendid shape, and brilliant colour have been the admiration of fruit growers everywhere.

Double Working of Fruit Trees.

The fruit trees, which stand in serried ranks at Allington, represent the finest material which high skill and good Kent soil can produce. When the axe was done with, spade and pruning knife came in, and there were brains behind them too. There are differences, because individual varieties have their special characters, but the differences are in habit of growth, not in health. Standard D'Arcy Spices, beside Ecklinvilles, show marked differences, the former being one of the weakest of growers, the latter one of the strongest, but the one is as clean and sound as the other. In connection with this point of relative vigour, it is instructive to observe the enormous care and time devoted to overcoming the weaknesses of varieties, especially by double working. Some varieties almost refuse to make standards. Neither coaxing nor pushing will get them up. Such awkward customers are conquered by grafting them standard high on more kindly sorts, but it all means time and labour, which again means money. To begin with, there is the stock proper (let us say the Crab), then there is the secondary stock (Ecklinville, for example). The Crab has to be produced, then the Ecklinville has to be thoroughly established on it, so by the time the graft can be put on six or seven years have elapsed, and more time still is needed to make a tree ready for sale. Buyers do not always think of these things when comparing the price of good trees and rubbish.

Some of the Apples.

And what about varieties? Sit down, puzzle your brains, and when you've made what you consider to be a complete list, you will discover

that they are all here, and plenty besides. Too many. Yes ; too many for the growers as well as the bewildered publie ; but it is the demand whieh regulates the supply. Belle de Pontoise is in very fine condition and promises well. Some people talk about Bismarck going down hill (it has perhaps become affeeted with the general "deeay" of some pessimist), but the signs of it are not apparent at Allington. Gascoyne's has been mentioned; its condition is remarkable. Hambling's Seedling goes down in the notebook at once, and before you are half way round the fruit room stations have been allotted in the garden at home to James Grieve, Lady Sudeley, Mrs. Barron, Newton Wonder, Christmas Pearmain, Allington Pippin, Bow Hill Pippin, Royal Jubilee, and Wealthy. James Grieve is mentioned as an "Early Cox's." Hum ! that must be pondered a little. Happy thought—try one. Verdiet—flavour good, Apple an aequisition, but (and somebody smiles) not *quite* up to the mark of the rare old champion. Nottinghamshire ought to be grateful to Kent for the way in whieh it advances the elaims of Newton Wonder. The examples of the latter are a sight to see. (Mem.—Half a dozen stations for this grand late sort.) Lord Derby and Lane's Prince Albert show well, and King of Tompkin's County is beautifully represented. A fine poor soil Apple this. There are splendid "Mothers" and "Mabbott's," and noble examples of fifty other good sorts, but type waits for no writer.

Old and New Pears.

Doyenné du Comiee is prominent amongst the former, rest assured. Truly, a splendid Pear. One of the happy band that possess both a future and a past. Emile d'Heyst is exeellent too, a most useful variety, whieh is steadily making its way. Amongst the less known sorts Beurré Fouqueray has strong claims, and so has Conference, but a speeial word must be said for Fondante de Thirriott. It is eharged with juiee, and has a flavour of its own. It has not perhaps the rich aroma and delicaey of Doyenné du Comice or Marie Louise, but a more refreshing Pear does not exist. Marguerite Marrillat is making progress, and will be more and more grown as time goes on. There are few early Pears so good. Of later varieties Le Leetier is one of the best.

The genial guide, Mr. Bunyard's right hand man for many a year, truthfully remarks that an Oetober afternoon is not enough to see everything. In the goodness of his heart he says something about "a week." But would the "Thirriotts" last out? I doubt it. Still, fever or no fever I shall go again.—W. Pea.

ROYAL HORTICULTURAL SOCIETY.

Drill Hall.—November 9th.

The exhibition at the Drill Hall on the above date was one of the smallest on reeord. The amount of bare spaee was considerable, but eannot be a matter for surprise when the number of other fixtures on the same day are borne in mind. Eaeh section was small, and there were only two or three large colleetions in the show.

Fruit Committee.—Present: P. Crowley, Esq. (in the ehair); with the Rev. W. Wilks, and Messrs. G. Bunyard, A. H. Pearson, A. Dean, W. Iggulden, C. Herrin, F. Q. Lane, J. Smith, R. Fife, G. Norman, G. W. Cummins, and J. Wright.

Very little produee was plaeed before the Committee on this oecasion. Mr. G. Wythes sent a brace of his new Cabbage, Wythes' St. Martin s, evidently a seleetion with a little of the Colewort eharacter in it. Requested to be grown at Chiswiek.

Mr. Owen Thomas sent a box eontaining two dozen splendid Cueumbers. The variety was raised at Frogmore between Roehford's Market Cueumber and Dickson's All the Year Round. It ereated a very favourable impression, and the Committee desired to see fruits early in the eoming year. The variety is named Frogmore All the Year Round.

Messrs. Hartland & Sons, Cork, sent Apples of Munster Pippin, very large, clearly striped, and mottled with red and yellow, but the Committee thought the variety could serve no useful purpose.

Mr. W. Iggulden sent four market baskets of Gros Colman Grapes, weight 48 lbs., grown in ordinary field soil in one of his vineries at Frome. The Grapes were splendid in size, uniformity and eolour, and a silver Banksian medal was unanimously awarded.

Mr. W. H. Divers sent from Belvoir Castle upwards of thirty dishes of Pears, elean and exeellent fruit throughout ; such a meritorious exhibit of Pears is rarely seen from a private garden. A number of bright John Downie Crabs seattered on the eloth between the dishes imparted a pieturesque appearanee to the collection. A silver Banksian medal was unanimously awarded.

Messrs. Harrison & Sons, Leicester, sent a collection of Beets under twenty names, but the Chiswiek trials have proved that one name answers for several varieties of Beet. The exhibit was good, and a bronze medal awarded.

Fruit Flavour Classes.—The first prize for a dish of Apples went to Mr. T. Turton, Maiden Erlegh, with Cox's Orange Pippin. Mr. G. Woodward was seeond with Ribston Pippin. In Pears the prizes went to Mr. G. Woodward with Doyenné du Comice, and to the Rev. H. S. Palmer, with Glou Morçeau.

Floral Committee.—Present : Mr. W. Bain (in the ehair) ; with Messrs. J. D. Pawle, J. T. Bennett Poë, C. E. Pearson, J. F. MeLeod, J. Jennings, C. J. Salter, J. H. Fitt, C. Jeffries, E. Mawley, and R. M. Hogg.

Mr. R. Gulzow, Bexley Heath, sent to the Drill Hall a large group of seedling Dracænas. The plants shown comprised many that were distinct from existing varieties, and several were of fine quality. Unfortunately, the dulness of the weather and the position in which the plants were placed made it impossible to see the colours properly (silver-gilt Flora medal).

Messrs. H. Low & Co., Upper Clapton, sent a small collection of Carnations. Mr. C. Caddell, The Gardens, Camfield, Hatfield, showed Chrysanthemum Ellen Lady Clark, a new white variety. Messrs. W. Balchin and Sons, Hassocks Nursery, sent Diplaeus rubrum and D. Jubilee. Messrs. J. Veiteh & Sons, Chelsea, staged Aster grandiflorus and Wallflower Parisian Early.

Very fine was the exhibit of Chrysanthemum blooms staged by Mr. G. Wythes, gardener to Earl Percy, Syon House, Brentford. Each flower was shown on a long stem, and the effeet was very good. Both Japanese and incurved varieties were represented, and amongst the best may be noted, of the former, Miss M. Blenkiron, Royal Sovereign, Viviand Morel, Mdlle Marie Hoste, Charles Blick, Florenee Davis, Edwin Molyneux, Amos Perry, Australie, Graphie, Miss Elsie Teichmann, H. L. Sunderbrueh, Col. W. B. Smith, Mdlle. Thérèse Rey, and Pride of Madford. Of ineurved varieties there were Emily Dale Improved, Lord Alcester, Brookleigh Gem, Mrs. Dixon, Golden Beverley, Mrs. S. Coleman, Jeanne d Arc, Madame Darier, and Golden Empress (silver Banksian medal).

Mr. W. J. Godfrey, Exmouth, sent a few Chrysanthemums, quality taking the place of quantity. The flowers were large without being eoarse, and the eolours were elear and beautifully developed. Amongst others were W. H. Godfrey, Lady Northcote, Duke of Wellington, Admiral Ito, George Gover, Mrs. M. Grant, Beauty of Adelaide, and Mrs. Chas. Keyser.

A. Kingsmill, Esq., Harrow Weald, send fruiting pieces of Vitis heterophylla humilifolia, of whieh the profusely borne berries are slatish to bright blue, with darker spots. Mr. W. Bain, gardener to Sir Trevor Lawrenee, Bt., Dorking, sent Sonerila in variety, with Chrysanthemums bronze Mrs. J. Gardiner and Brnant.

Mr. R. Owen, Maidenhead, sent a small collection of Chrysanthemums, including ineurved, Japanese, and Anemone flowered varieties. Mr. J. Russell, Richmond, exhibited a eapital colleetion Ivies, including dwarf plants, bushes, and standards (silver Banksian medal).

In addition to the exhibits that have been noted above, there were several others, mainly of Chrysanthemums in small numbers. As none of them was of speeial merit it would serve no good purpose to particularise.

Orchid Committee.—Present : H. J. Veitch, Esq. (in the ehair) ; with Messrs. J. O'Brien, De B. Crawshay, H. J. Chapman, F. J. Thorne, T. W. Bond, W. H. Young, J. Jaques, C. Winn, S. Mason, R. Courtauld, H. M. Pollett, W. Thompson, and T. B. Haywood.

Mr. Smith, Orchid grower to the Right Hon. Joseph Chamberlain, Highbury, Birmingham, sent half a dozen Orchids, eomprising a variety of Cattleya labiata, C. Fabia, C. Mrs. Endieott, C. marseillensis, with Lælio-Cattleyas Sallieri and Semiramis (silver Banksian medal). Messrs. W. L. Lewis & Co. ,Southgate, sent a number of plants of Lælia præstans, of whieh this firm has a eharming type (silver Banksian medal). Messrs. H. Low & Co., Upper Clapton, sent Vanda eœrulea, Calanthe Veitchi alba, with a few Cypripediums in variety. Messrs. F. Sander & Co., St. Albans, exhibited some eharming Orehids, ineluding Lælia autumnalis delieata, a few varieties of Cattleya labiata, C. aurea, Lyeaste Skinneri, Cypripedium insigne Sanderæ, Dendrobium Johnsoniæ, and Lælio-Cattleya broomfieldiensis (silver Banksian medal).

Messrs. J. Veitch & Sons, Ltd., Chelsea, were not largely represented by Orchids, but the plants were very interesting. There were Lælio-Cattleya Deeia, L.-C. Lady Rothschild, L.-C. Pallas, L.-C. Statteriana, Cattleya Portia, C. Eurydiee, Lælia Novelty, with Cypripediums Niobe, Euryades, and Tityus (silver Flora medal). G. Shorland Ball, Esq., Ashford, Wilmslow, sent a small eollection of Orchids in whieh Cypripediums were most conspicuous. The varieties were of good quality (silver Banksian medal).

Certificates and Awards of Merit.

Calanthe Veitchi alba (H. Low & Co.).—This is a pure white form of the type, and is very rarely seen (award of merit).

Cattleya Fabia (J. Smith).—A grand hybrid from a cross between C. labiata and C. aurea. The sepals and petals are rich rose, and the superb lip is velvety crimson, paling towards the margins (first-class certifieate).

Cattleya labiata Lewisi (W. L. Lewis & Co.).—The sepals and petals of this variety are pure white, as is the fimbriated edge of the lip, the central portion of whieh is maroon (award of merit).

Chrysanthemum Admiral Ito (W. J. Godfrey).—This is a reflexed Japanese of fine form. The colour is very pale orange with yellow tips (award of merit).

Cypripedium Heeanum magnificum (G. S. Ball).—A beautiful variety. The petals and poueh are green suffused with brown. The dorsal sepal is green at the base and pure white beyond. There is a broad brown band running down it (award of merit).

Dracæna indivisa var. (R. Gulzow). — A handsome green-and-white leaved variety (award of merit).

Sonerila Lady Burton (W. Bain).—A silvery leaved form with green venations. The flower is pink (award of merit).

Wallflower Parisian Early (J. Veiteh & Sons).—A large flowered dwarf growing annual variety. The colour is yellow and yellowish brown. The plants shown were from seeds sown in May (award of merit for the strain).

ORCHIDS

Cœlogyne Sanderæ.

This is a very charming Orchid, and is distinct from all the other species of Cœlogyne. As may be seen by a reference to the woodcut (fig. 68) the flowers are small, and are produced on an erect spike. The petals and sepals are creamy white, with a faint tinge of lemon yellow. The lip is white, with a beautifully fringed margin, orange yellow centre, surrounded with longitudinal ridges of brown hair-like filaments. When it was exhibited by Messrs. F. Sander & Co., St. Albans, in 1893, it received the first-class certificate of the Royal Horticultural Society. This information will probably be of interest to others as well as "Geo. Browne," who has written to us on the subject.

Cœlogyne fuliginosa.

This is not a very showy species, but the dusky looking flowers are very distinct, and are produced two or three on a spike, though only one of these is expanded at a time. The sepals are almost white in ground colour, the petals narrow and thread-like, reflexed at the tips; the lip has a brownish front lobe and central lines of the same colour, from which the species takes its name. The pseudo-bulbs are each about 3 inches in length, shining green, and connected with a wiry rhizome. Its culture is not difficult, and it thrives in a shady, warm house. It is not always as free-flowering as one could wish, but always grows at a great rate. It is a native of Northern India, and was first introduced in 1838.

Cattleya Bowringeana violacea.

This is quite distinct from the typical C. Bowringeana, and makes a nice companion plant, though it is not so showy. The sepals, petals, and lip are rose suffused with violet, the tubular lip having a blotch of the same colour in the front. C. Bowringeana is, unfortunately, one of the worst of town Orchids, and growers in the neighbourhood of London have great difficulty in preserving any of them from the fog. For this reason it should be kept warm in such localities in order to bring out the blossoms early.

Odontoglossum Edwardi.

Although the individual blossoms of this species are small, their distinct and showy colour, and the handsome appearance of the long branching spikes, make it a favourite wherever grown. In habit it is quite distinct from the majority of the genus, the smooth oval pseudo-bulb being about 5 inches high, the deep green foliage attaining considerable height. The spikes occur at the base of the bulbs in the sheath formed by the leaves; they appear at various times during late summer and autumn, and are usually in flower during winter. Plants that are strong and well grown produce immense panicles a yard and upwards in height, freely branched and many-flowered.

The colour is a bright magenta or puce, the lip having a yellow centre, and the blossoms are sweetly scented. It is a native of Ecuador, and thrives well in a cool moist house all the year round. It usually commences growing early in spring, soon after the blossoms are past, and the progress of the growth is rapid, provided the atmosphere and temperature are kept right, and the plant otherwise treated judiciously. When the pseudo-bulb is nearly finished the flower stems show, and during the time this is forming the plant has the dual strain of the advancing spikes and finishing bulbs.

This is the time when most water will be required, but it is a rather thirsty plant all the year round. The only time a slight diminution is necessary is just after the blossoms are past, but even then the bulbs must be kept plump. The roots are large and fleshy, much more so than most other kinds, and like a very rough and open description of compost. Good fibrous peat in lumps as large as a Hazel nut, and clean freshly gathered moss in equal proportions suit it well, but to keep it aërated and open a liberal addition of charcoal broken in lumps may be made.

Turn the plants out of their pots very carefully, as they are easily damaged by undue disturbance, and if the roots are much entwined about the inside of the pot the latter should be carefully broken. The roots may be reintroduced with the pieces of potsherd attached, and the bases of the pseudo-bulb should be kept a little above the rim of the pot, filling up with the compost and finishing in a clean convex line. After repotting, which should take place after the growth has made considerable progress, allow rather less moisture than usual at the roots, but keep the atmosphere very moist. Syringing is not advisable during dull or damp weather, but light dewings are helpful on hot days.

Besides being of assistance in keeping the atmosphere right, it helps also to keep insects at bay. Scab and red spider are the most frequent pests, but these are easily kept under with ordinary vigilance. A house that always seems pleasantly cool on entering from outside is rather difficult to arrange in very hot weather, but this is the best place for O. Edwardi. It is not much use attempting to keep it at any stated figure, but as near 60° as possible is the most suitable day temperature, dropping a few degrees by night. Even in winter very cool treatment is not advisable, as while the spikes are advancing the plants are easily checked.

Shade and free ventilation are also essential, and in winter a nice light position should be allowed. Its habitat is high up on the Andes

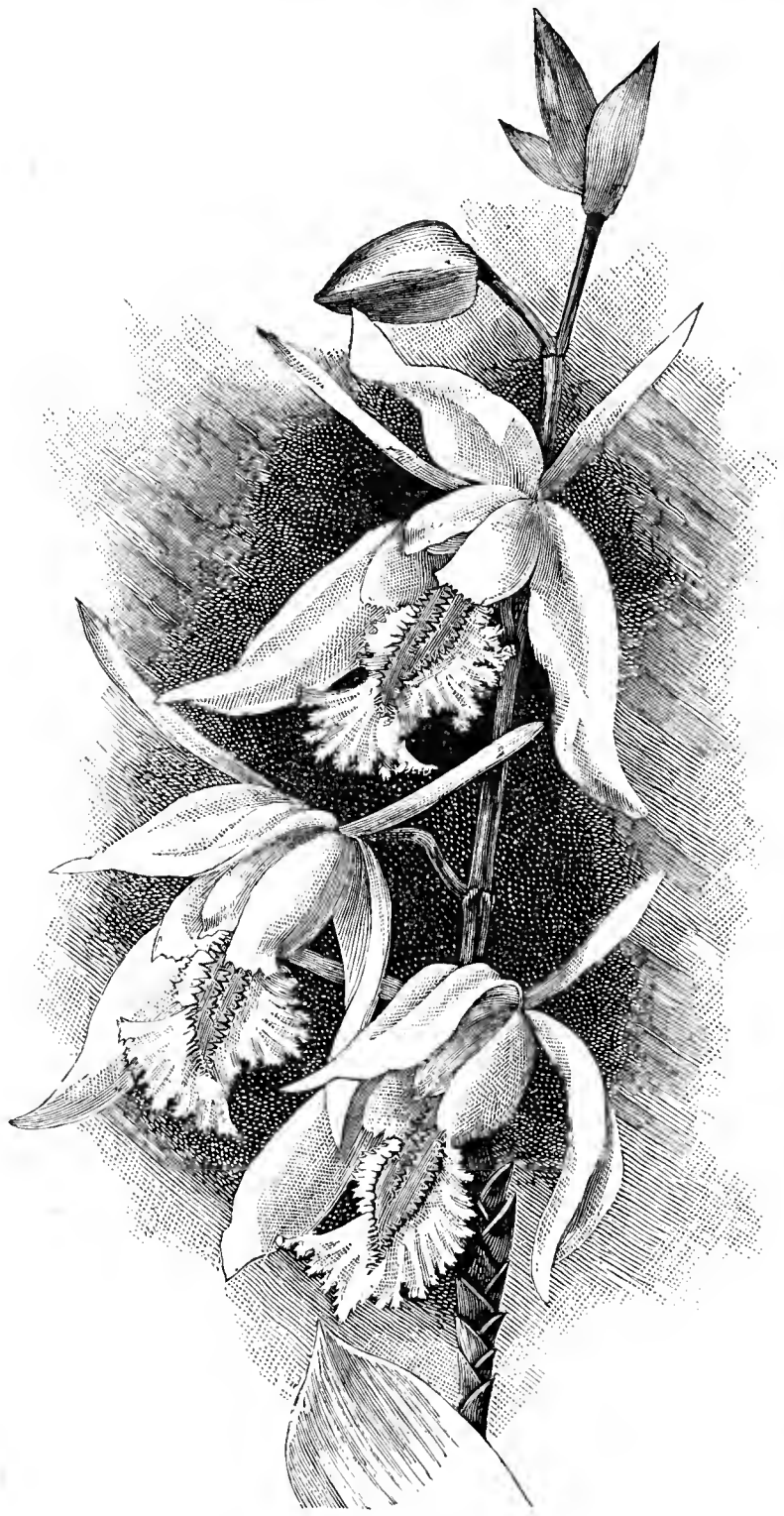

Fig. 68.—Cœlogyne Sanderæ.

of Ecuador, where it was discovered some seventeen years ago by a German collector, Edward Klabret, after whom it was named by Reichenbach. Few varieties of it are known, and these principally differ from the type in the size of the flower, which varies from three-quarters of an inch to nearly double that width. These last well in good condition, and the plants are useful for indoor decoration. It first flowered in this country at Wilton House, Southampton, in the collection of Mr. H. J. Buchan.—H. R. R.

THE LAST FLOWERS OF AUTUMN.

Roses are blooming very late this year; but the weather is growing perceptibly colder, and their season will soon be past. Yesterday (November 7th) I gathered a bouquet of several of the finest varieties, including Marie Van Houtte, which is always with me the latest flowering of all the Teas; Caroline Testout, a splendid variation from La France; Clara Watson, one of the grandest of the Hybrid Teas; A. K. Williams, which still retains, under most unfavourable atmospheric conditions, its beautiful form and brilliant complexion; Viscountess Folkestone,

which has not yet forfeited its charming fragrance; Madame Pernet Ducher; Niphetos, heroically blooming on the south wall of my garden; and Souvenir de S. A. Prince, which, without any protection, is achieving similarly gratifying results. The absence of frost, notwithstanding the prevalence of a strong east wind, may account for this long continuance of bloom.

I have an Auratum Lily at present in flower, the latest I have ever seen in any garden; but the blooms, of which there are twenty-one, have not their normal brightness of aspect, and are limited in dimensions. Nevertheless, from a distance it has a striking effect. The white flowers of a very late speciosum Kraetzeri are wrestling with the winds. Sweet Peas, single Dahlias, and "early flowering" Chrysanthemums still appear to flower with considerable facility, and will, no doubt, continue to do so until the full severity of winter has come. Even then Jasminum nudiflorum will console us, and the Snowdrop and Crocus will not be far away. —DAVID R. WILLIAMSON.

GROS COLMAN GRAPES AT COBHAM.

A FEW years ago Mr. A. A. Bennett, of Cobham, Surrey—a worthy member of a respected family of land-owning farmers there—was impelled to depart from the beaten track and indulge a little more freely than before in his taste for gardening. He started with small houses, and these answering, he erected larger. Altogether there are about twenty now; as compact a block and as well occupied as anyone could desire to see. He was fortunate in securing as a cultivator such a sound gardener as Mr. J. G. Smith. Not the Vines only, but various plants grown for cut flowers—and notably, perhaps, Freesias—are entirely creditable to all concerned.

The vinery (of which we give a photo) is a span-roof structure, rather flat and low, its dimensions being 160 feet by 20. It is one of three similar houses erected in 1888, which, not being intended for vineries, were not provided with any front ventilation, and not very much at the ridge; in spite of this drawback the Grapes have always coloured fairly well, the berries being of good size.

The Vines were planted 3 feet apart in 1892, having been raised from eyes the previous season. They made good growth to the top of the house and part of the way down the opposite side of the roof, the canes being well ripened, and at pruning time were allowed a length of 3 feet from the first training wire.

The following season, 1893, they carried 832 lbs. of Grapes, and at the winter pruning were left with an extension of rod of about 3 feet, the crop in 1894 weighing 3144 lbs. In 1895 with rods 2 feet longer, 2702 lbs. were cut, the reduction in weight being accounted for by the smaller bunches, which, however, were of a good saleable size. The following year, 1896, fruiting to the top of the available space, the weight amounted to 2920 lbs. The total length of rod is 10 feet from the first wire to the apex of roof, and about 2 feet from the surface of the border to the first wire. The other houses have borne weights very similar to the above, the three houses varying but very little.

The borders are composed of the natural soil, which before the Vines were planted was trenched about 5 feet wide on each side of the house, road sidings and burnt garden refuse being mixed in as the work proceeded. An additional width of 2 feet was added in 1894, and now the border extends the whole width of the house.

It will, perhaps, be assumed that the soil is naturally an ideal one for Vines. As a matter of fact it is so sandy that half the gardeners in the kingdom would have voted for its removal and the making of new borders of sound turfy loam. There is one great advantage of sandy soil—namely, that it can be generously fed without souring. What has been used in feeding in what are known as the Ashford Vineries we are unable to say, but there were bags of steamed bonemeal about—a better fertiliser, perhaps, than everybody comprehends. Whatever may have been used, and assuming that the crop this year equals that of last, over 5 tons of Grapes have been taken from the house in as many years, which is not bad for sandy soil.

The Vines have been under the care of Mr. Smith the whole of the time. The photo (page 459) was taken for Mr. A. A. Bennett by Mr. Walter Johnson, Cobham.

POTENTIAL PLANT FOOD.

THERE is very little plant food in sandy soils, but what there is is readily available. In clays there is more potential plant food, but not so readily available. In order to make it useful the soil requires more tillage. This is an important means of releasing plant food which otherwise might remain locked up, as it were, in the soil. The question of moisture is, however, quite as important. Water is the medium by which the soluble food in the soil passes into the root-system of plants, thence to the stems, leaves, and every part requiring development. An excess of soluble plant food applied to the soil when the latter is in a very dry state would prove injurious to the tenderest rootlets because there would not be a sufficient amount of water present to dilute the soluble food, making it safe for the roots to receive. It is well known to gardeners that highly concentrated liquid manure is injurious if given when the soil is dry to plants in pots.

Taking the soil as a whole there is an enormous amount of dormant food in it. Of the most important essential food constituents for the maintenance of vegetable life, potash occupies a leading place. It has been computed by reliable authorities that in the first 8 inches of an average soil there are 16,000 lbs. of potash per acre, 3000 lbs. of nitrogen, and 4000 lbs. of phosphoric acid. In the second 8 inches there are over 4000 lbs. of nitrogen, 2000 lbs. of phosphoric acid, and nearly 7000 lbs. of potash. These experiments were carried out with soils of very different character. Peat soil contained much humic matter; sandy soil had but little.

The results show conclusively what an enormous amount of food in a potential form lies at hand. Soil cannot really be exhausted. When any particular plot of ground is said to be exhausted of plant food, it is frequently more to the point to say that all its available food is exhausted. In a soil of a mixed character tillage will help largely in restoring fertility, rendering hitherto dormant constituents readily available.

Besides these enormous stores of food in the soil, there are other sources from which essential elements for the nutrition of plants are derived. The nitrogen added to the soil by the growth of leguminous plants is one instance, another is the stores of food brought by rain to the earth.—E. D. S.

KALES AT CHISWICK.

A LARGE collection of Kales has been grown at Chiswick this year. These are indispensable winter vegetables, but in the case of several varieties, especially those with bluish green leaves, a fungus or something else has literally eaten them up in the summer. Of such kinds as the Ragged Jack, Asparagus, Delaware, Buda, and Lapland Kale, not a plant is left, while one stock of Cottagers' Kale is half destroyed, as are most of the plants of Chou de Burghley. Generally, however, the Cottagers' Kales have escaped, while the several stocks of Scotch Curled Kale appear uninjured; the same may be said of Chou de Milan, Variegated Kale, the Dwarf Purple Arctic Kale, and the Portuguese Cabbage, Couve Tronchuda.

Several members of the Fruit and Vegetable Committee (Mr. H. Balderson presiding) examined the collection on Friday last, and while they found a few stocks worthy of three marks (* * *) of merit, many were disappointing. Scores of plants of "hearting" Kale had no hearts in them. Scores more of so-called Dwarf Curled Kale were neither dwarf nor curled; while not a few of the tall kinds were characterised by irregularity—in lankiness, and there was not very much to see about them beyond long stems.

Granted that the site and soil were not well adapted for the several plants, and that many of them would have been much better in the firm, thin soil of an open field, it was all the same clear that several of the stocks or strains were far from being so pure as they ought to be, and it is evident that there were "rogues' among those plants from which the seed was saved. That the soil is not accountable for all the irregularities was evident from those stocks which were pure; and these, perhaps, showed to the better advantage by contrast with the others.

It should be said that the site of the trial had for many years been occupied with fruit trees. These had been cleared out; and the ground trenched 2 or 3 feet deep. This had to be done in the process of levelling and securing uniformity in depth after the digging up of the trees, and for clearing out the roots. It could not be regarded as an ideal preparation for Kales for growing sturdily, and passing the winter. Still, there is no denying the fact that it was as fair for one stock as the other. Those which obtained *** were as follows:—

Cuthbertson's Curled.—Dark green, well curled, and stock "true."

Bryden's Selected Curled.—Good substantial plants, and all nearly alike.

Veitch's Variegated Kale.—Fine plants, colouring well, and far in advance of any other stock.

Dobbie's Victoria Curled.—The most densely curled of all, all the plants alike; a true and excellent stock.

Chou de Milan (Watkins & Simpson).—Fine plants, yielding abundance of produce, and all true.

Cottagers' Kale (Watkins & Simpson).—An equally fine and characteristic strain of this serviceable winter vegetable.

Culzean Castle Curled (Hurst).—A fine, hardy looking stock of the "old Scotch," and quite pure.

Late Hearting Kale (Hurst).—Less curled than the foregoing, but dwarf, sturdy, robust, and well hearted.

Dwarf Purple Arctic Kale, from Messrs. Barr & Dobbie, was awarded two marks (**). It is very dwarf and hardy looking. It is singular that the green form was not represented.

Two stocks of Brussels Sprouts were examined, but the plants were driven out of character by the deep-rooting medium in which they were grown.

Four varieties of Potatoes were cooked, and two marks of merit given respectively to Vert's Jubilee and Sutton's Supreme; but it was the opinion of the Committee that the season had been the reverse of favourable for the development of high quality in Potatoes, and this year's trials could scarcely be regarded as conclusive.

Notes & Gleanings

EVENTS OF THE WEEK.—For yet another seven days the rush of Chrysanthemum shows will continue. Southwards there are indications of the coming peace, but in the North the meetings continue with unabated vigour. A list of several of the shows will be found on page 455.

—— WEATHER IN LONDON.—During the closing days of last week and on the opening one of this the weather showed practically no variation. The nights and mornings were fresh and the days warm. Monday morning, however, brought a change in the form of rain, which fell for several hours. In the evening there was a most uncomfortable drizzle. On Tuesday it was foggy and damp, while at the time of going to press on Wednesday it was bright and fine.

—— A MILD AUTUMN. — At the Chrysanthemum Show, held at Exmouth on the 28th and 29th ult., several collections of vegetables, containing good and fresh samples of Green Peas, Scarlet Runner Beans, and Tomatoes, all grown in the open, without the least protection. In Mr. W. J. Godfrey's miscellaneous exhibit of cut flowers a good collection of single and Cactus Dahlias and Sweet Peas were noticed; and at the Exeter Show, held on the 4th and 5th inst., Mr. Godfrey again made an extensive show of these flowers, all grown in the open, with no protection.

—— WOLMER FOREST.—We learn that the Guildford Natural History Society has decided to present a petition to the Commissioners of Woods and Forests praying that Wolmer Forest may be reserved as a sanctuary for wild birds, in which they, their nests, and eggs may remain unmolested throughout the year; that it may not be let at any time for game preserving, or for any purpose inimical to bird life; and that it may remain in perpetuity as a national memorial to the greatest naturalist England has produced—Gilbert White, of Selborne. Such a recognition, the Society urges, would show that the admiration of Gilbert White was not verbiage merely, but that it took so practical a shape as to be of value to the naturalist and the English-speaking race for all succeeding time. The Society does not desire to interfere with the use of the Forest for military manœuvres.

—— HESSLE GARDENERS' MUTUAL IMPROVEMENT SOCIETY.—A meeting of the above Society was held on November 2nd. Mr. Geo. Wilson, Swanland Manor, occupied the chair, and Mr. Geo. Picker, gardener to F. R. Pease, Esq., read a practical and interesting paper on "Salad Plants and their Culture." The essayist gave a descriptive list of the different plants used for salads, with a short cultural account of each, and also the manner of dressing them. The hearty and humourous discussion which took place at the conclusion of the essay, together with the large attendance, showed to what an extent the subject was appreciated. The Secretary, Mr. J. Barker, Prestongate, Hessle, showed finely flowered plants of Dendrobium Phalænopsis Schröderianum, Cattleya labiata, Cattleya gigas minima, and C. aurea, arranged on the table with Cocos Weddelliana and Ferns. Mr. Blakey exhibited a fine variety of Cattleya labiata, and Mr. Coults Chrysanthemum General Rock, a new variety, and one that has evidently come to stay. Votes of thanks to the essayist and Chairman terminated the meeting.—G. W. G.

—— POTATO GROWING EXPERIMENTS IN CUMBERLAND.—At the County Council Dairy School and Experimental Farm at Newton Rigg, Penrith, Mr. W. T. Lawrence (the Principal) has just concluded some interesting experiments in Potato culture. Six plots of one-twelfth of an acre each were under trial. Dung alone (on plot 6) produced the best results, though half-dung, with half artificial manure (plot 5) followed closely with both Bruce and Abundance, and beat dung alone with the Up-to-Date variety. The artificial mixture used on plot 3—1¼ cwt. nitrate, 2 cwt. kainit, 5 cwt. superphosphate, costing 23s.—was used as a standard Potato manure for the soil at Newton Rigg—a firm loam (more kainit would have been included in a lighter soil), and the yield of this plot was not much less than that of the dunged plots. Evidently the extra 2 cwt. of kainit given to plot 2 was unnecessary, but the omission of a potash manure altogether, as was tried on plot 4, was disastrous, the yield being no more than on the unmanured plot. Up-to-Date was far and away the heaviest cropper, and the tubers were clean and of excellent quality. Abundance yielded rather better than Bruce; but the latter had far less disease than either of the other varieties.

—— SUTTON'S PEERLESS MARROWFAT PEA.—This Pea was shown in splendid condition at Sevenoaks Show, November 2nd. Although classed as a main crop, for late work it can be thoroughly recommended. These alluded to were grand dark bright green pods containing from eight to eleven peas of remarkable size and splendid flavour; in fact, I have not tasted a better Pea this season. It grows about 3 feet high, and is of a robust habit and most productive. Another recommendation is, it never is attacked by mildew.—RUSTICUS.

—— THE LATE MR. E. J. BAILLIE. I was grieved to see the account of the death of Mr. E. J. Baillie. It has been my pleasure to have known him upwards of twenty years. I have had several appointments to meet him to take part in public meetings, and my experience was the more you knew of him the better you liked him. He was not frightened of work, and if we were all to take pattern from his perseverance, many of us would be better gardeners than we are. I felt I could not let this opportunity pass without saying a word of respect for one who has given sound advice to many a young gardener, owing to which they have become a credit to the profession.—F. COULDREY.

—— PHILADELPHIA BOTANIC GARDEN. — At the meeting of Councils' Committee on city property Dr. William Pepper, on behalf of the Philadelphia Commercial Museums, made a request that 40 acres of ground along the west bank of the Schuylkill be transferred to the Institution, to be used as a botanical garden. This plot of ground was dedicated for park purposes by an ordinance of Councils on July 6th, 1883, but has lain useless. Dr. Pepper said that a museum of science and arts is to be erected near here at a cost of 2,500,000 dols., ground having been broken for one wing of the building, and it is desired to make the Botanic Garden an adjunct to the museum. The matter was referred to a sub-committee.

—— MELON THE MONARCH.—There is no scarcity of good flavoured Melons, but the best I have tasted is Monarch. It is an oval shaped green fleshed variety, with very thick melting flesh, good specimens weighing from 4 to 6 lbs. It is later in ripening than most varieties, but this is an advantage where a house is devoted to them, as if planted with others it prolongs the ripening season, and being such a good keeper it is excellent for autumn use. Everyone has his favourite variety of Melon. Some prefer a large and others a small variety. Flavour is the one important thing to be considered, and whatever else any variety has to recommend it, if lacking in quality it should not be grown again. Others we grow, and excellent in every way, are Earl's Favourite, The Countess, and A1. —J. F. G.

—— THE DAHLIA SEASON.—There seems to be no end to the Dahlias in the South this season. I understand in some parts of the country the frost has cut them to the ground, and the tubers are ripe and stored away. But we could cut a cartload of magnificent blooms. Varieties of the Cactus, such as Cycle. Starfish, J. E. Frewer, Beatrice, Ensign, Bertha Mawley, Princess Ena, Bridesmaid, Matchless, and others, are nearly equal to any we have exhibited this season. We could make up stands of the Show and Pompons quite equal in neatness, if not in size, to any I have seen this year. They present such a charming appearance that one has to pause to realise if it really is the month of November. There has not been frost enough to hurt a single plant, and to look at our bed of about 400 plants in one mass of bloom it appears more like September than only eight weeks prior to Christmas. I should be greatly interested to know how our brethren have fared right and left of us.—J. WIGGINS, *Fair Oak, Bassaleg, Newport, Mon.*

—— PRESERVING GREEN IN PLANTS.—Mr. Albert F. Woods of the Division of Vegetable Physiology and Pathology, United States Department of Agriculture, describes in the "Botanical Gazette" a novel method of preserving the green colour of plants for exhibition purposes. The principle involved is to bring about a combination of the chlorophyll in the cells of the plant with copper. The resulting compound, copper phyllocyanate, is practically insoluble in any of the ordinary preserving media except strong alcohol, and is not destroyed by light. The resulting green can scarcely be distinguished from the normal chlorophyll green. The process described is a somewhat complicated one. After removing the air as completely as possible from the surface and from the intercellular spaces by immersion in 90–95 per cent. alcohol, or by means of the air-pump, the tissues are placed in a 5 per cent. solution of glycerol containing enough dissolved copper sulphate or copper acetate to give it a bluish tint. The uncombined copper is dissolved out by a dilute glycerin-formalin solution, and the object may be preserved in this solution or in any of the usual media except strong alcohol.—(Nature.)

—— Victorian Era Exhibition.—We are informed that Mr. T. S. Ware, Tottenham, has been awarded a diploma for a gold medal at the Victorian Era Exhibition, Earl's Court, for planting the Imperial Gardens with plants and shrubs.

—— Royal Meteorological Society.—At the ordinary meeting of the Society, to be held at the Institution of Civil Engineers, Great George Street, Westminster, on Wednesday, the 17th inst., at 7.30 p.m., the following paper will be read :—"Results of a Comparison between the Sunshine Records obtained simultaneously from a Campbell-Stokes Burning Recorder and from a Jordan Photographic Recorder," by Richard H. Curtis, F.R.Met.Soc.

——, South Wales Weather.—Total rainfall for the month 3·44 inches, which fell on eleven days, with a maximum of 1·17 inch on the 15th. Average maximum temperature for the month, 58°; highest reading, 74° on the 1st. Average minimum, 39°; lowest reading, 24° on the 12th; below freezing point on four dates. There were four sunless days. The wind was in the N. and N.E. on nineteen days. Very wet in the middle of the month, but nice and dry, with cold strong winds the end of the month.—Wm. Mabbott, *Dowlais*.

—— Sussex Weather.—The total rainfall for the past month at Stonehurst, Ardingly, Sussex, was 0·34 inch, being 3·61 inches below the average of the Mid-Sussex district, and the driest October in a seventeen years' record. The heaviest fall was 0·9 inch on the 2nd and 15th. Rain fell on five days. The maximum temperature was 66° on the 19th, the minimum 37° on 8th, 12th, and 13th. Mean maximum 56·21°, mean minimum 44·14°, mean temperature 50·17°, which is 2·25° above the average. A fine month, but for many things a good rain is much wanted.—R. I.

—— October Weather at Hodsock Priory.—Mean temperature, 48·6°. Maximum in the screen, 67·2° on the 17th ; minimum in the screen, 29·1° on the 6th ; minimum on the grass, 20·8° on the 6th. Frosts, in the shade, one ; on the grass, sixteen. Sunshine, ninety-two hours, or 29 per cent. of the possible duration. Rainfall, 0·97 inch ; difference from average, 1·81 inch. Rain fell on fourteen days. Rainfall since January 1st, 18·51 inches ; difference from average, 2·58 inches. A fine month ; only twice in the last twenty-two years have we had less rain.—J. Mallender, *Worksop*.

—— The Weather Last Month.—October was dry, without any severe frost here, and tender flowers, such as Dahlias, were quite uninjured at the end of the month. The wind was in a westerly direction thirteen days. The total rainfall was 1·08 inch. This fell on seventeen days, and is 2·00 inches below the average for the month. The greatest daily fall was 0·35 inch on the 15th. Barometer (corrected and reduced), highest reading 30·623 inches on the 21st at 9 A.M. ; lowest, 29·436 inches on the 15th at 9 A.M. Thermometers : highest in the shade, 68° on the 19th ; lowest, 29° on the 6th. Mean daily maximum, 56·00°. Mean daily minimum, 41·03° ; mean temperature of the month, 48·51° ; lowest on the grass, 26° on the 6th ; highest in the sun, 115° on the 5th. Mean of the earth at 3 feet, 51·22°. Total sunshine, 128 hrs. 15 min. There were four sunless days.—W. H. Divers, *Belvoir Castle Gardens, Grantham*.

—— Weed Laws.—There is entirely too much law in our country. Everyone is to get rich by law—and law is to protect us from every evil. The State—whatever that may be—is to do everything for us. But when we put these laws into effect the absurdity becomes manifest. Among the daily news in the public prints is an account of a Potato patch that was so remarkably healthy that the plants were loaded with blossoms. It was reported to the County Inspector of Weeds that an outrageous growth of weeds was suffered to flower in the man's field. The inspector issued the usual citation to abate the nuisance. It was at the expense of some time and considerable chagrin that the guardian of the farmers' fields learned that the flowers were a legitimate part of the Potato plant.—("Meehan's Monthly.")

—— Malicious Damage.—Charles Clifton, of Rye Park, was charged with damaging with intent to steal growing Chrysanthemums, the property of William Dyke, at Rye Park, on October 22nd. Defendant pleaded guilty. William Dyke said he kept a nursery at Rye Park. On Saturday, October 23rd, he went into the Chrysanthemum house, and saw that some of the plants had been damaged, and the blooms taken away. He suspected the defendant, and sent for a policeman, and with him went and saw defendant. The latter said it was three boys who were at work at the brickfield who did the damage, but on the boys being fetched he admitted doing it himself. Witness put the damage at 6d. The Bench fined the defendant 6d., damage 6d., and costs 8s. 6d.—("Herefordshire Mercury.")

—— The Tupelo Tree.—One of the rarest trees in ornamental gardens is the Tupelo Tree, botanically, Nyssa sylvatica. Few trees can compare with this in rich autumn colouring, and the form of the tree is generally beautiful. In summer time, the rich, glossy, green leaves would make a beholder believe himself to be in an Orange grove. It is rare, says an American contemporary, because of the belief that it is difficult to transplant ; but, in our experience, we find it no more difficult, when nursery-raised trees are employed, than the majority of trees. The same objection was made, a few years ago, to the use of Oaks ; but experience has shown, that when intelligently planted, nursery-raised Oaks or the Tupelo Tree are about as safe as Maples or Poplars would be.

—— Ammonia in Plant Culture.—While the ordinary kerosene emulsion and solution of copper have proved an immense boon to the cultivator of fruits and trees in the open air, they are usually objectionable to the small amateur flower grower, to whom something clean and easily applied to small plants is a greater advantage. For these, the various insecticides and fungicides for sale by the florists offer some good recommendation. Where these are not to be had, it is said that a wash of ammonia is effective. As the ammonia bottle is now one of the supplies of every well-ordered household, it may be put into use readily. All these articles, however, require some little care in their first application. One should always try a little at first on some plants that are of no considerable value before risking them in a wholesale way. For instance, the scale on Orange leaves and the leaves of Oleanders, or the leaves of some similar plant affected with any kind of insect, can be tried first. If no injury follows, then it may be applied on a somewhat more extensive scale. A few plants and a brush to paint with, a considerable quantity can be gone over in a short time.—("Meehan's Monthly.")

—— The English Sparrow.—In America the English sparrow is developing one good feature in his much abused character. At Highland Park, Ill., he is deserting the frequented streets, and congregating in vast numbers in the neighbourhood of lawns where the wire grass, also known as crab grass, is plentiful. At this season of the year, where this grass is abundant and where the lawns have not been watered, its presence is readily noticed even at a distance by the large brown patches caused by the dying out of this grass, which is an annual. The unusual drought of the past two months has kept the lawn grass proper, the blue grass, and Clover, whose tops had been killed back by the crowding of the spreading crab grass, from springing up, as is its custom when invigorated by the autumn rains. Thus the space occupied by the crab grass is more plainly visible than customary. On these brown spots at different times of the day may be seen sparrows by the hundreds. They seem to confine their manœuvrings entirely to these brown spots, and to be busily engaged in picking up something. There can be no question but that they are eating the seed of this grass. Let us all wish them hearty appetites.

—— Caper Culture.—The Caper industry of Roquevaire, in the Department of the Bouches-du-Rhône, presents an interesting case of co-operation undertaken chiefly with the object of insuring the maintenance of the reputation of a locality for the quality of its produce. The Caper producers of Roquevaire have combined in order to counteract the depression of prices induced by the action of the local trade, which mixed Algerian and Spanish Capers of inferior quality with those bought in Provence. Roquevaire contains some 3000 inhabitants, and nine-tenths of the Caper producers of the commune have engaged to deliver their whole production to the syndicate, and, according to a contemporary, the experiment is said to have proved completely successful. The Caper is the floral bud of a bush (Capparis spinosa) which has been cultivated from time immemorial in Provence. This bud is picked when very small by women at intervals of five or six days during the season, which lasts from the end of May till the beginning of September. The Capers are put into wine vinegar, and steeped for two or three months, after which they are delivered to the Association, by whom they are sifted and then replaced in vinegar, and kept in barrels until sold. The Capers are classified in six qualities, the finest being worth about £4 per cwt., and the inferior sort about 10s. The net produce of the sales is divided among the members proportionately to the amount and quality of their deliveries. In 1893 the members of the syndicate picked 1659 cwt. of Capers, and their sale produced £3115. This allowed of an average of 4d. per lb. being handed over to the members in 1894. Before the syndicate was established the trade only paid 2¾d. and 3d. per lb. In the season 1894-95, however, the syndicate could only distribute 3½d. per lb., owing, it is said, to the outside trade delivering mixed Capers under the name of Roquevaire Capers, and thus lowering the prices in the consuming markets.

CARTON, MAYNOOTH.

(In Autumn Dress.)

On an ideal autumn day, such as is rarely vouchsafed to us in mid-October, a run is made for scenes familiar, yet ever fresh and ever new. Some few days, indeed, of glorious weather had left our roads in prime condition for those who favour the pneumatic tube, so mounting our wheel, and away we are, soon bowling along through North Kildare. Encountering no stones to rattle our bones, or aught, as a matter of fact, to warrant any anxiety, quite consistent with those who depend upon that frail air cushion, the trip from start to finish is one of unalloyed enjoyment. Ere reaching the demesne, from the high-level road pretty peeps are afforded of the picturesque Rye valley. The river, to give it its due, but little more than a tortuous stream, meanders away on the left to quaint old Leixlip past an ancient moss-covered mill with its water-wheel, which has furnished to artists a subject for their easels as frequently, perhaps, as the famous old Nant Mill in Cheshire.

One wonders to see such a profusion of Blackberries adorning the hedgerows practically unheeded by bird or biped, but they have been late in ripening this year, and with the advent of October there is some fairy lore amongst our peasantry which makes them forbidden fruit. Their luscious appearance, however, tempts one to dismount and sample them, but either the fairies or the frost have run away with all flavour, so we pedal on to Carton, entering by a back lodge, which gives the longest stretch of road to cover and provides the most satisfying natural scenery *en route;* such, indeed, as one would scarce expect to find from a bird's-eye view of the comparatively flat surrounding country. The aforesaid Rye, however, which bisects the estate has at some remote period washed its way by a dynamic force no longer displayed, and uncovered stupendous masses of rock to charm the latter-day landscape eye. This part of the demesne is a feature in particular, but others there are at every turn inimical to all hurry in reaching the gardens.

There was a little doubt when the encircling belt of timber came into view as to whether the stormy winds which blew a week previous had not robbed the scene of its autumn glory. Such, happily, was not the case, and after an exchange of compliments with the guardian of the gate, one has fairly entered fairyland viâ a glade gorgeously canopied with the gifts of our all too brief Indian summer. The Lady Fern, with the more common Lastrea, are still fresh beneath the shade, and a rather striking undergrowth is afforded in places by the common Privet with a season's growth springing from old stems cut back to the ground level. Gaining higher vantage ground immediately over the deep natural ravine, where the Rye rolls lazily, "The Turret" offers a resting place, and possibly the finest view in the whole demesne. Here a halt is made to absorb the beauty of the scene. Apparently, Nature has exhausted her colour box upon a picture so daring in its grandeur that my poor pen may not presume to portray it. From below comes up the sound of murmuring waters: nought else to break the hush which reigns save the low-whispering foliage. Who could tell of such things, which are as much felt as seen?

Time flies not here; just runs with the current of one's thoughts; but we are again awheel, and away along the upper carriage road, silently passing the only specimen of our species yet in evidence since entering, who is too absorbed in his own way, apparently the way to extract rabbits from a bank, to see us. As he casts no furtive glances the occupation is doubtless legitimate. What a fine picture the old tower makes to-day perched on the highest ground in the Park! The view is a distant one, but sufficiently near to see that some bold plantings recently made in its vicinity are well planned. Down a smooth decline of the smoothest of roads the lake is reached, and running past it on a parallel course a stop is made on "The White Bridge" for a full length view of it. Distance lends enchantment, for although a closer inspection would reveal where an early frost has caught and curled the foliage of the Dogwood, from here the banks are ablaze with crimson-tipped bushes, whilst a towering mass of old gold reveals the presence of the Horse Chestnuts in the cottage grounds, a veritable Klondike of colour.

As this day, and practically this paper, is devoted to autumn tints, one must make a passing mention of the Stag's-horn Sumachs in the same picturesque nook. They are not seen to-day as there are limits to mileage even if measured by a cyclometer, but this particular foliage from this particular place has been seen to vie in brilliancy with Poinsettia bracts. The contiguity of the water may possibly account for this.

Descrying the portly figure of an old retainer silhouetted against a pier of the Maynooth Lodge gates our wheel is spun in his direction, and from here it is pleasant to note how the Limes composing the long avenue to Maynooth have increased in stature. This avenue should, in the course of a few years, be one of the most perfect of its kind, the broad road and liberal grass margin upon which the trees are set well back being the right and proper thing planters are not always prone to adopt, although but few could fail to see the mistake afterwards. Returning eastward the gardens are reached and Mr. Black is found. There is plenty to see, to talk of, and to talk over, but not even the glories of some well-flowered Cattleya labiata must clash with autumn tints. Ampelopsis Veitchi on the wall, around an old arched entrance, is in superb colour. Passing the Pergola fine Beeches stand out here and there in grand attire, and here it may be again remarked in the neighbourhood of water, in which Mr. Black points out one of Marliac's hybrid Nymphæas bristling with buds, doomed, we fear, to remain as such till they disappear.

One particular feature, quite in keeping with our theme, remains to be noticed—viz., a number of Pampas Grass in full plume raised from seed by our enthusiastic guide. All these seedlings partake more of the light and graceful character of Arundo conspicua than of the stiffness of the type, and some of them are as novel as most of them are distinct, ranging in habit from dwarf to tall, and varying in colour from silvery white to pale purple, the most remarkable being one of a yellow shade, shot with a tint of pale green. Examples of Prunus Pissardi, planted some years ago, are now assuming a tree-like form, fully bearing out the good character it came to us with. But the brightness wanes as the curtain of night descends, our wheel awaits to bear us from "The dear old-fashioned place, with all its constant nameless grace."—K., *Dublin.*

Chrysanthemum Shows.

As is usual at this time of the year we have received numerous intimations of Chrysanthemum shows which are to be held during the coming season. Space, however, can only be found for mentioning those that have been advertised in our columns. If any have been omitted we shall be glad to add them to the following list. We append the names and addresses of the various Secretaries.

Nov. 12th and 13th.—Bradford.—R. Eichel, 16, Westcliffe Road, Shipley.

„ 12th and 13th.—Eccles.—H. Huber, Hazeldene, Winton, Patricroft.

„ 12th and 13th.—Sheffield.—W. Housley, 177, Cemetery Road, Sheffield.

„ 17th and 18th.—South Shields.—B. Cowan, Harton, South Shields.

„ 17th and 18th.—Hull.—E. Harland and J. Dixon, Manor Street, Hull.

„ 17th and 18th.—Bristol.—E. G. Cooper, Mervyn Road, Bishopston, Bristol.

„ 17th and 18th.—Rugby.—W. Bryant, 8, Barby Road, Rugby.

„ 17th, 18th, and 19th.—York.—J. Lazenby, 13, Feasegate, York.

„ 18th and 19th.—Bury St. Edmunds.—G. A. Manning, "Bury Post," Abbeygate Street, Bury St. Edmunds.

„ 19th and 20th.—Bolton.—J. Hicks, Markland Hill Lane, Heaton, Bolton.

„ 25th and 26th.—Leamington Spa.—L. L. Lawrence, 76, Parade, Leamington.

Chrysanthemum Leaf Rust.

The leaf of the variety of Chrysanthemum Niveus sent to the Editor by Mr. Briscoe-Ironside from Italy, and referred to in the *Journal of Horticulture*, page 436, is infested by the Chrysanthemum leaf-rust fungus, Trichobasis (Uredo) Chrysanthemi, the Puccinia or teleutospore stage not having been reached—indeed the only Puccinia Chrysanthemæ yet recorded to have been seen is that shown on page 381 at E, fig. 57.

Mr. Briscoe-Ironside's specimen accords almost exactly with that first noticed in England on August 21st, and examined by me on the 26th of that month. The pustules of the Italian specimen are, however, somewhat larger, yet the uredospores coincide in conformation and size. The Isle of Man specimen also agrees with these, all having uredospores only, and still retain vitality, eagerly pushing germinal tubes on a fresh Chrysanthemum leaf. Bisulphide of calcium solution, if it actually reached the pustules, evidently had produced no injurious effect on the rust or uredospores, and no trace of either lime or sulphur could be discerned; therefore it, as suggested by Mr. Briscoe-Ironside, may not have been distributed on the under side of the leaves to which the pustules in his case are solely confined.

The Kent and Somerset specimens were much the worst affected by rust, as alluded to on October 21st, page 380, the under side of the leaves being a mass of pustules run together, and some even present on the upper surface. In the Somerset specimen was found the teleutospore, part of the leaf being shown at A, fig. 57, page 381; but, as Mr. C. Orchard observes, page 438, the disease is "really much worse than it appears in the woodcut. The prolific spores (uredo) that fall from the under side of the leaf smother everything, being of a brown snuff colour."

Thus rust breaks out almost simultaneously in Berks, Kent, Somerset, Isle of Man, New Jersey (United States), Italy, and Isle of Wight. Albeit, the Berkshire specimen was first noticed, and as such gives prominence in the illustration on page 381.

I offer no comments on the appearance of the rust, the evidence being lacking of its introduction from the United States. It certainly is distinct from any Trichobasis or Uredo found on Compositæ in this country, and may ultimately, as I regard it now, be admitted an evolved form of Puccinia Artemisiæ, or, as suggested by more recent investigation of P. compositarum, a somewhat common parasite on the "Hard Head" or Black Knapweed (Centaurea nigra), the difference between which and P. tanaceti does not appear on investigation.

In a somewhat varied and lengthened experience in gardens, extending to fields and woods, I have always found cleanliness the best precursor of health, but I repudiate the commonly regarded proclivities of plants to disease as predisposed by grave cultural defects. The enemy we have to face is a living thing reproduced by spores, and must be annihilated if possible. I may, perhaps, refer to "damping" as an alleged cause of the attacks another day. In the meantime I am much obliged to correspondents for specimens and observations.—G. ABBEY.

An Amateur's Chrysanthemums.

I HAVE recently seen a good instance of what a persevering man can do in the culture of Chrysanthemums who has no special knowledge, appliances, or even a structure for flowering the plants in. Mr. James Dickson, a plumber of Dover Road, Northfleet, Kent, attempted the culture of a few Chrysanthemums last year. He was so far successful that he produced a large bloom of Viviand Morel which was very creditable. He also succeeded well with Mdlle. Lacroix, Lord Alcester, and Mons. Bernard, Mrs. Dixon, and others.

He sheltered his plants under some temporary lights in his back yard. The plants were saved in their flowering pots through the winter, and new stock secured in spring by dividing the suckers, potting and growing them in good material, eventually placing them in 8 and 9-inch pots. Viviand Morel again took the lead, a disbudded plant of this variety furnishing three splendid deeply coloured blooms from terminal buds. Another plant was not so freely disbudded, smaller blooms, but useful, being the result. The three large blooms were 7 inches across, and considering the experience and means of the grower, extremely satisfactory to him. He also produced good blooms of the old, tall, 8 feet variety, Madame C. Audiguier, Lord Alcester, incurved; Mons. R. Bahuant, Mrs. Dixon, Mons. Bernard, W. G. Newitt, W. H. Lincoln, Gloriosum, and several others. The warm days of October assisted the plants materially, which practically developed their blooms in an outdoor temperature and with abundance of air.—E. D. S.

Chrysanthemums at Earlswood.

THE seeker after novelties will find at Mr. W. Wells' establishment at Earlswood one of the finest and most extensive collections of new Chrysanthemums in the trade. Both in number of varieties and in high average quality there is little to be desired, and the cream of the collection is housed in a large span-roofed greenhouse, 160 feet in length by 22 feet in width.

Of fairly recent introduction there are several varieties that maintain the first impressions that were formed of them. But those of 1897 from Mons. Calvat are equally so, if not better. In the narrow limits of a short notice like this it is impossible to do justice to raiser and grower alike, and so only a few brief notes can be spared, as there are others from different sources that will also claim a few words. Directeur Liébert is a very fine globular Japanese, with medium grooved florets, large in size, and of a deep lilac mauve. Then N.C.S. Jubilee is a noble incurving flower; colour, pale lavender pink, with broad florets, having a silvery pink reverse. For solid compactness of build, largeness of size, we specially recommend Madame Ferlat, a grand white incurved Jap, and Mdlle. Lawrence Zédé, of similar type, but violet amaranth in colour, and reverse of silvery pink. Mons. Massange de Louvrex is a new yellow. Souvenir de M. F. Rosette, deep plum coloured amaranth, big and solid. Werther is a fine rosy purple incurved Japanese, with silvery turnover. Surpasse Amiral, deep rich yellow. Princesse de Galles, a long petalled white Japanese. Congrès de Bourges, deep purple: and others of the present season are Souvenir de Malines, Madame X. Rey Jouvin, Madame A. Rousseau, Madame G. Bruant, which we think have already been described in these columns. The green incurved Japanese Madame Ed. Roger is effective and well coloured, and promises well as a curiosity, and close at hand is a truly grand novelty, by name Mdlle. Lucie Faure, of incurving Japanese build, solid, closely built, and massive; colour, pure white. Vicomte Roger de Chézelles is golden bronze, and Mons. W. H Fowler, a pearly silvery pink, shaded rose, must be the last.

From other sources there are plenty of beautiful large white show flowers in the Japanese section whose purity of tint make them welcome to those who require first-class varieties of that colour. Mrs. C. Blick, Pride of Maidenhead, Mutual Friend, Mrs. H. Weeks, Madame Ph. Rivoire, Snowdon, and the charming Simplicity, of American origin, with its lengthy florets and great size. Western King, Princesse Hélène, C. B. Haywood, Emily Silsbury, and Madame Louis Remy, a white sport from Mrs. C. Harman Payne, must not be forgotten in this shade. Yellows are also plentiful, and comprise all that is newest and best. Mdlle. Lucie Matthieu de la Drome is a closely built incurved, florets narrow, colour pale golden yellow. G. J. Warren is immense, a fine pale yellow counterpart of Madame Carnot, from which it is a sport. There are many splendid blooms of this novelty. Sunstone, rather tall in growth, is a beautiful shade of apricot yellow. C. A. Owen, a deep rich golden hue. Modesto needs no description, neither does Royal Sovereign. Mons. Frederick Daupias, C H. Curtis (incurved), Ella Curtis, a golden yellow Japanese, dusted carmine; and a very fine one called Georgiana Pitcher, a large globular Japanese, rather broad, grooved florets, colour pale canary yellow with silvery yellow reverse, are all conspicuous; and in the same colour Edith Tabor, Occana, and a few more will show how well and effectively the golden flower is sustained in its primitive hue.

Still continuing our observations on the Japanese—and the collection is almost wholly devoted to that section—Parachute, a very pretty flower of old rose shaded carmine and almond, and having long drooping florets, occupies a high place in our estimation. Lady Hanham, a beautiful salmon and rosy sport from Viviand Morel, does likewise. Madame E. Testout and Mrs. G. W. Palmer both appear to be the same rosy bronze sport from Mrs. C. Harman Payne, the former having originated in France last year, and the latter here in England. Royal Standard is a very fine velvety crimson, with a gold reverse. Pride of Madford is large, and Australie, a companion flower, keep up the reputation of our Colonial enthusiasts. J. B. Yvon is a pale yellow shaded old rose, another sport from Viviand Morel; and somewhat deep in tone, but of similar form, is Julia Scaramanga, of the same parentage.

Incurved in good form were Mrs. R. C. Kingston, D. B. Crane, Wm. Tunnington, Jerle Dauphinoise, golden ochre yellow; and one in particular, Lady Isabel, a really fine variety, deep in build, and very compact, having rather broad florets, colour silvery blush, will be a welcome addition to this somewhat ancient type.

Here and there, interspersed throughout the collection, were numerous unnamed seedlings of promise, many of which are from Australian seed, but at present only on trial. Hairy noveltics are represented, but not largely, nor can we record any very striking additions to the Anemone classes. In one of the houses there are some pretty bushes of single varieties, such as Purity, Miss M. Anderson, Miss Annie Holder, Rev. W. E. Hemfrey, Virgin Queen, Rose Pink, Gus Harris, Miss Chrissy, and Miss Rose.—P.

Chrysanthemums for the Masses.

IF anything were ever provided for the masses which they thoroughly appreciated, it is the display of Chrysanthemums in several of the London parks. Go east or west, you will find in several of these rendezvous crowds of people making their way to the Chrysanthemum house. Year by year the same goes on—the interest never seems to flag, but rather to be increased with each succeeding autumn. It was said by many when the scheme was first instituted that the ardour of seeing the Mums would live but a season, whereas it has lived beyond several, and continues to grow.

The County Council of London is a much maligned and criticised body, but for these annual displays of this popular flower, as well as for the generous policy that has been adopted with regard to our parks and open spaces, it can receive nothing but commendation. See how these public resorts have improved in the past five years! How much more pleasant it is now in our parks and on our commons than formerly! Everything about them has improved, and on every side there appear indications of advance.

For years they were charming enough in the spring with their bulbs, and in the summer with their flower beds, but it was not until the Chrysanthemums came that people were attracted to them in thousands during the autumn. One occasionally hears some hypercritical person mutter about the expense. But no one should consider the comparatively small cost when it is remembered how much pleasure they give to thousands of Londoners whose homes preclude the possibility of Chrysanthemum culture. No; rather than condemn, one should thank the Council for the excellent work it is doing in placing before all who like to go the lovely displays of autumn flowers.

If they could not see them at the parks it is practically certain that they would not see them at all, for despite the number of shows that are annually held all could not go. In Battersea Park alone 7000 or 8000 people have passed through the house in one day. Then Victoria and Southwark, with their thousands of neighbours, have their annual show, and the people flock in multitudes. I feel quite sure that if the Council were to stop the shows London would rise in open revolt.

I am a dweller within hail of Battersea, and never allow a season to pass without at least one glance through the house, and often I have been several times. Going year after year one may see the same people hurrying along to fall into the line within the Frame Ground gates. Once this stage is reached the progress is slow—painfully slow—while outside of the house, but quite fast enough while inside and the flowers are before. Then there is no rushing but a steady flow towards the outlet, and one may see the faces of the visitors brighten under the humanising influence of the beautiful flowers. The eyes sparkle with pleasure as a particular variety takes more than ordinary attention. May the County Council continue the excellent work of educating the masses if it cost a little more than it does at present, for few will be grumblers while many will receive benefit.

This year's exhibition as Battersea is a very beautiful one, and just about the average of former years. Upwards of 2000 plants have been grown by the Superintendent, Mr. F. J. Coppin, but all are, of course, not brought into the house at once. Instead of this, as plants pass their best they are removed and fresh ones substituted, thus prolonging the display over several weeks. The major portion of the plants are in one broad bed, but on the other side of the path on a rather high stage, small flowering varieties have been stood, and by their freshness and grace add decidedly to the general effect.

The shape of the house is hardly such as to permit of the best effect being secured, as it only allows one straight path, but the system of arranging the plants is a good one. Of course the tallest are at the back, and the dwarfest in front, and by careful selection an undulating surface has been given. The colours, too, have been judiciously selected with a view to creating a fine general impression. Some day, perhaps, the Council will erect a new house at Battersea to be utilised for Chrysanthemums in the autumn, and later as a winter garden. It would most certainly be appreciated by everyone.

As I cannot see that it would serve any particularly useful purpose to give lists of names, I shall omit them. Everyone knows the Morels, the

Rochers, the Sunflowers, the ——. But enough; let those who have not been and can, go to Battersea, and see for themselves to what perfection Chrysanthemums may be grown—a place that is low and damp, overhung by splendid trees, and being within the valley of Father Thames, in the track of London's best and densest fogs. They will, one and all, be delighted with what is to be seen, and will acknowledge what skill and attention must have been devoted to the plants to secure such fine results.

Then there are other displays for dwellers in the various parts of the metropolis. Everyone who knows Chrysanthemums has heard of Mr. Moorman, for he has been amongst them for very many years. He has a grand show at Victoria Park, as have Mr. Melville at Finsbury, and Mr. Curle at Southwark. All these I know are good. What Mr. Pallett has at Waterlow I do not know, but perhaps some resident will send notes to the Journal, so that, if there be a good show, "honour may be given to whom honour is due."—SOUTH LONDONER.

RYECROFT CHRYSANTHEMUM SHOW.

THIS exhibition is now being held in the Ryecroft Nurseries, and differs material from most other shows. Of this one no schedule is issued, there are no classes, there is only one competitor, and, moreover, there is no charge for admission. Everyone is welcome who cares to go, and each is asked in return, not, as might be expected, to purchase plants, but to give a trifle in aid of the funds of the Royal Gardeners' Orphan Fund. Surely no one after a free Chrysanthemum feast would not respond to such an appeal! Hundreds, probably thousands, of people go, so that the takings in the boxes ought to amount to something substantial.

Besides this suggestion there is one regulation, and that is that visitors must not touch the flowers. They may go as often as they like, and stay any length of time provided they do not want to twist the blooms about for closer inspection. A modest rule this to govern an exhibition which comprises something over 7000 plants of all sizes and varieties. Is there anyone who does not know the owner, manager, and sole exhibitor at this annual display? Not one; for there cannot be a chrysanthemumist in the United Kingdom with whom Mr. H. J. Jones is not familiar in name, if not in person.

No one must expect, when they make the journey to Ryecroft, to find the Japanese section in one place, the incurved in another, the Anemones in a third, and so on through all the stages of the Eastern flower. Nothing of this nature is attempted, the whole being grouped with a view to insuring the best effect, which would not be if the sections were kept to themselves. In one particular the very greatest care is exercised, and that is in the placing of the several colours. The most strenuous endeavour is made to so dispose the plants, that while each flower stands out strongly and effectively, it, at the same time, assists in emphasising the best points of its neighbours.

As a whole the collection is a splendid one, and comprises representatives of almost all the known varieties. The flowers generally are just below average size, and the colours are not of the cleanest. These two facts are easily accounted for by the wretched atmosphere in which they are grown. It does not militate in the least against the production of stock, or affect the health of this in the least; but its effects are seen on every hand amidst the flowers. Each year the task of producing blooms of the highest quality becomes more and more difficult, and the results achieved are in all respects praiseworthy, all things considered.

The provincial grower has much in his favour in the purer atmosphere, whose beneficent influence on the flowers can never be overstated. But Mr. Jones is enterprising, and we shall probably be hearing that he has "flitted" from the region of bricks and mortar to the land of green fields and waving pastures. Let us hope if this supposition become a reality he will still maintain the glories of Ryecroft unaltered, and only utilise the country place for insuring the most perfect blooms for exhibitions away from home. Others besides the people of Lewisham could not easily forego the pleasure of their annual visit to Ryecroft show.

How is it possible for anyone to make a selection from such a vast array of beauty? Here are Ryecroft seedlings, there other English products, while yonder may be seen the results of the foreigner's labour. Some are excellent, others good, while there are a few from the Continent that are most hopelessly bad. They have no quality in their flowers, either of colour, form, or substance. Their destination is the rubbish heap, and they are not fit even to adorn this. But the good ones are good and the excellent ones are excellent, whether they be English or French, and these compensate for the deficiencies of their neighbours.

Of course it is the bounden duty of every writer to name a few as being of superlative merit, and so a start must be made at once, and as it is new we will commence with Mrs. A. Cross. This is a charming bronze yellow incurved Jap of splendid form and substance. A very full flower of a soft primrose hue is Mrs. L. Humphrey, while the immense yellow-floretted Ella Curtis are now comparatively well known. Mrs. S. W. Palmer, the sport from Mrs. C. Harman Payne, seems free from that coarseness for which the latter is so renowned. A lovely flower is Mrs. Coleworth Bond. The colour is soft flesh pink, and the bloom is of good size. Crown of Gold, a yellow incurved Japanese of great promise. Hairy Wonder and one or two other hirsute varieties are in grand form. Then there are Madame Cordery, Master H. Tucker, King of Buffs, Lady Hanham, Simplicity, Mrs. Richard Jones, President Nonin, Western King, Robert Powell, Vicar of Bray, N.C.S. Jubilee, Mr. Hugh Crawford (lovely delicate yellow bronze incurved Jap), Mons. Panckoucke, white and yellow Carnots, with Pride of Ryecroft, a primrose sport from Niveus that will in all probability make itself known for market purpose. It is wonderfully free flowering, and the shade is one that is always popular.

This is not all, for there are incurved and several others, but as the Japanese are the most sought for we will confine our selection to them. If anyone wish more names let him make the journey for himself, for a personal examination and selection must obviously be better than one made by proxy.—JAP.

GRANTULLY, WEST HARTLEPOOL.

THE following notes from Mr. T. Smith, Secretary to the Hartlepool Gardeners' Mutual Improvement Society, are interesting, and will prove of service to growers in similar late districts. The disastrous gale in June appears to have made its effects felt over a wide area in the North of England. Mr. Smith states: "Personally I suffered a great deal from the disastrous gale on the 14th of June. I had the majority of my plants in their permanent places, and a great many had not a leaf left on them, besides losing their tops. Then the long spell of dry weather set in, and in spite of copious syringing twice a day, they made growth very slowly. About the middle of August we had three weeks of wet weather, which rushed a lot of them into growth, with the result that many are late (notably the Queens), with soft, sappy tops, and I am very much afraid the flowers will be poor—in fact, all my Queens are terminal buds, which is not much use in this district.

"To come to the new varieties, the most promising are Mrs. J. Lewis, (second natural crown), Pride of Madford, Australie (very tall), Mrs. J. Shrimpton (stopped March 15th), John Seward, Phœbus, a lovely variety. On the other hand, Baron Ad. de Rothschild is a complete failure: Modesto, too late. With Australian Gold I am completely puzzled. I had nine beautiful clean second crown buds on three plants, and I have not a bloom larger than a cricket ball. Mrs. H. Weeks, stopped March 10th, I did not take the bud until the 25th of September, but they have done very well since I took them indoors, and are now showing colour.

"Of the new incurved, Duchess of Fife, stopped 15th March for second crown, I have not got it taken yet (29th October). Mrs. F. Hepper is too late, but Bonnie Dundee is all right. Perle Dauphinoise and Ma Perfection I can form no opinion of as yet. J. Agate and C. H. Curtis are promising, so are the Princess of Wales group; also the Tecks. For the late district we have here I enclose a few dates for stopping for second crown buds. Tecks, 1st March; also C. H. Curtis and J. Agate. Queens, 15th March. Princesses are best rooted in November, and grow for first crown.

"In the Japanese section a very good guide is to stop a month before the date given by the southern growers. For instance, Madame Carnot, middle of April is the time generally given. I stop it the middle of March. It is a variety that does not do well here. I have six plants, but the most promising are on the second natural crown."

CHRYSANTHEMUMS IN THE NORTH.

I AM again indebted to Mr. R. M. M'Intosh for an interesting report on the Chrysanthemums around this important centre, which states that the season has been a trying one in that neighbourhood. The extreme and prolonged drought in the early stage necessitated close attention to syringing and watering, and great mischief resulted from the effects of the never-to-be-forgotten hurricane in June. The second growth was, however, formed under more favourable conditions; but since the buds were taken a second spell of drought probably accounts for a large percentage of hard buds. There are several establishments in the vicinity where good collections are grown for home display and not for competition, and will prove well worthy of inspection, notably the following:—Escrick Park, Heslington Hall, Lincroft, Deighton Grove, and The Retreat. The following growers represent the exhibitors:—

ELM BANK.

Mr. Dickinson, gardener to W. B. Richardson, Esq., has a very fine collection of about 600 plants, and doubtless will have some excellent blooms by the middle of November. Mutual Friend is really splendid. Mdlle. T. Rey, F. Wells, Hairy Wonder, President Borel, Prefet Robert, Mr. W. H. Lees, Mrs. C. H. Payne, Sunflower, Major Bonnaffon, Madame E. Capitant, Mons. Demay-Taillandier, Viviand Morel, C. Davis, Madame M. Hoste, International, C. Shrimpton, Avalanche, Colonel W. B. Smith, and H. L. Sunderbruch are fine; C. H. Curtis and Mons. Bahuant very good, as are most of the incurved. Australian Gold seems to be fastidious in bud-taking, for those taken at the beginning of August are too hard to open well; others taken three weeks later seem too late. Mr. Dickinson thinks it is too pale in colour to become popular.

HOLGATE LODGE.

Mr. Everard, gardener to Mrs. Gutch, suffered severely from the storm, but has done all that can be done to encourage the plants to recover from its effects. Amongst the new varieties Western King looks very promising, as do Eltham Beauty, a pretty rose colour; Phœbus, Madame E. Capitant, Mons. Chenon de Leché, Boule d'Or (Calvat), Mons. Panckoucke, Mrs. W. H. Lees, Mdlle. T. Rey, Madame Carnot, Miss M. Blenkiron, and Viviand Morel. Amongst the incurved R. C. Kingston is very fine. All the Queen family seem right to time, while the Princess of Wales section are rather late. Mr. Everard is always well to the front with specimen plants. This year his collection is specially interesting, containing very fine specimens of C. H. Curtis and J. Agate carrying fifty blooms each.

OUSECLIFFE.

Mr. R. Dobson, gardener to R. Lawson, Esq., has most of the approved kinds. Those conspicuous are Louise, Mons. Demay-Taillandier, Colonel T. C. Bourne, Mons. Chas. Molin, Mutual Friend, Mrs. Chas. Blick, Pride

of Madford, Philadelphia, Australian Gold, Australie, G. C. Schwabe, and perhaps the most striking of all, Edwin Molyneux. When well grown, as it is here, there is no flower more telling.

North Riding Asylum.

Mr. R. M'Intosh has a good collection of standard varieties. The best are Madame Carnot, Mons. Panckoucke, Boule d'Or, Phœbus, Frank Wells, Souvenir de Petite Amie, Mons. C. H. Payne, Louise, International, Viviand Morel, Prefet Robert, President Borel, Van den Heede, Col. W. B. Smith, D. Shea, Rose Wynne, Wilfred Marshall, and Kentish Yellow. Some varieties that were very fine last year are showing hard buds. There are also a considerable number that were cut back on the 1st of June, a portion of which are allowed to grow at will, the rest disbudded in the usual way. The following varieties thus treated make nice dwarf plants with good blooms :—W. H. Lincoln, Phœbus, Souvenir de Petite Amie, J. Shrimpton, Louise, Niveus, Viviand Morel, C. Davis, Etoile de Lyon, Madame E. Capitant, and Col. W. B. Smith. Amongst incurved varieties, Baron Hirsch and Mons. R. Bahuant are very fine, but too early. J. Agate, Mr. Gardener, and Ch. H. Curtis are very promising.

Nostell Priory.

Mr. Easter is this year growing 200 bush plants, which promise remarkably well for decorative and cut flower purposes. About 250 plants are also grown for large blooms, but these received a severe check from the severe gale which played such havoc at York and elsewhere on the 16th June last, losing the greater part of their foliage. The second growth is moderately strong, short jointed, and well ripened. The incurved have come well to time and are freely developing their blooms. As Mr. Easter does not exhibit he has not grown any novelties in this section, but the standard varieties, both here and in the Japanese section, will make a fine display. Emily Silsbury, Lady Byron, and Mutual Friend are especially noteworthy.

Green Royd, Brighouse.

Mr. Barber, the gardener here, holds a capital record as an exhibitor. He grows about 200 plants, all Japanese, but is careful about adding new varieties to his collection until they have established a reliable record. He reports that the outlook this season was never more promising, and praises very highly Emily Silsbury, W. H. Lees, Phœbus, Mrs. H. Weeks, Amiral Avellan, Australian Gold, Edith Tabor, Lady Byron, and Pride of Exmouth.

Thornbury, Bradford.

Here we found a well-grown lot of plants, about 200 strong, including an interesting selection of newer varieties. Noticeable for high quality were Australian Gold, Modesto, Edith Tabor, Boule d'Or (Calvat's), Mons. Gruyer, Mutual Friend, Oceana, Phœbus, John Seward, and John Shrimpton. In the incurved the Queen family on second crowns, C. H. Curtis, Bonnie Dundee, Globe d'Or, were developing finely. Mr. Wardman, who has charge here, has just passed his plants through six consecutive days' and nights' fog, and as he is situated within the Bradford smoke radius some anxiety on his part as a young cultivator was experienced on account of damping, but careful ventilation and watering, with a little fire heat, have kept the blooms steadily progressing, and thus averting all danger.—A Yorkshire Grower.

SHOWS.

DEVIZES.—November 2nd.

The annual autumn exhibition was held as usual in the Corn Exchange, a capital site for such a meeting. Mr. J. King, Devizes Castle Gardens, in conjunction with Mr. J. A. Randell, who acts as Hon, Secretary, manage entirely this Society, which has for its main object the assistance of the various charities—a commendable object, and one which not only merits but receives support.

With the exception of two or three classes devoted to Chrysanthemum groups and baskets of hardy autumn foliage, the whole of the show was composed of the cut bloom classes, and a capital exhibition it was in this section. The principal class was that for twenty-four incurved, distinct, for which the sum of £10 was offered as the leading prize. Mr. C. J. Salter, gardener to T. B. Haywood, Esq., Woodhatch, Reigate, just succeeded in winning the premier position with a stand of medium sized beautifully finished examples. The varieties were :—Back row : Mr. J. Kearn, M. P. Martignac, Globe d'Or, Mrs. R. C. Kingston, Major Bonnaffon, J. Agate, Lord Wolseley, C. H. Curtis. Middle row : Violet Tomlin, richly coloured ; Jeanne d'Arc, Princess of Wales, very fine ; D. B. Crane, Mrs. Heale, Madame Darier, Empress of India, and John Doughty. Front row : Queen of England, Miss M. A. Haggas, Barbara, R. Petfield, Mrs. S. Coleman, Mr. J. Gardiner, Novelty, and Golden Empress. Mr. W. G. Adams, 89, Clarendon Road, Southsea, was an exceedingly close second with blooms lacking just a trifle in freshness, but in other respects an exhibit worthy the reputation of the cultivator. Mr. W. Robinson, gardener to the Right Hon. Lord Ludlow, Haywood, third, with smaller examples.

Mr. Salter was again the premier prizetaker in the class for a dozen incurved specimens with similar varieties and blooms to those in his previous prizewinning stand. Mr. Robinson a good second.

Japanese blooms were grandly represented. For twenty-four Mr. Salter once more secured the leading award with commendable specimens of the following varieties, all of which were grandly staged :—Back row : Mrs. J. Lewis, grand ; Australie, Mrs. C. Orchard, Mrs. H. Payne, Lady Byron, E. Molyneux, rich ; Edith Tabor, and Pride of Exmouth. Middle row : Charles Davis, Mrs. C. Blick, Pride of Madford, Miss Elsie Teichmann, very fine ; Viviand Morel, Australian Gold, beautifully coloured ; Mutual Friend, and Lady Hanham. Front row : M. C. Molin, Madame Ad. Chatin, Chenon de Leché, J. Wilkins, M. Gustave Henry, Lady Ridgway, deep and massive ; Phœbus, and A. H. Wood. Mr. F. S. Vallis, Bromham Fruit Farm, second with richly coloured specimens, indifferently staged. Mr. W. Robinson third.

For twelve Japanese incurved, Mr. Salter followed up his previous success, staging typical examples in the best possible manner. Messrs. Robinson and Vallis followed in the order here given. For twelve Japanese, confined to cultivators in Wilts, Mr. Robinson won the premier award with grand examples, Mrs. J. Lewis being extra fine. Mr. H. Clack, gardener to Lieut.-Col. C. E. Colston, M.P., Roundway Park, second with fresh, if smaller, examples of popular varieties. Anemone varieties were magnificently staged by Messrs. Salter, Robinson, and Clack, the prizes being secured in the order here given.

Miss Mary A. Buchanan, Poulshot Rectory, secured the premier award for one basket of hardy autumn foliage and berries—a pleasing arrangement. Miss Marjorie Carless, Long Street, Devizes, second.

COVENTRY.—November 2nd and 3rd.

The third annual exhibition of the Coventry Chrysanthemum Society took place on Tuesday and Wednesday, November 2nd and 3rd. There were 115 entries, and the number and quality of the exhibits were far in advance of the previous years. The show was opened by John Gulson, Esq., who was supported by C. J. Murray, Esq., M.P., and Lady Murray. Mr. Gulson, in spite of his eighty-four years, gave a charming address on the cultivation and nature of flowers in general, and Chrysanthemums in particular, tracing their origin from the earliest times until to-day. Mr. Murray, M.P., having moved a vote of thanks to Mr. Gulson for his instructive and able speech, the show was declared open.

The chief prizes for Chrysanthemums were taken by Sir Richard Moon, G. Singer, Esq., J. K. Starley, Esq., T. Browett, Esq., S. Loder, Esq., A. Smith Rylands, Esq., W. Herbert, Esq., and W. F. Wyley, Esq. Many of these exhibitors took prizes for groups and foliage plants, and the general arrangement of the Hall was very striking. In the open class for a group of Chrysanthemums arranged in a space of 50 square feet the first prize went to Sir Richard Moon; the second to G. Singer, Esq., and the third to T. Browett, Esq. For a group of foliage plants the first and second prizewinners maintained their positions, the third going to Messrs. Kimberley & Son. For twenty-four Japanese A. James, Esq., was first; W. Herbert, Esq., second ; and C. A. Smith Rylands, Esq., third. In the class for a similar number of incurved the premier position was secured by E. Loder, Esq.; followed by C. A. Smith Rylands, Esq., and G. Singer, Esq., in the order named. Lord Leigh showed a very fine collection of fruit and vegetables (not for competition)—viz., Grapes, Apples, Pears, Onions, Cauliflowers, Carrots, and Tomatoes – all of which were artistically arranged by Mr. Martin, the head gardener. Sir Richard Moon also staged a fine collection of fruit, and the Secretary of the show (Mr. F. Curtis) exhibited a fine stand of horticultural sundries. The whole exhibition was in every way a great success, and reflected much credit on the Secretary and Committee, who had worked hard for that end.

SEVENOAKS.—November 2nd and 3rd.

The thirteenth annual exhibition was held in the Club Hall at Sevenoaks, a place not half large enough for the splendid exhibits to be seen to advantage. This is the only fault to be found with this popular show. It is well managed and beautifully arranged, and, what is more, everything was of excellent quality. It was favoured also with glorious weather, and the success was a record. Mr. S. Cook, the enthusiastic Secretary, and his Committee are to be congratulated upon the satisfactory management. It is gratifying to learn a good balance is the result of their labours.

The principal feature of the show was the competition for the challenge cup, value 20 guineas, which was first offered in 1895, and that year won by Mr. A. Hatton, gardener to Mrs. Swanzy, The Quarry, Sevenoaks. Last year it was wrested from him by Mr. W. Tebay, gardener to Mr. Rycroft, Everlands, Sevenoaks. This year Mr. Hatton again won with a most superb group splendidly arranged and well finished—a popular win. Second, last year's winner with also a splendid group, a little lacking in freshness in the blooms. Third, the worthy Secretary, gardener to De Barri Crawshay, Esq., who also showed a grand group. Fourth, Mr. A. Gibson, gardener to J. F. Burnaby Atkins, Esq.

Specimen plants were well done also, as were cut flowers. The leading prize for specimens, first Mr. Hatton ; cut blooms with foliage plants arranged for effect, Mr. S. Cook first ; single specimens, first Mr. Hatton. For twelve Japanese, in eight varieties, first Mr. Tebay ; twelve incurved, distinct, first Mr. A. Gibson ; twelve incurved, eight varieties, first Mr. Cook ; twelve Anemones, first Mr. J. Brooke. The competition in cut flowers was very keen. The various classes for table plants, Primulas, Pelargoniums, cut flowers brought forth some spirited competition.

Fruit and vegetables were well shown, more particularly the latter. Mr. F. Seale exhibited a splendid collection of Dahlia flowers ; quite a feature for so late in the season. He likewise decorated the platform with plants and autumn foliage, which was most effective. The decision of the Judges gave the greatest satisfaction, which is always pleasing to relate.

CARDIFF.—NOVEMBER 3RD AND 4TH.

THE eleventh exhibition of the Cardiff Chrysanthemum Society being held on an earlier date this year, resulted in a little falling off in the number of entries, and, unfortunately for the Society, several well-known growers and exhibitors in the district were unable to compete. However, the larger Park Hall was well filled, and the excellent blooms staged were deserving of the highest praise. Messrs. W. Clibran & Sons sent several handsome Chrysanthemums.

The principal class was that for twenty-four blooms, distinct, and for which the Society, in addition to the money prize, offered a challenge cup, value 5 guineas, the same exhibitor to win the cup twice. Sir Charles Phillips, Bart. (gardener, Mr. Dumble), having been victorious in 1896, again proved himself invincible, thus becoming the owner of the cup. His blooms of Japanese and incurved were alike very fine. Japanese: Mrs. W. H. Lees, Beauty of Teignmouth, Australian Gold, Graphic, Charles Davis, Madame Carnot, Viviand Morel, Phœbus, Edith Tabor, Australie, Pride of Exmouth, and Dorothy Seward. Incurved: Charles Curtis, Mr. J. Murray, Globe d Or, Mons. R. Bahuant, George Haigh, J. Agate, Robert Petfield, Major Bonnaffon, Golden Queen, John Doughty, Lord Alcester, and Queen of England. R. W. D. Harley, Esq. (gardener, Mr. Robinson), was a creditable second.

In the class for twenty-four Japanese, not less than twelve varieties, open only to those within twelve miles of Cardiff, a silver cup, value 4 guineas, was given by Messrs. Case Bros. There were three lots staged. R. A. Bowring, Esq. (gardener, Mr. Joy), was a splendid first. There were four competitors staged in the class for twenty-four Japanese, distinct, all showing remarkably fine flowers, which for freshness and colour would have been hard to beat. Mrs. Llewellyn, Baglan Hall (gardener, Mr. Gilbert), was awarded premier honours. His stand was composed of Simplicity, M. Gerard, Phœbus, Australie (superb), A. H. Wood, Mrs. J. M. Lewis (very fine), Eva Knowles, Pride of Exmouth, International, Mons. Chenon de Leché (grand), Madame Carnot, Mrs. G. W. Palmer, Hairy Wonder, Elthorne Beauty, Mdlle. Thérèse Rey, Mons. Chas. Molin, Mrs. W. H. Lees, Oceana, Mons. Hoste, James Bidencope, John Seward, and Primrose League. Mr. Joy was a good second. The best bloom in the show (Phœbus) was in this stand, and received the certificate of the National Chrysanthemum Society. Mr. J. Robinson was third.

Mr. Dumble, gardener to Sir Chas. Phillips, Bart., was a splendid first for twenty-four incurved blooms, with Chas. Curtis, George Haigh, Mr. J. Kearn, Mr. J. Murray, Globe d'Or, Lord Wolseley, J. Agate, M. R. Bahuant (back row); John Doughty, Golden Empress, Prince Alfred, Empress of India, Robert Petfield, Major Bonnaffon (middle row); Mr. F. Hepper, Brookleigh Gem, Lord Alcester, Violet Tomlin, Jeanne d'Arc, Lucy Kendall, Princess of Wales, and Golden Queen. Mr. Robinson was second. Mr. Gilbert was to the front in the class for twelve Japanese distinct, Mr. G. W. Drake, Cardiff, being a good second. In a similar class for twelve incurved, Mr. Dumble took first place, and Mr. J. Robinson second. For twelve blooms of Japanese, in not less than six distinct varieties, Mrs. Llewellyn (gardener, Mr. Gilbert) was again first.

Groups of foliage plants and Chrysanthemums were set up by two exhibitors only. Mr. W. Treseder was well to the front with a group that contained many fine blooms. J. E. Gunn, Esq. (gardener, Mr. McLew), was second with a pleasing arrangement. In the class for a group of Chrysanthemums arranged for effect, Mr. E. Jenkins, Richmond Road, arranged a very good group. J. P. Hacquoil, Esq., was a fair second. Mr. McLew and Dr. J. Lynn-Thomas were successful for the best group of miscellaneous plants. Table plants, Cyclamens, Primulas, and Roman Hyacinths, as well as bouquets, wreaths, and crosses, were admirably shown, as were fruit and vegetables.

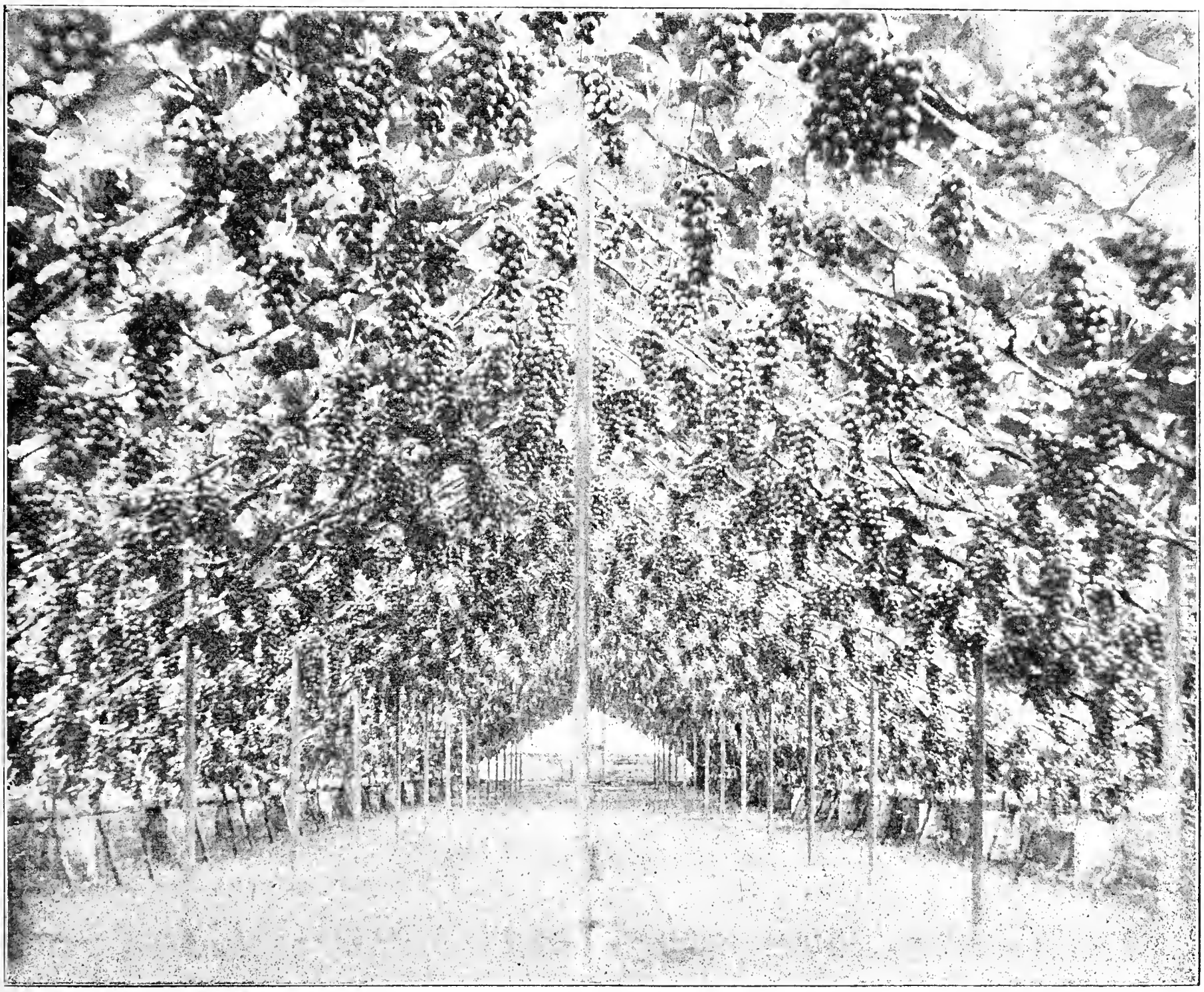

FIG. 69.—A GROS COLMAN HOUSE—ASHFORD VINERIES, COBHAM. (*See page* 452.)

Photo by Mr. Walter Johnson.

BRIXTON.—November 3rd and 4th.

Another successful show was held on the above dates at the Town Hall, Streatham. Chrysanthemums were the chief feature, but in addition there were splendid exhibits of fine-foliage plants, Orchids, Palms, and Ferns; also vegetables, remarkable for quality, and excellent fruit.

In the class for a group of Chrysanthemums arranged for effect the competition was very good, that staged by Mr. Howe, gardener to Henry Tate, Esq., Park Hill, Streatham, being considered to be the best ever put up in the district. Mr. Mursell, gardener to Mrs. Burton, Leigham Court Road, was second, followed closely by Mr. Poulton, gardener to C. T. Caley, Esq. The first prize for six untrained plants was awarded to Mr. Mursell. For six trained specimen plants Mr. J. Weston, gardener to D. Martineau, Esq., Clapham Park, was first, but was beaten in the class for four trained Pompons by Mr. Gedner. For three trained plants (Pompons excluded) Mr. F. Gilks, gardener to A. Morris, Esq., was first, having good, well bloomed plants of Colonel W. B. Smith and Viviand Morel.

For twenty-four Japanese cut blooms Mr. Mursell secured first prize with a splendid collection of good and even blooms, which included the leading varieties. Mr. Poulton, and Mr. Millsom, gardener to G. A. Payne, Esq., were second and third respectively. For an equal number of incurved blooms the competition was not nearly so keen, and Mr. Howe easily took the lead. Mr. Mursell was first for six blooms of Lady Byron, also for a similar number of Modesto.

For twelve Japanese cut blooms, distinct, Mr. W. Gray, gardener to L. Hansard, Esq., was first, and Mr. Farrow, gardener to G. R. Peerless, Esq., secured first for six varieties. For twelve blooms of incurved, Japanese varieties, Mr. Mursell was again first. There was a strong competition for the prizes offered by Miss Sherwood for a basket of Chrysanthemums arranged with foliage, Ferns, and Grasses, Mrs. Strugnell, Brixton Hill, gaining first with a pretty arrangement of yellow blooms of various shades, closely followed by others of merit.

Messrs. J. Peed & Sons had, "not for competition," a large group of Chrysanthemums, also Begonia Gloire de Lorraine, besides choice bouquets, crosses, and sprays, and some good blooms of their new Chrysanthemum Lady Freake. Mr. T. E. Knights had also some good arrangements in cut flowers.

DUBLIN.—November 3rd and 4th.

The advance shown on this side of the Channel in Chrysanthemum culture is, so far as big blooms are concerned, more noticeable in the direction of refinement than in that of mere size; for instance, the run made upon Etoile de Lyon has diminished and our growers have practically relegated anything so coarse to obscurity. In a look round the large hall of the Royal Dublin Society's premises upon the second day we were agreeably surprised with the freshness of both cut blooms and plants. This being the winter show of the Royal Horticultural Society of Ireland the popular flower, if predominating, does not monopolise attention, and although fruit, outside of trade exhibits, was not a strong feature, one may safely say that so far as vegetables are concerned at this season exhibits both in quality and quantity made a record.

Any drawback previously experienced by city folk in reaching the rendezvous, situated on the southern outskirts, is now bridged by the electric tram service, and although the huge building may not be perfect for an exhibition in which the largest amount of staging is done upon flat tables, the advantage of room is not to be overlooked, there being, as a worthy old gardener remarked, "lashins of room and to spare." On entering the hall one could not but feel how much of the good effect noticeable was due to the large plant groups set up at the far end by some of the leading local trade growers, and these being in competition in a special class may commence our critical surveys.

Group 1, to the right, and to which the premier honour of the Society's silver medal was awarded, was set up by Messrs. Chas. Ramsay & Sons, of the Ball's Bridge Nurseries. Nothing could be finer than the highly finished background of Palms used in the staging of this exhibit. Among the lesser things sloping down to a bold fringe of Maidenhair Ferns were plants of Latania aurea, and having said that it is a novelty, there is but little more to be said of it; not so, however, with Begonia Gloire de Lorraine, which was liberally used, and appears to be a winter flowering plant of sterling merit. Various Orchids completed the brightening up of this, the premier exhibit in its class. Turning to group No. 2, set up by Mr. R. Jameson, of the Sandymount Nurseries, there was no question but what his bronze medal was well earned; the margin between this and the first prize group was so narrow that one felt the happier in not having to bear the onus of the judgment. The third group at this end of the hall was contributed by the Messrs. Browett of Kingstown; this chiefly consisted of the greenery of Palms, brightened up by crimson-tinted Dracænas. Totally different, yet equally good in its way, was a well-filled corner of hardy shrubs and Coniferæ grown in pots, staged by Mr. Watson, of the Clontarf Nurseries, being, if more modest, both suitable and seasonable.

Coming to what is now the chief end and aim of a winter show—the Chrysanthemum—plants were not so largely represented as usual. In Class 1, for a group not to exceed thirty pots, but in which Palms or other foliage plants are admissible, Lord Ardilaun's prize was easily taken by Mr. Goff, gardener to Mrs. M'Cann of Simmonscourt Castle, the veteran Mr. M'Kenzie of Willow Park Gardens having to be content with second place, Mrs. M'Comas (gardener, Mr. Coghlan) being third. For a group of well grown plants arranged on a space of 50 superficial feet Mrs. M'Cann was again to the front, showing up well; also in the smaller plant classes, to which no disparagement is intended in passing at once to the possibly greater attraction of cut blooms. The Waterhouse cup for thirty-six in twenty-four varieties, half incurved and half Japs, was carried off by Mr. J. L M'Kellar, gardener to Lord Ashbrook, whose strength laid in his incurved blooms, amongst which a superb bloom of C. H. Curtis was judged to be the best incurved in the show, The Queen and Australian Gold being very conspicuous among the Japs; Mr. Crawford, for Gertrude, Countess of Pembroke, showing some fine Japs in this class, and obtaining second; R. de la Poer, Esq. (gardener, Mr. Fernie), third.

A 10-guinea challenge cup, known as "The Gardener's Prize," for twenty-four Japs was awarded to Mr. Mitchison, gardener to the Hon. Colonel Crichton, whose massive blooms from Kildare were a treat, Lord Ashbrook and Lady Pembroke succeeding in respective order. A big order was forty-eight Japs, distinct, and here Mr. Crawford concentrated his strength, and won the 10-guinea prize, Colonel Crichton and Lady E. Howard-Bury following.

Smaller classes for blooms in the various sections were fairly well filled with good fresh blooms, six of C. H. Curtis, as shown by Lord Ashbrook, in the class for six incurved, being most captivating, and one was pleased to see that grand old Jap Edwin Molyneux shown by Mr. Crawford with six matchless blooms. Class 19 was for a vase of blooms, each different, cut to show not less than 12 inches of stem above the vase. One can say but little about them, for on the second day their glory had departed. Thus treated, and in regard to their staying powers being of such brief duration, the utility of this class is questionable. Looking back over the Japanese, Mr. Mitchison's noble bloom of Mrs. W. H. Lees was the premier bloom of that section.

Messrs. Dicksons, Ltd., Chester, were represented by a hundred dishes of Apples and Pears, in as many varieties, the most noticeable among the former being fine samples of Emperor Alexander and Hormead's Pearmain. Messrs. Alex. Dicksons of Newtownards set up a similar table of 160 dishes, having in the centre their last Irish Rose trophy (Dublin, 1897) as a gentle reminder of their inimitable stands so often seen here. Horticultural sundries were well to the front, and helped considerably to fill space. A class for table decorations was well entered, but calls for but little comment, autumn tints being the predominating element.

LEWES.—November 3rd and 4th.

This was a surprisingly successful little exhibition when we remember that it clashed with the neighbouring town of Brighton. Some of the best exhibits were six untrained plants from Mr. Smith, gardener to C. R. Kemp, Esq., Bradford Lodge, Lewes: also six large-flowered plants from Mr. J. Carley, gardener to R. H. Powell, Esq., Lewes. A group of 60 square feet found Mr. Stroud, gardener to F. Verral, Esq., Southover, well in front, and the Society's certificate of merit was awarded to this as being the best group in the exhibition. Mr. Head, gardener to A. Russell, Esq., Priory Villa, Lewes, won for a group of stove and greenhouse plants.

Cut blooms were both numerous and good. Mr. J. Coles, gardener to F. H. Walker, Esq., Highly Manor, Balcombe, won for twenty-four Japanese, staging some really grand flowers; Mr. M. Tourle, gardener to F. Barchard, Esq., Little Horsted, taking first place for twenty-four incurved, and also for twelve ditto. Mr. Tourle won for a specimen incurved with C. H. Curtis, one of the finest flowers we have seen; and for a Japanese with Eva Knowles. The best box of twelve Japanese came from Mr. J. Harwood, gardener at The Court, Seaford.

Mr. C. Watkins, gardener to W. L. Christie, Esq., Glynebourne, Lewes, won for three bunches of Grapes; Mr. F. Thomas, Polegate, first for three dishes of dessert Apples and for a similar number of culinary ditto. The best tray of vegetables (open) came from Mr. C. Watkins. This division was strongly contested, and contained many good trays in special classes.

WOKING.—November 3rd and 4th.

A very bright and excellent show was this, held in the Public Hall on these dates. The exhibits seemed to be limited to Chrysanthemums exclusively, so far as the competing classes were concerned, except in the groups a few foliage plants were effectively introduced.

There were two classes for groups, the largest making a bold show. The first place in this competition was taken by Mr. Tomlin, gardener to Mrs. Goldingham, Chertsey. His plants and flowers were good, and neither too thickly nor formally displayed. The second prize was taken by Mr. Seabrook, gardener to R. M. Stevens, Esq., Woking; rather a large one, and very flatly or stiffly arranged, the plants being too crowded. In the other class, the best and a by no means overloaded group came from Mr. Hoar, gardener to L. Bircham, Esq., Woking. There were several others, and the various groups helped the show materially.

The chief class for cut flowers was that for the challenge vase, a very fine bowl, won on this occasion by Mr. Jinks, gardener to Edgar Bruce, Esq., Walton. This comprised twenty-four Japanese and twenty-four incurved. His best blooms of the former were Madame Carnot, Viviand Morel, Edith Tabor, Yellow Madame Carnot, Mons. Chenon de Leché, Beauty of Teignmouth, Phœbus, Hairy Wonder, E. Molyneux, Modesto, Mdme. A. Chatin, and others; and of incurved there were C. H. Curtis, Prince Alfred, Major Bonnaffon, Rena Dula, J. Agate, Queen of England, Lord Wolseley, Violet Tomlin, and various others of very good form. Mr. Gaymor, gardener to Mrs. Anderson, Waverley Abbey, Farnham, was second, and Mr. Tomlin third.

Without doubt the finest Japanese flowers were found in the class for twenty-four blooms, Mr. H. Paddon, gardener to Col. Ricardo, Bramley Park,

having a capital lot quite of the best class. Here were Phœbus, Pride of Madford, Pride of Exmouth, Modesto, Australie, M. Chenon de Leché, Lady Hanham, Mrs. Weeks, Graphic, Mrs. J. Lewis, Mdlle. Gustave Henry, Madame Charles Molin, Lady Ridgway, and Madame M. Ricoud. Mr. Shoesmith of Woking came second, having also excellent flowers, including such well-known varieties as Australie, Phœbus, Mr. A. C. Hubbard, Pride of Madford, Thomas Wilkins, Mrs. J. Lewis, and M. Chenon de Leché. Mr. Osman, gardener to Lawrence Baker, Esq., Chertsey, was third.

There was no corresponding class for twenty-four incurved, but in one for twelve blooms Mr. Paddon was again first, having good Globe d'Or, Mrs. R. C. Kingston, C. H. Curtis, Golden Empress, Lord Wolseley, Lord Alcester, Princess of Wales, D. B. Crane, Queen of England, Jeanne d'Arc, Lucy Kendall, and Violet Tomlin. Mr. Jinks was second, having Perle Dauphinoise, very like an incurved Japanese, in his dozen. Mr. Basill, gardener to D. H. Evans, Esq., Pangbourne, was third. Mr. Slann, gardener to H. W. Lillem, Esq., Horsell, had the best twelve Japanese, including very nice flowers of A. Avellan, Miss Elsie Teichman, Pride of Madford, Oceana, Phœbus, Australie, Dorothy Seward, and Edith Tabor. Mr. H. A. Needs, a well-known amateur, was second, having, with others, good C. A. Davis, Sunflower, Madame Carnot, Miss A. Teichmann, and Phœbus.

In the class for six Japanese Mr. C. Heal, Compton, was first; Mr. Hainge, gardener to W. May, Esq., second; and Mr. Tomlin was third. Mr. Osman had the best six incurved, and Mr. Tomlin, with Globe d'Or, the best six of one variety. There were some other small classes. The show bids fair to become a large one in time, but the Public Hall cannot expand correspondingly.

WOLVERHAMPTON.—November 3rd and 4th.

The fifth annual exhibition was held in the Drill Hall on the above dates, and proved superior to the predeccssors in all respects. This is largely due to the efforts of the persevering Hon. Secretary (Mr. J. H. Wheeler) and his efficient Committee.

The groups of Chrysanthemums arranged for effect were a prominent feature, and reflected much credit on the exhibitors. The premier prize in the group class, occupying a space not to exceed 10 feet by 7 feet, was deservedly awarded to Mr. J. F. Simpson, gardener to C. T. Mander, Esq., The Mount, Tettenhall; the second to Mr. S. Whitehouse, gardener to W. P. Baker, Esq., Avenue House, Tettenhall; and the third to Mr. T. King, gardener to S. T. Mander, Esq., Wightwick Manor. In the groups of Chrysanthemum and foliage plants intermixed the first prize was secured by Mr. G. Bradley, gardener to Miss Perry, Wergs Hall, for a very effective display The second and third prizes were most creditably won by Mr. J. Minton, gardener to T. Sander, Esq., Oaken, and Mr. C. Raffill, gardener to Alderman G. Thompson, Dudley.

For a single plant of Japanese Chrysanthemum the first prize was accorded to Mr. C. Raffill, and the second to Mr. U. Jones. For one plant of incurved the positions were reversed. For one plant of Pompon the first prize was secured by Mr. U. Jones, the second by Mr. J. F. Simpson, and the third by Mr. C. Raffill.

The chief feature in the show was evidently the large and grand display of both the Japanese and incurved cut blooms. The first prize for twenty-four incurved, in not less than eighteen distinct varieties, was awarded to Mr. J. H. Goodacre, gardener at Elvaston Castle, with fine blooms of Mrs. R. C. Kingston, Mrs. C. H. Payne, C. H. Curtis, Queen of England, Globe d'Or, John Doughty, John Lambert, Robert Petfield, Lord Alcester, George Haigh, Empress of India, Perle Dauphinoise, Baron Hirsch, Mrs. S. Coleman, Jeanne d'Arc, D. B. Crane, Miss V. Tomlin, Miss M. A. Haggis, Rose Owen, Princess of Wales, and Madame Darier. The second prize was secured by Messrs. J. R. Pearson & Sons, Chilwell Nurseries, Notts, with also a meritorious stand, and the third prize by Mr. Silas Cole. For twelve blooms of incurved, distinct, Mr. Goodacre was again to the front, the second prize being awarded to Mr. J. Parkes, gardener to W. Roberts, Esq., Ferndale Pedmore, Stourbridge, and the third to Mr. P. Blair of Trentham Gardens.

The Japanese section was in strong force, and the coveted first position was deservedly awarded to Mr. Samuel Bremmell, gardener to H. H. France Hayhurst, Esq., Overley, Wellington. His varieties were Viviand Morel, Edith Tabor (2), Commandant Blussett, Mons. Chenon de Leché, Colonel W. B. Smith, Mutual Friend, Mrs. W. H. Lees, Pride of Madford, Amiral Avellan, Australian Gold, Queen of Buffs, John Shrimpton, Modesto, Primrose League, Miss A. H. Payne, Miss Rita Schroeter, Graphic, Lady Ridgway, Beauty of Teignmouth, W. G. Newitt, and Mons. Panckoucke. The second prize was secured by Mr. G. Burrows, gardener to W. G. Phillips, Esq., Berwick House, Shrewsbury. The third Messrs. J. R. Pearson & Sons. For twelve blooms the first prize was accorded to Mr. J. H. Goodacre; and the second and third prizes to Messrs. J. Parkes and J. R. Pearson & Sons as in the order named.

For twelve blooms of Anemone Chrysanthemums Mr. W. Shingler was placed first; and Mr. J. Justice, gardener to Sir Richard Temple, Kempsey, Worcester, the second position; whilst Mr. E. Simpson, gardener to Lord Wrottesley, Wrottesley Park, was placed third. Mr. J. H. Goodacre was awarded the premier prize for the best incurved bloom with Mrs. S. Coleman, and Messrs. J. R. Pearson had the premier Japanese in a fine bloom of Phœbus.

For the most artistically arranged vase of Chrysanthemum blooms the first prize was awarded to Mr. James Hughes, florist, Tettenhall Wood; the second to Mr. C. Raffill, and the third prize to Mr. J. E. Knight, Wolverhampton. Hand bouquets were very well shown by Mr. J. E. Knight; Mr. Richard Lowe, Wolverhampton; and Mr. S. Postings, gardener to Mrs. Wight Boycott, Rudge Hall. The response to the offer of the Mander Jubilee prize of £5, given by Mrs. C. T. Mander for the best twelve vases of Chrysanthemum blooms with long stems, three in each vase, in twelve distinct varieties, not less than 1 foot in height, was well contested by Mr. E. Simpson, Mr. J. H. Simpson, and Mr. G. Bradley with excellent examples, and artistically arranged, the prizes being awarded as in their order named.

Messrs. Jones & Sons, Shrewsbury, exhibited (not for competition) an interesting arrangement of Cactus and Pompon Dahlias, shower bouquets, and other floral devices. Mr. Richard Lowe had a stall of fruit and cut flowers for sale, the proceeds to be devoted to the Gardeners' Royal Benevolent Institution. Both fruits and vegetables were splendidly shown.

PORTSMOUTH.—November 3rd, 4th, and 5th.

The Portsmouth Society held its eleventh annual exhibition on the above dates at the Victoria Hall, Southsea, and so large were the entries that an annexe from the gallery had to be utilised for the fruit and the splendid collection of vegetables in competition. The body of the Hall was flanked with the miscellaneous and Chrysanthemum groups, and the centre tables filled with the classes for cut blooms, bouquets, table plants, and Primulas, the end of the Hall next the orchestra being occupied with the table decorations. With such doughty champions in the Chrysanthemum world as Messrs. Penford of Leigh Park, Havant, and Mr. J. Agate of the same place, quality of cut blooms may be assured. The exhibits of Mr. W. Adams in the incurved classes, and Mr. Burridge in the groups, were worthy of their reputation, while the amateurs came out very strong indeed, Mr. C. White being especially successful.

The leading prize was of the value of £10 for the first for forty-eight cut blooms, twenty-four Japanese and twenty-four incurved. In this Mr. Penford, gardener to Sir F. Fitzwigram, Leigh Park, Havant, put up a very fine stand, consisting of the following varieties—Japs: Mrs. J. Lewis, Phœbus, Pride of Exmouth, Edith Tabor, Lady Ridgway, Mrs. W. H. Lees, Mrs. Carpenter, M. Gustave Henry, Hermann Kloss, V. Morel, Australie, J. Shrimpton, Madame Carnot, Modesto, Mons. Chenon de Leché, Primrose League, Violetta, Mons. Panckoucke, Mrs. R. Jones (good), and Chas. Davies. The twenty-four incurved, in eighteen varieties, were Violet Tomlin, Duchess of Fife, R. C. Kingston, Major Bonnaffon, Dorothy Foster, Globe d'Or, Jeanne d'Arc, Golden Queen, Robert Penfold, J. Agate, Madame Darier, Mrs. Robinson King, Empress of India, Lord Rosebery, Lord Wolseley, Chas. Curtis, Alfred Salter, Austin Cannell, and Queen of England. Mr. J. Agate was second with an excellent stand.

In the open class for twenty-four Japs Mr. Penford was again first. The second prize was secured by Mr. J. Agate. Mr. R. Woodfine, gardener to Col. Boyd, Emsworth, third.

In the class confined to Portsea Island for twenty-four incurved, in eighteen varieties, Mr. W. G. Adams, Southsea, was first with a highly finished stand, comprising Major Bonnaffon, Lord Wolseley, Globe d'Or, Queen of England, Bronze Queen, C. H. Curtis, R. C. Kingston, Princess of Wales, C. B. Whitnall, Lucy Kendall, Violet Tomlin, Madame Darier, Jeanne d'Arc, Brookleigh Gem, Prince Alfred, Golden Queen, Miss Haggas, and Empress of India. The second prize was awarded to Mr. C. White, St. Vincent Road, Southsea, with a good stand, Chas. Curtis, Baron Hirsch, and Madame Darier being the best; the third going to Mr. Dimmick, gardener to Mrs. J. Young, North End.

In the open class for twenty-four incurved Mr. Penford was to the front with a splendid exhibit. The second was awarded to Mr. J. Agate, and the third to Mr. F. G. Foster. In the class for twenty-four Japs, confined to Portsea Island, Mr. W. G. Adams was first with an excellent stand of fresh fine blooms of the leading varieties. Mr. Steptoe, gardener to T. Williams, Esq., Southsea, was second; and Mr. J. Burridge third, both showing well. For twelve Japs Mr. C. White was first, Mr. J. Chatfield second; and for twelve incurved Mr. Steptoe was to the front with highly finished blooms. The other classes for Anemones and Pompons, and also the amateurs' and cottagers' classes, contained some very meritorious exhibits, which reflected great credit on the growers.

For a group of Chrysanthemums arranged in a space of 60 square feet, interspersed with foliage plants, Mr. Burridge, North End, was awarded first with a light elegant arrangement containing some fine Chrysanthemum blooms, and nicely finished with Maidenhair Ferns. Mr. W. Rooke, Esplanade Hotel, Southsea, was second, and Mr. Joyce, gardener to Captain Lancaster, third. For a group of miscellaneous plants, flowering and foliage, Mr. Burridge was again first. For a vase containing twelve blooms with foliage, Mr. Steptoe was first with the variety Thos. Wilkins, and for a bouquet of Chrysanthemums, Mr. Mills Florence Road, Southsea, first. Mr. Burridge second.

In the non-competitive exhibits was a fine collection of Japanese from Messrs. W. & G. Drover, Fareham. Mr. J. Agate staged a stand of the new varieties raised by Mr. N. Molyneux, Rookesbury. The classes for vegetables were well filled and the quality excellent.

The exhibition was opened by the Mayoress; and with an energetic and business-like executive with Mr. Mark Gill, T.C., as President, and Mr. W. H. Berry as Secretary, receiving the support and countenance of Mr. F. Power, and other members of the Corporation, this resuscitated Society, once so prosperous, ought to be firmly established and supported by the neighbourhood.

ASCOT.—November 4th and 5th.

The Ascot Society held its annual exhibition at the Grand Stand Ascot. This is a splendid place for an exhibition, there being abundance of space for the amusements which the Hon. Secretary and the Committee provided. Fruits and vegetables were well staged. Messrs. J. Laing and Sons sent a collection of Apples and Pears (not for competition).

In the open class for twenty-four Japanese, distinct, Mr. C. J. Salter, gardener to T. B. Haywood, Esq., Woodhatch, Reigate, was awarded first with grand flowers of Mrs. J. Lewis, Australie, Mrs. C. Orchard, Mrs. C. H. Payne, E. Molyneux, Edith Tabor, Pride of Exmouth, C. Davis, Mrs. C. Blick, Pride of Madford, Elsie Teichmann, Viviand Morel, Australian Gold, Mutual Friend, Lady Hanham, Phœbus, Mons. C. Molin, Madame A. Chatin, Mons. Chenon de Leché, Thos. Wilkins, Lady Isabella, Lady Ridgway, and A. H. Fewkes. The second prize went to Mr. F. Cole, gardener to Sir George Russell, Bart., M.P., Smallfield Park, who had in Mrs. J. Lewis the premier bloom. Third, N. L. Cohen, Esq. (gardener, Mr. A. Sturt), Round Oak, Englefield Green; and fourth, A. Gilliat, Esq. (gardener, Mr. A. Johnson), Duffield, Stoke Pogis, Slough.

For twenty-four incurved Mr. W. Neville, gardener to F. W. Flight, Esq., Cornstiles, Twyford, was first with small but very neat blooms. His best were C. H. Curtis (premier incurved), Jeanne d'Arc, Mrs. R. C. Kingston, George Haigh, Princess of Wales, Mons. R. Bahuant, Queen of England, Globe d'Or, Prince Alfred, Baron Hirsch, Miss Haggas, Novelty, Robert Petfield, Golden Empress, Lord Wolseley, Rose Owen, Ami Hoste, Mrs. Heale, Violetta, Golden Queen, Empress of India, and Perle Dauphinoise. Mr. Salter was second with larger flowers, but one or two were past their best. Mr. Jones, gardener to Miss Wyburn, Hadley Manor, Barnet, Herts. was third; and Mr. Short fourth. There were nine competitors.

For thirty-six cut blooms (eighteen Japanese and eighteen incurves) confined to the district, Mr. W. Lane, gardener to Miss Durning Smith, King's Ryde, Ascot, won easily with the best stands in the show. The Japanese were Viviand Morel, Phœbus, C. Davis, Madame Carnot, Beauty of Teignmouth, Graphic, Mrs. J. Lewis, E Molyneux, Mrs. C. H. Payne, Mons. Chenon de Leché, grand; Edith Tabor, Australie, Duke of York, Louise, Oceana, Commandant Blusset, and Lady Northcote. Incurved: Empress of India, Major Bonnaffon, Queen of England, John Doughty, C. H. Curtis, Mrs. R. C. Kingston, grand; R. Petfield, Ami Hoste, Violet Tomlin, Mrs. J. Kearn, Novelty, Globe d'Or, Flora Macdonald, Lucy Kendall, Miss Haggas. Jeanne d'Arc, and Madame Darier. Second, Mr. W. L. Farmer, Wendlesham.

Mr. W. Wilson, gardener to R. C. Christie, Esq., Ribesden, Windlesham, was first for twelve incurved, distinct; Mr. Fred Heereman, gardener to Lady Isabella Keane, Rose Mount, Sunninghill, second; and Mr. W. Hawthorne, The School, Ascot, third. For twelve Japanese Mr. Wilson led again, Mr. Heereman second, Mr. White, gardener to Dowager Marchioness of Cunningham, The Mount, Ascot, third.

The class for groups of Chrysanthemums and foliage mixed brought out four competitors, Mr. W. Farmer first, Mr. Heereman second, Mr. Lane third. For a group of Chrysanthemums Mr. Lane won with a magnificent group, second Mr. W. Hawthorne, third Mr. H. White.

HARROGATE.—November 4th and 5th.

The third show under the management of the Harrogate Paxton Society was held in the fine Winter Gardens, recently built, and admirably adapted to the purpose. The earliness of the fixture told against the quality of the cut blooms, but in all other respects the show was a decided advance on the previous ones.

Four fine groups of Chrysanthemums were staged. The first prize went to Mr. Townshend, gardener to E. B. Faber, Esq., Belvedere, Harrogate. Mr. J. Pettinger, of Strawberry Dale Nurseries, secured the second prize with a neat arrangement, but his individual blooms lacked the size and freshness of those in the winning collection. Mr. J. A. Schofield, Pannal, was third; and the Rev. T. Sheepshanks, Harrogate, fourth. In the miscellaneous plant groups Mr. Townshend was again first; the Rev. T. Sheepshanks second; and Mr. Pettinger third. The Chrysanthemum plant classes were decidedly weak, and call for no special reference.

The first prize for twenty-four incurved blooms, in not less than twelve varieties and not more than three of any one variety, went to Mr. Ketchill, gardener to Mr. Charles Simpson, Ackworth Moor Top, who staged Vice-President Jules Barigny, M. R. Bahuant, Baron Hirsch, Globe d'Or, Mrs. R. C. Kingston, Madame Darier, Brookleigh Gem, Jeanne d'Arc, D. B. Crane, Violet Tomlin, Robert Petfield, John Salter. Messrs. H. Clark & Son, Rodley, were second, there being only two stands in competition. Mr. J. W. Backhouse, Beverley, won first prize for twenty-four Japanese, not less than twelve varieties, and not more than three of any one variety, with the following:—Mrs. C. H. Payne, Simplicity, Duke of York, Eva Knowles, Niveus, Edith Tabor, Emily Silsbury, Colonel W. B. Smith, C. Davis, Hairy Wonder, Thérèse Rey, Sunflower, Mrs. E. G. Hill, Viviand Morel, and Dorothy Seward. Mr. S. Haldane, Hull, was second, showing Simplicity, Phœbus, and Edith Tabor very fine. Mr. S. Dawson, Otley, was third.

Bouquets and epergnes for dinner table decoration were shown in excellent taste by Messrs. A. Hall and W. Bonsal, Harrogate. Fine collections of fruit were exhibited. Mr. A. E. Brotherton, Arthington Hall; Captain Greenwood; the Marquis of Ripon; J. W. Lee, Bedale; Messrs. Winterburn & Son, Whixley, and Mrs. Whitham, Harrogate, also showed. Messrs. Backhouse & Son, the York Nurseries, exhibited a fine representative collection of Apples, not for competition.

HIGHGATE.—November 4th and 5th.

The thirteenth annual exhibition was held in the Northfield Hall, and proved a great success. The groups of plants were numerous and well arranged. The cut flower classes were well filled, and the quality throughout excellent. The Hall, and a tent erected outside, were filled, in fact crowded. The decorative section of the show was keenly contested, there being nearly twenty distinct classes devoted to this purpose. Extreme pressure on our space this week prevents any detailed account being given of them, suffice it to say they were a very attractive feature of the show, and greatly appreciated.

A remarkably fine set contested the premier class for a group of Chrysanthemums, to occupy a space of 60 square feet. Mr. Jas. Brooks, gardener to W. Reynolds, Esq., J.P., Highgate, was placed first with a magnificent group, containing good flowers combined with nice arrangement. Mr. J. Tubbs, gardener to H. G. Regnart, Esq., Highgate, second with a bright and fresh display. Mr. F. Gilbert, gardener to W. A. Sewell, Esq., Shepherd's Hill, third, with a pleasing group of dwarf plants. Mr. J. Brook was again successful for a group of Chrysanthemums and foliage plants of a similar size, exhibiting a very artistic arrangement of Chrysanthemums, intermingled with Ferns, Palms, Crotons, and Grasses. Mr. J. Tubbs secured second place with a fine display, but a little weak in the flowers, otherwise the group was good.

Mr. Jas. Brooks was deservedly awarded first prize for six trained plants, staging remarkably fine plants in first-rate condition, Madame B. Rendatler, Chinaman, and Maiden's Blush being most noteworthy. Mr. F. Gilbert was second with much smaller plants. Mr. Jas. Brooks was the only competitor for six trained Pompons, and was awarded the first prize with well grown plants of a dwarf type of training. Mr. J. Brooks was again first for a single trained specimen, showing Col. W. B. Smith. Mr. Gilbert was a very close second with a fine plant of J. Shrimpton; Mr. G. Saunders, gardener to W. Hayes, Esq., Highgate, third.

The premier cup class for forty-eight cut blooms, Japanese, was awarded to Mr. Jas. Brooks, gardener to W. J. Newman, Esq., Totteridge, for a grand exhibit. The blooms were remarkably fine. The best were Madame Carnot, Modesto, Madame Gustave Henry, grand; Australie, Pride of Madford, Duke of York and Phœbus. Mr. J. Sandford, gardener to G. W. Wright-Ingle, Esq., North Finchley, second with good specimens of Eva Knowles, Phœbus, Mrs. W. H. Lees, Mons. Chenon de Leché, Reine d'Angleterre, and Viviand Morel.

In the class for eighteen Japanese and a similar number of incurved, Mr. E. Rowbottom, gardener to Mrs. Williams, Hornsey, was first with an even exhibit, the incurved being perhaps the finer. Mr. E. Rowbottom was again first for twelve blooms of each section, staging very good incurved. Mr. J. Brooks, Totteridge, was placed first for twenty-four blooms, Japanese, with a strong stand, Pride of Madford, M. Demay-Taillandier, Australie, Madame Carnot, and Chas. Davis were especially fine. Mr. E. Rowbottom was second, with a weaker display. Mr. J. Sandford was well ahead for twelve Japanese, distinct, followed by Mr. E. Rowbottom. The Pompons made a very fine display, the whole of the exhibits being clean and bright. Mr. A. Page was placed first for twelve triplets, with a very strong stand. Mr. T. L. Turk, gardener to T. Boney, Esq., Highgate, was second, and Mr. A. E. Turk, gardener to F. B. Roberts, Esq., Highgate, third. A keen competition was brought out for twelve blooms pure yellow Japanese. Mr. J. Sandford securing the blue ribband with magnificent blooms of Phœbus. Mr. A. Page, gardener to A. L. Reynolds, Esq., North Finchley, with a fine twelve, comprising three varieties. Mr. J. Brooks, Totteridge, third. For twelve incurved varieties, Mr. J. Sandford was placed first with good Lucy Kendall, Brookleigh Gem, and Jeanne d'Arc. Mr. C. H. Martin, gardener to Mrs. Langton, Hendon, second.

WOOLWICH.—November 5th.

The Woolwich Horticultural Society does not concentrate its resources on one or two shows a year, but has monthly meetings at which certificates are awarded for meritorious produce. Still the public is given an annual treat in the form of a Chrysanthemum show, and the Drill Hall is admirably adapted for the purpose. Vehicles can be drawn in and loads of plants taken where they are required. On the opening day of the show the long rows of tables furnished with excellent cut blooms, flanked with groups along the sides of the building, produced an imposing effect. The shows of the Society have been larger and better yearly for four years, and the one under notice was much in advance of its predecessors.

Though the groups have never been so good before, they were, as a whole, too stiff and formal. Most of the plants were made to stand as straight up as soldiers at a review, and the stakes to which the blooms were secured were in most cases far too obtrusive. Moreover, many of the pots were obtrusive too, notwithstanding that other kinds of plants were permitted for the margin. These, in some cases, were employed, but not always effectively. It may be that some exhibitors of Chrysanthemum groups have neither Ferns nor foliage plants; and in such, or any cases, it seems a pity that evergreens are not allowed. A fringe of say, Mahonia aquifolia, would have a far better appearance than irregular sized pots, and add materially to the pleasing effect of groups, if not look better than some of the tender exotics employed for the purpose.

The first prize in the open class for groups was, we believe, won by an amateur, Mr. Edwards, evidently not because his blooms were the best, though they were good, but because of the taste displayed in arrangement, and the bold yet pleasing effect as a whole. The second prize group of Mr. Tomalin, gardener to S. White, Esq., Crayford, contained finer blooms, and there its merits ended. The third prize exhibit of Mr. Russell, gardener to T. Pim, Esq., Crayford, was similar in character.

In the cut bloom classes the many stands of Japanese made a fine display, and the competition in most classes was very keen. Good stands of incurved, Anemones, reflexed, and Pompons were also well worthy of the prizes they won. Mr. Dodd, gardener to Mrs. Champion, Frenches, Redhill, won the N.C.S. medal with twenty-four Japanese blooms, distinct, closely followed by Mr. Blackburn, gardener to J. Scott, Esq., Chislehurst, and Mr. Simon, gardener to W. W. Mann, Esq., Bexley.

Mr. T. Osman, gardener to L. J. Baker, Esq., Chertsey, was the premier winner with incurved blooms, similar positions being occupied with large Anemones and Pompons by Mr. Dodd, and reflexed blooms by Mr. Leadbetter, gardener to A. G. Hubback, Esq., Chislehurst. There were, of course, many other classes and prizewinners, but only the general character of the show can be indicated. It should be stated, however, that the premier blooms in the open classes were Mr. Jeyes' Mrs. H. Weekes (Japanese), and Mr. Worthington's C. Curtis (incurved); amateurs, Mr. Simon's Australie (Japanese), and Mr. Russell's C. Curtis (incurved), all very fine indeed. The Committee, with the courteous Honorary Secretaries, Messrs. R. C. Wilson and R. J. Worthington, are to be congratulated on the results of their labours.

WATERLOO.—November 5th and 6th.

On Friday and Saturday last the annual show in connection with the above Society was opened by R. Attwood Beaver, Esq. Mr. W. Tunnington and Mr. R. Pinnington, the Judges, also addressed the assemblage on the excellence of the Show. As compared with former years not only were the entries more numerous, but the exhibits were of much excellence; and it is a pleasure to know that the inhabitants of the district are able to make such a fine display when one takes into consideration that the gales coming up the river Mersey often sweep all before them.

The principal prizewinner of the day was Mr. H. Cliffe, gardener to J. Lawson, Esq., who succeeded in securing the two silver goblets presented by Isaac C. Glover, Esq. The prizes were for twelve incurved and twelve Japanese, not less than nine varieties of each, and for a group of Chrysanthemums arranged for effect. In the former he just held a slight lead with better finished blooms over his opponent, C. McLaren, Esq., a good third being staged by Mr. Rice, gardener to D. Fernie, Esq. Mr. McLaren turned the luck for twelve incurved.

Of the other cup class Mr. Cliffe was an easy winner with a group of plants that were simply perfect in arrangement and models of good cultivation, and Mr. Cliffe was a worthy recipient of the two cups, which he now wins outright. Mr. Hardy, gardener to Mrs. Pegram, and Mr. Rice staged extremely well for second and third positions. Mr. Cliffe was also successful in many leading classes with plants of excellent culture. Messrs. Rice and McLaren and Hardy were very conspicuous winners in other classes.

The groups of Chrysanthemums arranged with foliage plants were very numerous, the first prize, staged by Mr. P. H. Clare, gardener to J. B. Colton, Esq., although not having the best advantage in the matter of light, was very worthy of the first prize awarded. Miscellaneous plants of all kinds helped to make a bright effect. The baskets of Chrysanthemums (more especially the first prize, arranged by Miss E. Lawson, which was a bold attempt with large varieties of pink and white well handled in every detail) were noticeable, the sprays being also choice. In the open classes for twelve incurved and twelve Japanese the division was a very close one, Mr. P. Greene, gardener to Thomas Gee, Esq., Allerton, winning from Mr. Haynes, gardener to Mrs. Nicholson, Wavertree. Mr. Cliffe was a good third. In the two former stands the blooms were exceptionally good and well staged. Fruit was sparsely staged and not of the highest quality. The amateur classes were not so well represented as the Committee would wish.

If civility and hard work go to make up the success of a show the Society is more than fortunate in having J. M. Smythe as Chairman, G. W. Ashton, a splendid Secretary, and I. C. Glover as Treasurer, every one of whom stimulates exhibitors and Committee with an earnestness worthy of the highest praise. The Committee and friends were indebted to Mr. Glover for the handsome luncheon provided.—R. P. R.

LIVERPOOL.—November 9th and 10th.

On Tuesday the finest show ever held under the auspices of the Liverpool Horticultural Association was opened in St. George's Hall, The staging of former years had been departed from, and a grand series of groups of very improved style were arranged down the centre. On each side of these were tables with fruit and small plants, whilst the extreme wall sides were taken up by other groups and foliage plants. As mentioned in my notes a week ago, the greatest interest was centred in the challenge vase class for forty-eight cut blooms, incurved and Japanese, last year's winner being Mr. R. C. Townshend, gardener to Col. Lloyd, Aston Hall, Shrewsbury; he was easily beaten for the coveted honour by many points by that well-known and excellent grower, Mr. George Burden, gardener to G. B. Cockburn, Esq., Lingdale Lodge, Oxton, Cheshire, with certainly the greatest lot of blooms he ever put up, and so the Committee's handsome vase is left in the same position as regards its destination for another season.

In the Japanese the back row consisted of Edith Tabor, E. Molyneux, Simplicity, Mrs. C. H. Payne, Charles Davis, Duke of York, Marie Hoste, Viviand Morel. Second row: Mrs. H. Weeks, Thomas Wilkins, James Bidencope, Lady Ridgway, Violetta, Modesto, Australie, Robert Owen. Front row: Phœbus, Lady Hanham, Mdlle. Thérèse Rey, G. C. Schwabe, Australian Gold, Col. W. B. Smith, Mons. Chenon de Leché, and Mrs. J. Lewis. Incurved: Jno. Lambert, Empress of India, P. Dauphinoise, Lord Alcester, Chas. Curtis, Queen of England, Major Bonnaffon, James Agate, W. Tunnington, Mrs. Robinson King, Robert Petfield, Miss M. A. Haggas, Ma Perfection, Golden Empress, Violet Tomlin, Jeanne d'Arc, Madame Darier, Princess of Wales, John Salter, Miss Lucy Kendall, Hero of Stoke Newington, Brookleigh Gem, Mrs. Heale, and Baron Hirsch. Mr. Townshend was extremely good in size, but not bright enough, whilst the incurved were much behind. The best in the stands were Pride of Exmouth, Richard Dean, M. Chenon de Leché, Mutual Friend, Ernest Cannell, Graphic, Duke of Wellington, B. D. Crane, and Duchess of Fife. Mr. J. Heaton was a very close third with many choice flowers, Lady Ridgway, Phœbus, Graphic, Australie, Mr. H. Cheesman, Madame Darier, Mrs. R. C. Kingston, and Lucy Kendall being the best. Mr. George Haigh, gardener to W. H. Tate, Esq., Highfield, Woolton, was a fine fourth.

The first prize group of Chrysanthemums and foliage plants was staged by Mr. T. Gowen, gardener to J. A. Bartlett, Esq., Mossley Hill. Other cut bloom classes were of a high standard, the only weakness being amongst the incurved classes. Trained and specimen Chrysanthemum plants were much improved. Fruit was not only abundant but highly coloured, the Grapes being specially fine. Owing to the show being held immediately before going to press a full report will appear next week.

KINGSTON.—November 9th and 10th.

The twenty-first annual show was held, as in former years, in the Drill Hall, Kingston. Groups were good, but the cut bloom classes are always the strongest feature, and the present occasion was no exception to the rule. Under the management of Mr. E. H. Douet (the Hon. Secretary) and a hard-working Committee, the arrangements of the show were carried out in a most efficient manner.

The chief class was for forty-eight cut blooms, distinct, twenty-four incurved and twenty-four Japanese. This was open to all England, and a champion challenge vase, value 25 guineas, was the first prize in this great class. Needless to say, the competition between the five exhibitors was very keen, Mr. F. King, gardener to A. F. Perkins, Esq., Oak Dene, Holmwood, Surrey, eventually securing the coveted award. The flowers were of good size, fresh and rich in colour. The varieties comprised—Japanese: Mrs. J. Lewis, Australie (premier bloom), Phœbus, E. Molyneux, Madame Carnot, Silver King, Pride of Exmouth, Eva Knowles, International, Mons. Chenon de Leché, Viviand Morel, Edith Tabor, Charles Davis, Mrs. C. Blick, Mons. Ch. Molin, Mutual Friend, Modesto, Mdlle Thérèse Rey, Mons. Hoste, Viscountess Hambledon, Mrs. A. G. Hubbock, Australian Gold, Simplicity, and Mons. Marcus Ricaud. The incurved were Duchess of Fife, Lord Rosebery, Lord Alcester, J. Agate, Globe d'Or, Mrs. R. King, W. Tunnington, C. H. Curtis (premier bloom), Robert Petfield, Ma Perfection, Percy Surman, Major Bonnaffon, Empress of India, J. Lambert, J. Salter, Jeanne d'Arc, Bonnie Dundee, G. Haigh, Queen of England, Brookleigh Gem, Golden Empress, C. B. Whitnall, Miss M. A. Haggas, and Lyne junior. Mr. S. J. Hunt, gardener to Pantia Ralli, Esq., Ashtead Park, Epsom, was an exceedingly close second; his best Japanese were Mons. Chenon de Leché, Mrs. A. G. Hubbuck, Australie, Phœbus, and Edwin Molyneux. Charles Curtis, Lady Isobel, Duchess of Fife, Violet Tomlin, and Hero of Stoke Newington were the most conspicuous incurved. Mr. W. Jinks, gardener to Edgar Bruce, Esq., The Beeches, Walton-on-Thames, was a very good third; he lost points with his Japanese, but the incurved were of good quality; and Mr. J. Quarterman, gardener to V. C. Smith, Esq., Cobham, fourth.

Valuable prizes were offered for thirty-six Japanese, distinct, and five heavy stands were staged. Mr. W. Higgs, gardener to J. B. Hankey, Esq., Fetcham Park, Leatherhead, was first with a grand stand. His best blooms were Mrs. H. Weeks, Madame Carnot, Edith Tabor, Viviand Morel, Australie, A. H. Wood, Charles Davis, and Mrs. G. Carpenter. Mr. S. J. Hunt was a close second, and Mr. F. King, third.

For a group of miscellaneous plants to contain not less than twenty-five Chrysanthemums, and to occupy a space not exceeding 84 superficial feet, Mr. J. Portbury, Ripon House, Putney Heath, was first with a light and striking arrangement. Mr. D. Gibson, gardener to J. B. Johnson, Esq., Coombe Cottage, Kingston Hill, was second with a fine but much heavier arrangement. Third, Mr. G. Springthorpe, gardener to W. A. Bevan, Esq., Kingston.

In the class for twenty-four incurved, distinct, Mr. F. King again took the lead with a fine even stand; C. H. Curtis, D. B. Crane, Queen of England, J. Doughty, Major Bonnaffon, Lord Rosebery, and M. A. Haggas were the best. Mr. S. J. Hunt was second, and Mr. W. Higgs third. Six heavy stands were staged in the class for twelve Japanese, distinct, Mr. D. Gibson gaining the first prize with Phœbus, Mutual Friend, Duke of York, and others. Mr. G. Springthorpe was an excellent second.

Mr. J. Quarterman was well first with six Japanese; Mr. S. Mileham, gardener to A. J. Miller, Esq., Leatherhead, being second, and Mr. W. Brett third. For six Japanese, one variety, first Mr. Higgs with a grand stand of Madame Carnot; second Mr. Springthorpe with Phœbus, and third Mr. F. King with Mrs. W. Weeks.

In the class for twelve bunches of single Chrysanthemums, four very pretty exhibits were staged. Mr. G. W. Forbes, gardener to Madame Nicols, Regent House, Surbiton, was first with a splendid stand; Mr. S. Pead, gardener to R. S. Bond, Esq., Surbiton, second; and Mr. A. Felgate, gardener to the Duchess of Wellington, third. Eight stands were staged for six incurved, one variety. Mr. S. J. Hunt was first with Duchess of Fife; Mr. F. King second with C. H. Curtis, and Mr. Brett third with the same variety.

ROYAL AQUARIUM. November 9th, 10th, and 11th.

The chief exhibition of the National Chrysanthemum Society was held, as formerly, at the Royal Aquarium. The show is always remarkable for the keenly contested classes; but on this occasion, though there was no falling off in the quality, there appeared a slight diminution in many of the chief classes. The whole show has, however, proved itself worthy of its national character.

It is always regrettable when so many important shows are held on the same day, but this is more particularly the case when the Royal Horticultural Society and the National Chrysanthemum Society clash. If it were unavoidable nothing would be said, but the dates of the R.H.S. are fixed and published so early, that the Executive of the N.C.S. might easily choose another day. Let us hope they will avoid confliction in 1898.

The competition for the challenge trophy was not very keenly contested, the Bromley and District Society proving the victors. The blooms in the Japanese section were, reading from left to right—Back row: Madame Carnot, Australie, Phœbus, Duke of York, Mrs. Weeks, International, Chas. Davis, Mutual Friend. Second row: Viviand Morel, Primrose League, Etoile de Lyon, Thérèse Rey, J. Bidencope, A. Gold, Graphic, Mons. Chenon de Leché. Front row: Elsie Teichmann, G. C. Schwabe, Modesto, Milano, Simplicity, Matt. Hodgson, Edith Tabor, and Mrs. C. Blick. Incurved—Back row: Chas. H. Curtis, Mrs. J. Kearn, W. Tunnington, Empress of India, Mons. Desblanc, Major Bonnaffon, Robert Cannell, Duchess of Fife. Second row: J. Agate, Robert Petfield, Golden Empress, Lord Alcester, Ma Perfection, Violet Tomlin, Mrs. R. King, George Haigh. Front row: Mrs. R. C. Kingston, J. Doughty, Queen of England, Mrs. Coleman, Mrs. Heale, Miss Haggas, Princess of Wales, and John Lambert.

There were four competitors for thirty-six blooms incurved, distinct; the flowers, in nearly all cases, being well finished and fresh. Mr. W. Mease, gardener to A. Tate, Esq., Leatherhead, was first with a very even exhibit. His blooms were—Back row: Duchess of Fife, Violet Foster, J. Agate, Dorothy Foster. Major Bonnaffon, Mrs. R. C. Kingston, Wm. Tunnington, Lord Alcester, Lady Isobel, Robert Petfield, Chas. H. Curtis (grand), Ma Perfection. Second row: John Doughty, Empress of India, Lucy Kendall, M. P. Martignac, Queen of England, Violet Tomlin, John Lambert, Lord Rosebery, Golden Empress, Globe d Or, Jeanne d Arc, Robert Cannell. Front row: Princess of Wales, Brookleigh Gem, Empress Eugénie, George Haigh, Bonnie Dundee, Noel Pragnell, Princess Beatrice, Mrs. Hepper, Alfred Salter. Mrs. Heale, C. B. Whitnall, and Miss Haggas. Mr. W. Higgs, gardener to J. B. Hankey, Esq., Leatherhead, second, having good blooms of Duchess of Fife, Chas. H. Curtis, J Agate, Etoile d'Or, Lucy Kendall, and Princess of Wales. Mr. H. Butcher, gardener to C. J. Buss, Esq., Smeeth, third. Mr. J. Robinson, gardener to W. Lawrence, Esq., Hollingbourne, fourth.

A keen competition was brought out in the class for forty-eight Japanese, distinct, Mr. W. Mease again proving victorious. His blooms were—Back row: Madame Carnot, Etoile de Lyon, Mrs. W. H. Lees, M. de la Rocheterie, Baronne Ad. de Rothschild, J. Brooks, Mrs. C. H. Payne, Viviand Morel, M. Panckoucke, Eva Knowles, Pride of Exmouth, A. H. Wood, Lady Hanham, Simplicity, Australie, Yellow Madame Carnot. Second row: Phœbus. Mrs. Dewar, Julie Scaramanza, Mutual Friend, Mrs. G. Carpenter, M. Hoste, Chas. Davis, Mrs. Chas. Blick, M. Chenon de Leché, A. Gold, E. Molyneux, Mrs. J. Lewis, M. Gruyer, Edith Tabor, M. Hoste, Lady Ridgway. Front row: Mrs. Weeks, M. Ch. Molin, Colonel Chase, Sunstone, Mdlle. M. A. de Galbert, Modesto, Madame M. Ricoud, Baron Tait, Niveus, Mrs. Briscoe-Ironside, Madame Gustave Henry, N.C.S. Jubilee, Miss Elsie Teichmann, Robert Powell, Robert Owen, and Viscountess Hambledon. Mr. H. Perkins, gardener to Hon. F. W. D. Smith, M.P., Henley-on-Thames, secured the second place with a very good exhibit. The best flowers were G. J. Warren, Mutual Friend, Pride of Exmouth, Primrose League, and Australian Gold. Mr. P. Waterer, Fawkham, an amateur, third, with a much weaker display; Mr. J. McLeod, Dover House, fourth.

In the nurserymen's commemorative class, to consist of twenty-four Japanese and twelve incurved blooms, Mr. W. Wells of Earlsfield secured premier honours. His flowers were Calvat's Australian Gold, Madame Deis, Mdlle. Lucie Faure, Edith Tabor, M. Hoste, Mrs. J. W. Barks, a buff bronze sport from Edith Tabor; G. J. Warren, Gertrude Salter, Georgina Pitcher, Lady Hanham, Ella Curtis, Mrs. J. Lewis. Second row: Simplicity, Madame C. Krasty, Phœbus, N.C.S. Jubilee, Mons. Chenon de Leché, Souvenir de Madame F. Rosette, Mdlle. Laurence Zede, Papa Veillard, Surpasse Amiral, Australie, Mrs. Chas. Blick, Mrs. F. A. Bevan. Incurved.—Perle Dauphinoise, Duchess of Fife, Dorothy Foster, D. B. Crane, Ma Perfection, Lady Isobel, Emile Konin, Madame Ferlat, Mrs. R. C. Kingston, Lucille, M. de la Drone, Violet Foster, and Chas. H. Curtis. Mr. Norman Davis second, with good blooms of President Nonin, Australie, John Seward, Mrs. Hermann Kloss, Madame Laurence Zede, Mrs. R. C. Kingston, Chas. H. Curtis, Dorothy Foster, and Duchess of Fife.

In the class for thirty-six blooms, Japanese, red, yellow, and white for the Turner Memorial challenge cup, Mr. Norman Davis was placed first with a fine stand composed of Phœbus, John Neville, Western King, A. H. Wood, Beauty of Castlewood, Madame Thérèse Rey, Edith Tabor, Dorothy Shea, Mrs. H. Weeks, Modesto, R. Dean, and Madame Carnot. Mr. W. J. Godfrey, Exmouth, was placed second with fine blooms of Mrs. Weeks, General Roberts, Sunstone, and Modesto.

For twenty-four incurved blooms, distinct, Mr. F. G. Foster, Brockhampton Nurseries, Havant, was well ahead, the blooms were Lady Isobel, C. H. Curtis, Dorothy Foster, J. Agate, Mrs. R. Kingston, Ma Perfection, Violet Foster, Duchess of Fife. Mr. J. Kearn, Lord Rosebery, Queen of England, Globe d Or, Empress of India, R. Cannell, Major Bonnaffon, W. Tunnington, Bonnie Dundee, Princess of Wales, Lucy Kendall, Golden Empress, Camille Flammarion, Mrs. S. Coleman, Rena Dula, and Jeanne d'Arc. Mr. J. Robinson came second with neat flowers, a trifle weaker than the first prizewinner; his best blooms were Duchess of Fife, W. Tunnington, Chas. H. Curtis, Owen's Crimson, and Empress of India. Mr. C. W. Knowles, gardener to Mrs. C. Egerton, Roehampton, third.

In the class for twelve incurved flowers, distinct, Mr. J. W. Barks, gardener to P. Ralli, Esq., Cranleigh, was easily ahead. His blooms were Empress of India, Lord Wolseley, J. Agate, Golden Empress, Lord Alcester, Princess of Wales, Miss M. A. Haggas, Mrs. R. C. Kingston, Violet Tomlin, Mrs. S. Coleman, Mrs. Heale, and Lucy Kendall. Mr. F. King, gardener to Mrs. M'Intosh, second. Mr. A. J. Driver, gardener to the Misses Davis, Stonehouse, third.

A strong competition was brought out for twenty-four Japanese, distinct. Mr. W. Messenger, gardener to C. H. Berners, Esq., Ipswich, was first with a very heavy exhibit. The varieties were Madame Carnot, Etoile de Lyon, Edith Tabor, Mrs. C. H. Payne, Simplicity, Mons. Ed. André, Modesto, Australie. Second row: M. Chenon de Leché, M. Panckoucke, International, Madame G. Henry, E. Molyneux, H. H. Spencer, Madame Ad. Moulin, Phœbus. Front row: A. H. Fewkes, Rose Wynne, President Borel, C. Davis, A. Gold, Mrs. C. Blick, Ialene, Snowdon. Mr. R. Kenyon, gardener to A. F. Hills, Esq., Woodford, was a close second. His best flowers were M. Panckoucke, Madame Gustave Henry, Mutual Friend, Milano, John Seward, M. Hoste, and Australie. Mr. H. Butcher third; Mr. F. King, gardener to Mrs. M'Intosh, Romford, fourth.

Twenty-two competitors contested the class for twelve Japanese, distinct. Mr. W. Messenger secured first place. The varieties were—Madame Carnot, E Molyneux, Modesto, Australie, Mrs. C. H. Payne, Australian Gold, International, Madame G. Henry, Phœbus, Elsie Teichmann, M. Ed. André, and Edith Tabor; Mr. H. Shoesmith, Claremont Nursery, Woking, second, Australie, Madame Gustave Henry, Mr. A. G. Hubbock, Mrs. H. Weekes, and M. Chenon de Leché being the best blooms; Mr. R. Kenyon, third, with a very bright exhibit.

For six incurved blooms, one variety, Mr. W. Tebay, gardener to Mrs. Rycroft, Sevenoaks, was placed first with magnificent specimens of Charles H. Curtis; Mr. F. King, second, with the same variety; Mr. G. Foster, third.

The specimen trained plants were a very fine feature, the whole of the plants being very fresh and bright. In the class for six trained plants Mr. D. Donald, gardener to J. G. Barclay, Esq., Leyton, was placed first with grand plants. The varieties were Florence Percy, John Shrimpton, John Lightfoot, Col. W. B. Smith, Gloriosum, and Wm. Tricker. For four trained plants Mr. F. Gilks, gardener to A. Morris, Esq., Streatham Hill, was awarded first with good plants of Col. W. B. Smith, Emily Silsbury, Viviand Morel, and Mrs. E. W. Trafford. Mr. W. Davey second. For six standard trained plants Mr. Donald repeated his former success, having good plants of Miss Alice Luckman, William Tricker, Eva Knowles, Cleopatra, Chinaman, and Col. W. B. Smith.

Mr. W. Davey, gardener to C. C. Paine, Esq., Haverstock Hill, was awarded first for four trained standard plants The best were Colonel W. B. Smith and Stanstead Surprise. For a single specimen plant Mr. Donald was first with a grand plant of Colonel W. B. Smith. Mr. D. Donald scored again with six trained Pompons, the plants being very fresh and large.

There were three competitors for the group of Chrysanthemums arranged with foliage plants. Mr. J. Spink, Summit Road Nursery, Walthamstow, was first, with a fine group, well arranged; Mr. W. Howe, gardener to H. Tate, Esq., Streatham, second, with a well-arranged exhibit; Mr. Ed. Dove, gardener to H. E. Fry, Esq., Bickley Hall, third

A class of twenty-four dishes of Apples, to illustrate the progress made during her Majesty's reign, was not very keenly contested. Mr. J. McKenzie was awarded first prize for a grand exhibit; his fruits were remarkably fine. The best dishes were Gloria Mundi, Mère de Ménage, Lady Henniker, Bismarck, Warner's King, Emperor Alexander, Wealthy, Belle de Boskoop, Peasgood's Nonesuch, Golden Noble, and The Queen. Mr. H. Berwick, Sidmouth, second with a good, well-coloured exhibit, lacking the size of the winners. Mr. A. J. Thomas, Rodmersham, third.

The classes for decorative purposes appear to be growing rapidly in popularity, the whole of them being well filled and forming a very attractive feature to the show. The exhibits of fruit and vegetables were staged in St. Stephen's Hall, and made a very noteworthy display. The Grapes were a very good feature, while the classes for Potatoes called out a very strong competition.

A magnificent group of Chrysanthemums, beautifully arranged with Palms, Crotons, and Ferns, was set up by Mr. H. J. Jones, Lewisham. The arrangement and harmonising of colours left nothing to be desired: probably the finest arrangement of Chrysanthemums ever staged at this exhibition. Madame Edmond Roger, President Nonin, Simplicity, Yellow Madame Carnot, N.C.S. Jubilee, Lady Hanham, and Modesto were very fine. The same exhibitor also staged a large table of Chrysanthemums in vases. Mr. Norman Davis, Framfield, also excelled himself in a grand exhibit of cut Chrysanthemums arranged in gigantic vases, each receptacle containing one variety. The blooms were grand, and arranged with coloured foliage, Palms, Ferns, and foliage plants, had a remarkably fine effect. Some gigantic blooms of Madame Carnot, Western King, Phœbus, King of Plumes, Sunstone, Australian Gold, and Richard Dean were staged.

Mr. W. Wells, Earlsfield Nurseries, produced a fine display of plants, comprising all sections of the Chrysanthemum, the singles and Japanese being very conspicuous, Mrs. Chas. Blick, Madame Ferlat, Mons. Chenon de Leché, Parachute, C. A. Owen, Madame Ed. Roger, and Mdlle. Laurence Zede, being very good. Messrs. H. Cannell & Sons, Swanley, had one of those characteristic displays so famous at this exhibition. The collection of Zonal Pelargoniums was unique; the huge bunches of flowers, combined with such a variety of colours, has seldom been equalled. A collection of Cannas also contributed a very bright corner to the exhibit. The Chrysanthemums comprised the new varieties, such as Madame Ferlat, Leocadie Gentils, Mdlle. Laurence Zede, President Nonin, Mrs. Geo. West, Khama, Queen of Portugal, and Swanley Giant.

Messrs. J. Laing & Sons exhibited a very pretty table of plants and fruit. Palms, Bouvardias, and Carnations predominated in the former, while excellent examples of Apples and Pears completed the display. The most noteworthy dishes were Beauty of Kent, New Hawthornden, Lane's Prince Albert, Blenheim. Mr. W. J. Godfrey, Exmouth, had a very fine display of Chrysanthemums and Carnations well arranged. The blooms of Australie, Milano, Duchamel, M. Demay-Taillandier, Miss D. Shea, Vicomte Roger de Chezelles, Lovely, Modesto, Pride of Exmouth, and Mrs. Malling Grant were superb.

Messrs. W. Cutbush & Son, Highgate, exhibited an attractive group of Chrysanthemums, Carnations, Gloire de Lorraine Begonias, and a few dishes of good Apples, the whole finished off with Palms, Ferns, and flowering plants. Mr. Robert Owen, Maidenhead, exhibited a large table of cut flowers, the seedlings being a very prominent feature, Owen's Memorial, Lady Phillips, Duke of Wellington, and Dr. Albin Munier being notable.

Messrs. Sutton of Reading exhibited a remarkably fine collection of Potatoes, the main varieties being staged in large groups, while the fancy varieties were placed in small baskets. The leading varieties were Reading Russet, Sutton's Perfection, Harbinger, Reading Hero, Early Regent, Magnet, Triumph. Mr H. Berwick produced a very fine show of Apples and Pears. The former were clean and well coloured. The most conspicuous were Newton Wonder, Wellington, Cox's Orange Pippin, Blenheim Pippin, Cox's Pomona, Waltham Abbey Seedling, Wealthy, and Wellington. A table of Apples from Messrs. S. Spooner and Son, Hounslow, presented a very bright and fresh appearance. The examples were well coloured and staged in great variety.

A pretty exhibit of Chrysanthemums and winter flowering Carnations came from Reid's Nursery, Beckenham Hill; the Carnations were very clean and bright. Mr. T. S. Ware, Tottenham, staged a fine table of Chrysanthemums, dotted in a bed of Maidenhair Fern, having a very pleasing effect. Messrs. Crane & Clarke, March, exhibited a group of winter flowering Carnations. Mr. B. Ladhams, Shirley, staged Golden Elsie Chysanthemum in good form, also a variety of hardy flowers.

ISLE OF WIGHT.

THE Ryde Chrysanthemum Show was held on November 2nd and 3rd in the Town Hall, and the exhibits were unusually good. The principal prizewinners were Messrs. T. W. Butler (who won for the second year in succession the challenge cup, which now becomes his own), W. H. Jobling, W. Heath, F. Francis, S. Prismall, E. G. Brett, C. Price, E. C. Goble, and E. V. Matthews. Mr. M. Silsbury received the I.W. Horticultural Improvement Association award of merit for his seedling bloom of Lady Isabel. Mr. T. W. Butler received the Association certificate for cultural merit. Mr. E. C. Goble, F.R.H.S., staged a miscellaneous group, consisting of Orchids (in variety), Palms, and Ferns, not for competition.

The Isle of Wight Chrysanthemum Society held its thirteenth exhibition at Newport, on November 4th and 5th. The entries were not so numerous as last year, but of superior quality. The I.W. Horticultural Improvement Association certificates were secured by Messrs. T. W. Butler, W. Scott, W. G. Denness, E. W. Shepard, W. Matthews, and J. J. Linington. The principal prizewinners were Messrs. T. W. Butler, C. Martin, G. Freeland, A. F. Wolfe, E. W. Shepard, W. E. Wickens, F. Miller, W. H. Jobling, J. J. Linington, J. R. Gould, W. Matthews, W. G. Denness, J. Love, H. Snellgrove, J. Chiverton, C. Coombes, and W. J. Broadwater. The specimen plants were especially noteworthy. Mr. W. Scott staged a plant of Sœur Dorothee Souille, about 20 feet in circumference, and with over 200 blooms, of good size and quality. Mr. J. J. Linington had a huge E. S. Trafford, and Mr. E. W. Shepard a magnificent plant of W. Tricker.

The Shanklin Chrysanthemum Show was held on November 4th and 5th. The exhibits were more numerous and of better quality than last year. The prizewinners in the various classes were Messrs. H. Love (who secured the I.W. Horticultural Improvement Association's certificate for cultural merit), W. Heath, F. Silsbury, C. H. Snook, S. Prismall, Chas. Orchard, E. Rayner, G. Kingswell, A. W. Kingswell, W. Howard, and M. Silsbury. The latter obtained the I.W. Horticultural Improvement Assscіation award of merit for his seedlings Chrysanthemum Nina Dabbs.

The monthly meeting of the Isle of Wight Horticultural Improvement Association was held at Warburton's Hotel, Newport, on Saturday. Dr. J. Groves, J.P., B.A., presided over a large attendance of members. Mr. J. Barkham, F.R.H.S., gave a thoroughly practical discourse on the "Cultivation of Chrysanthemums for the Amateur," dealing with every branch of "Mum" culture.

The injuries caused to trees by the caterpillar of the wood leopard moth were discussed, a specimen being sent to the meeting by one of the members. The value of the worm-eating slug (Testacella haliotidea) was also discussed, one of the members having found by observation its value to gardeners. Several new members were elected.

FRUIT TREES ON COTTAGE WALLS.

I KNOW of no more pleasing sight than that of a cottage wall clothed with fruitful trees, and if you come to talk to the occupier you will find that he has reasons to thank the man who foresaw the results and planted the trees. The other day when looking over a cottage garden I noticed espalier Apples of the best varieties growing round the quarters, and still bearing traces of proper pruning and training. Age and neglect had, however, placed on them the finger of decay. The bark was cankered and the spurs massed so thickly together that fruit was out of the question. Here and there was a wide gap telling where a branch had died, and no thought given to fill its place. It needed not the knowledge of an expert to tell that the returns from the trees had been sufficient to pay the rent of the garden over and over again, but the fostering hand that tended them had gone, and the trees had fallen into decay. A wall ran along two sides of this particular garden and was clothed with ancient Pear trees. There is no reason to think that the cottage was ever occupied by anyone but an ordinary labourer, yet the trees had been properly trained on the orthodox horizontal principle. At the time of my visit the growth looked weakly, and what few fruits were noticeable were small and cracked—signs of poverty and decay, yet they will doubtless be allowed to remain till they eventually collapse altogether, and the wall most probably will stand useless.

By way of contrast I will cite another instance of a cottage and garden. The wall on one side of the house was clothed with a Morello Cherry, bearing a heavy crop of fine fruit, and over the front was an Apricot. A Coe's Golden Drop Plum had been accorded a place up the outer wall of the chimney, and to use the man's own words, "they ripened up there fine." The garden round the cottage was fairly large, and one portion was confined to vegetables, while the other was planted with bush Apple trees and Plums, with Gooseberry and Currant bushes between. Asked if they paid him, the man bent low and whispered, "I made £20 of 'em last year," and then went on to tell how he had first planted the wall trees, and in time finding them profitable had planted up the portion of the garden which hitherto had been of little use to him. These are but two instances, forcible by contrast, of the many that could be mentioned.

Landlords can do much to improve this last state of affairs. On one estate which possesses extensive cottage property, the owner some years ago provided his tenants with small trained trees to be grown on the walls. His only stipulation was that they must be properly trained and cultivated, and any occupier failing to do this had to give up his holding. An experienced man was appointed to pay periodical visits to see that these instructions were carried out and make a report. When encouraged in this manner, with only a few solitary exceptions, the cottagers took pride in their trees, which grew as they began to be profitable, with the result that the property is a credit alike to owner and occupier. Could not something more be done in this direction?

Gardeners can do something to make their subordinates better fruit growers. The head gardener by the influence he holds and the example he sets can often create an interest among those around him, and by doing so help them to help themselves. Let all who can hold out the hand of help and encouragement to those who would benefit by and appreciate such assistance.—H.

THE YOUNG GARDENERS' DOMAIN.

CULTURE OF THE GRAPE VINE.

(*Continued from page* 396.)

FOR succession the houses should be started at intervals of one month. Vines started into growth in early November should have their crop ripe early in April, or if hard forcing has been practised, in March. Vineries for late Grapes should be started early in March, as the Grapes require a longer time to become perfect. Less than six months should never be allowed. The grandest Grape we have, Muscat of Alexandria, is often found difficult to finish. The berries should be quite ripe in September, as it is of no use trying to finish them properly by the aid of fire heat alone.

In the earliest house, as the buds are pushing, raise the temperature to 50°, 55° by night, allowing 65° or 70° as the maximum in the daytime before admitting air. At this season ventilation must be very carefully done, or the young growths may be crippled. Close the house early, slightly syringing the canes twice daily, in the morning and at closing time, but if the weather be sunless do not damp too much, or mildew may be encouraged. With the advance of growth, and when the bunches show themselves, raise the temperature to 60°, 65° by night, and 70°, 75° by day. As the shoots approach the glass they should be gradually eased towards the wires by the aid of matting, and great care is needed to prevent damage to the brittle shoots. It is best to go over them every morning, easing a little each time until the growths are brought safely to the wires. Up to the time of flowering a moist, growing atmosphere should be kept up.

When the Vines are in flower the temperature should be 65°, 70° by night, and 75° by day, allowing about 5° more for Muscats. In distributing the pollen some gardeners say simply tapping the bunch is sufficient, but I find this will not answer in all localities. It is safer to go over each bunch at midday with a fine camel's-hair brush or rabbit's tail, as those treated in this fashion seldom fail to set well. Cannon Hall

Muscat and Muscat of Alexandria need especial care in this respect. All through the flowering period the atmosphere must be kept drier than usual.

As soon as flowering is over an increase of moisture must be allowed, and when it is perceived which berries are swelling thinning should commence. A sharp, clean pair of scissors is required, as if the stalks be torn instead of cut it is liable to cause early decay. This is especially the case in late hanging Grapes. Experience will teach the distance to leave between each berry. For instance, Black Hamburgh or Foster's Seedling do not requite so great a distance as Black Alicante or Gros Colman. In the case of Muscats little thinning is required, as there is generally so much waste from unfertilised berries. In thinning always commence at the bottom, and work upwards, and the stem must not be twisted in holding.

During the growing season the border must never be allowed to become dry. As each vinery is started the border must be examined, and if dry should have a sufficient supply to thoroughly soak the whole, while when the Vines are in full growth it is astonishing the quantity of water a Vine will take up. If the soil is light, water is required once a fortnight; if heavy, once in about every three weeks. The growth and bunches are greatly benefited by occasional waterings with soot water, and by the use of some well proved fertiliser. These should never be applied after the Grapes are fairly colouring, or they may cause the berries to be bitter. In applying water to Vine borders, it must always be several degrees warmer than the mean temperature of the house.—SEMPER.

POINSETTIA PULCHERRIMA.

FOR brightening the conservatory or plant stove, or for decorative purposes, during the dull winter months there are few plants to equal the Poinsettia. If the old plants are placed in a house with a genial heat about the beginning of April and given a good watering they soon start into growth. When the growths are about 3 inches in length they should be taken off the plants with a heel, and inserted singly in thumb pots which have been filled with a light, sandy compost. Place them in a propagating frame with a gentle bottom heat, keep them close and shaded, when they will soon form roots. When growth commences admit air for a few days to strengthen them, after which remove them to a shelf in a warm greenhouse. It is desirable to keep the plants as near the glass as possible, to insure stout, not weakly, growths.

After having rooted freely, transfer them to large 60-size pots in a compost of half loam and half leaf soil and an addition of sand. When they have filled the pots with roots move them into 6-inch pots. See that the pots are clean and well drained; a little soot sprinkled over the crocks is of great assistance in keeping out worms. Use the same compost with a free sprinkling of wood ashes. This provides a sound rooting medium, yet sweet and porous.

About the middle of July place them in a cool frame, ventilating freely, yet judiciously, during the day, and leaving a little air on at night to harden the wood. Weak liquid manure given twice a week, and a little soot water occasionally, will be found of great benefit to the plants at this stage. Syringe them with tepid water in the afternoon, as they delight in a moist atmosphere when growing.

About the end of September remove them into a house with a temperature of 65° by day and 60° at night, because if left out when the nights become cold they lose their foliage, which spoils the appearance of the plants.

Cuttings may be inserted till the middle of July, and by keeping the plants in small pots they prove attractive, and, for various decorative purposes, useful.

After the plants have passed their best, they should be arranged on a shelf in an intermediate house to ripen their wood, gradually withholding water from them. I have found that they break much better in the spring if left exposed to the light than when stored away under a stage or in some dark corner.

Red spider and scale are the chief pests of the Poinsettia; but if watering and syringing are carefully attended to, and a sufficiently moist atmosphere is maintained during their growing period, it is not often the plants are troubled much with these enemies.—J. V.

TRADE CATALOGUES RECEIVED.

W. Atlee Burpee & Co., Philadelphia, U.S.A.—*Trade List of Sweet Peas.*

W. Clibran & Son, Altrincham.—*General Catalogue.*

J. Cocker & Sons, Aberdeen.—*Roses.*

J. Cooling & Sons, Bath.—*Roses and Fruit Trees.*

Dicksons, Ltd., Chester.—*Forest and Ornamental Trees and Shrubs.*

Dicksons & Co., 1, Waterloo Place, Edinburgh.—*Forest and Ornamental Trees.*

F. A. Haage, jun., Erfurt.—*Bulbs.*

J. Jefferies & Son, Cirencester.—*Roses and Trees.*

Little & Ballantyne, Carlisle.—*Trees and Plants.*

R. C. Notcutt, Wood's Nursery, Woodbridge.—*General Nursery Stock.*

T. Rivers & Son, Sawbridgeworth.—*Fruit Trees.*

F. Roemer, Quedlinburg, Germany.—*Flower Seeds.*

The Devon Chrysanthemum Co., Pearly Cross, Teignmouth.—*Chrysanthemums.*

W. Welch, Rush Green, Romford.—*Chrysanthemums.*

FRUIT FORCING.

Vines.—*Earliest Forced in Pots.*—Vines started now will afford Grapes fit for table in April or a little earlier with sharp forcing. For early work not any are better than Black Hamburgh and Foster's Seedling, or, for quality, White Frontignan and Madresfield Court. Stout well-ripened canes, with plump buds, and given a short rest, answer for early forcing. The Vines require a light, airy, efficiently heated structure, which may be a lean-to facing south or a three-quarter span-roof having the same aspect, or a span-roof with ends east and west. If the hot-water pipes are at the front of the lean-to and three-quarter span, also at the sides of the span-roof, the Vines may be stood upon them, placing tiles or slates on the pipes and standing the pots upon them. The tiles or slates become warmed and transmit the heat to the pots, which are more or less warmed at their base, and the roots are not prejudiced by the heat. The tiles or slates also throw off much of the water or liquid manure escaping from the pots, so that there is no risk of a surfeit of steam.

Pedestals of loose bricks should be formed for Vines in beds for the pots to stand upon, thus raising them to the required height and preventing sinking. Vines in pots and restricted thereto afford excellent fruit with judicious feeding. Oak or Beech leaves are the best for affording bottom heat. They supply a genial warmth and regular moisture in the early stages, and rich stimulating food when the demands of the Vines are greatest. The house must now be ready and the plants placed in position. The canes should be kept horizontally, or have the ends depressed, if necessary, to insure their breaking evenly from the base upwards. Damp the Vines and house two or three times a day, and maintain a temperature of 55°, on fine days 65°, the heat about the pots not exceeding 60° to 65°. Only afford water to render the soil evenly moist, as a wet medium retards root action, and in no wise contributes to a good break, but the reverse.

Early Forced Planted-out Vines.—When young and vigorous Vines have to be started for the first time, to afford ripe Grapes at the end of April or early in May, the house must be closed by the middle of the month, for they do not, as a rule, break so quickly as Vines that have been forced for a number of years. The older Vines that have previously been forced need not be started until the beginning of December. To produce a soft humid atmosphere and to economise fuel a good ridge of fermenting material may be placed upon the floor or inside border, and be turned at short intervals, additions of fresh being made as the heat declines. The temperature of the house should range about 50° at night, 55 by day, and 65° on bright days. The outside border must be protected from frost by a covering of leaves, with a little litter over them to prevent their blowing about. If spare lights are at command, by all means use them to throw off heavy rains and snow.

Houses Cleared of Grapes.—When the Vines are leafless and the Grapes cut attend to the pruning without delay, for nothing contributes more to health and a good break than thorough cleanliness and an early and complete period of rest. Vines in good condition, having stout short-jointed wood thoroughly ripened, may safely be pruned to a couple of buds. The latter, however, are not always sufficiently developed at the base of the annual growths to give as large bunches as desired, and in that case the laterals may be left a little longer, say one or two more eyes. It is necessary that a plump, round (not large and flat), well-developed bud on stout, hard, thoroughly ripe wood be selected for pruning to, as such usually produces a close, well-set, compact bunch. When the wood has not those characteristics the basal buds are often small, which arises from various causes—sometimes from overcropping, at others through overcrowding, frequently from excessive vigour, and oftentimes from weakness. The result is small bunches when hard and fast lines of pruning are practised. Wash the Vines with tepid soapy water, 3 or 4 ozs. of softsoap to a gallon of water, using a brush effectively, yet with care and judgment, so as to reach and dislodge any hibernating pests. If there have been infections of scale, thrips, or red spider, use one of the advertised insecticides. Remove the remains of the mulchings, also the surface material, down to the roots, especially near the collar, and supply a top-dressing of turfy loam chopped up moderately small, and to a barrowload (about 3 bushels) add a pint of bonemeal and a similar quantity of soot, with double the quantity of wood ashes, incorporating thoroughly. Where the houses must be used for plants they should be kept cool, not exceeding 40° to 45°, ventilating freely above that temperature.

Houses of Thin-skinned Grapes.—The soil and atmosphere having been saturated by rain, these have caused Grapes, particularly Black Hamburghs, which have been ripe since August, to damp considerably in spite of free ventilation and a genial warmth in the hot-water pipes. The Vines that ripened their crops in September are still in foliage, and will bear more moisture at the roots and in the atmosphere—indeed, moderate moisture in the atmosphere is necessary to prevent undue evaporation and the shrinking of the Grapes. A slight warmth in the hot-water pipes will be required almost constantly to maintain an equable temperature, but this must not be too high, or it will so dry the atmosphere as

to cause the Grapes to shrivel prematurely. A temperature of 40° to 45° at night and 50° by day will be sufficient, ventilating freely and early in bright weather, so as to prevent moisture being deposited on the berries. Outside borders should be covered with lights or tarpaulin to throw off heavy rains. Remove all fallen or matured leaves, practising every precaution against damp and mould.

Late Grapes.—These do not always finish well, and this usually arises from three primary causes—namely, starting the Vines too late, and not accelerating thorough growth during the spring and early summer months, so as to give the Grapes the full benefit of the summer sun to swell and ripen. Overcropping, too, not only prejudices the current crop, but militates considerably against the succeeding year's bearing of the Vines. A bad condition at the roots is, however, the most disastrous of all, for improper food is attended with many evils, and these hinder the perfection of the crop. If the defect is due to overcropping some relief may be afforded by cutting a portion of the crop at the earliest convenience; and though nothing will be gained by pushing the fire now, the temperature should be maintained at 60° to 65°, with 10° to 15° advance from sun heat, so as to secure the thorough ripening of the wood, admitting air freely when the weather is favourable, and leaving a little on constantly. Where the cause can be traced to imperfect drainage or bad borders no time should be lost after the wood becomes sufficiently ripened, or when the leaves give indications of falling, in getting out the old soil, rectifying the drainage, and relaying the roots in fresh compost.

Where the Vines are in proper condition the timely attention to fallen leaves in clearing away and looking over the bunches for decayed berries will keep matters straight. Air is the best preventive of mouldiness. A temperature of 45° to 50° suits the vinous Grapes, such as Gros Colman, and 50° to 55° the Muscats, as both improve considerably after apparently ripe.

THE KITCHEN GARDEN.

Globe Artichokes.—Owing to the extraordinary mildness of the autumn Globe Artichokes have not only continued productive unusually late, but the old stools are pushing up fresh sucker growths far more than desirable. Never perfectly hardy, the plants are peculiarly liable to suffer from the effects of an early severe frost this season. They must be protected then. Old flower stems should be cut down to within 1 foot of the ground, and all large leaves be similarly shortened. The protection may consist of either leaves, covered with strawy manure to keep them from blowing about, or ashes. If the precaution of weeding out worthless seedlings has not already been taken do it at once while yet they can be recognised.

Celery.—A dry autumn has been most favourable for the work of moulding up late Celery. Unless the soil is well banked up around the plants frost is liable to quickly ruin them. Not more than half of the tops of the leaves ought to protrude, and if the ridge is rounded off sharply and made smooth much rain and snow water will be thrown off. An outlet from the trenches ought to be made for this water, Celery keeping best when the subsoil is comparatively warm and dry. An effort should also be made to protect, as often as necessary, the exposed tops of leaves. If these are badly injured by frost, the decay which follows will inevitably gradually travel downwards and reach the hearts.

Beans and Peas.—In the caso of heavy slug-infested soils, sowing Beans and Peas in November is usually a waste of labour and seed. Under more favourable conditions seed may be sown of the early and hardy Early Longpod, Beck's Green Gem, and Mazagan Broad Beans; and any of the early round-seeded varieties of Peas about the middle of this month on a border sloping to the south. Dispose the rows as far apart as the known height of the varieties, sow rather thickly, and cover with about 2 inches of fine soil. If mice are troublesome, just damp the seeds and well roll them in powdered red lead prior to sowing. The young plants, from the time they are showing through the soil till next spring, will have to be well attended to, protecting from birds with galvanised wire netting covers or lines of thread, and from slugs by means of frequent dustings of soot and lime, applied when the dew is on the plants. As far as Peas are concerned, raising under glass and planting out in spring is the surest method of laying the foundation of an early if somewhat light crop of Peas; and Broad Beans also succeed well under similar treatment.

Mushrooms.—Beds formed in ordinary heated Mushroom houses and spawned early in November ought to produce good crops in January. It is a mistake to make very shallow beds, as these so soon become cold and dry. Let the droppings be thoroughly well prepared, and the bed or beds may then be formed 15 inches to 18 inches deep. They may be made to slope gently to the front, though there is no real necessity for this, and the manure should be put together solidly. Spawn directly the heat declines to about 80°, and if there is any likelihood of the heat rising again after spawning, or if more vapour is likely to collect about the spawn than is good for it, use large lumps. As a rule a single brick of spawn ought to be broken into about eight pieces. Insert these 8 inches apart each way, and any crumbs left should be strewn on the top, as a few early Mushrooms may result from these. If it may safely be done cover with 2 inches of good fine loam at once, but if this early enclosing of the heat is likely to lead to an injurious rise of the temperature, defer soiling over for about three days. A heavy covering of soft strawy litter should also be given directly this can be done with safety, wooden shutters sometimes taking the place of this.

Established Beds.—The best form of Mushroom houses are those heavily thatched, both on the roof and at the sides, and the next best those with ceiled-inside roof, double walls, and double-banked doors and windows. If a genial equable temperature of about 55° can be maintained, as in a warm cellar, and frequently in heavily thatched, well-darkened structures, without the aid of fire heat, these conditions are most favourable to the production of exceptionally heavy crops of succulent, richly flavoured Mushrooms. Where the houses resemble ordinary sheds in their structure, with perhaps mats hung over the windows and doors to exclude light and some cold air, the fluctuations of temperature are great, as well as injurious. If fire heat is the remedy apply this sparingly, and in all cases guard against high temperatures. Turn it off when the heat will stand at the figure named without the assistance of fire heat. The atmosphere not being made very dry by fire heat, daily syringings are not called for, and in any case avoid daily wetting the soil of the beds, as this is liable to saturate it, and to turn the tiny Mushrooms soft and brown. When water is needed give enough in a warm state to well moisten the bed at one or two waterings, and be content with that. Beds that have been producing for some time may well be assisted with liquid manure, diluted and warmed as for pot plants, or with water in every gallon of which 1 oz. of common salt has been dissolved.

THE BEE-KEEPER.

The Weather.

The past month has been remarkable for its even temperature and the number of fine days that have prevailed. Although the last week was extremely foggy, the sun shone brightly on several occasions, notably on Saturday, 30th ult., when the shade thermometer registered 60°, reminding one of May instead of the last days of October. There was less than an inch of rainfall on seven days, which is much below the average.

But how will this unseasonable weather affect the bees? In the first place it will cause the queens to continue laying longer than they would under ordinary circumstances, and if the weather should continue mild for a few weeks longer, the various colonies will doubtless be in a much better condition than they were last winter when the bees were confined to their hives for several weeks during the autumn owing to the inclement weather. It is advisable to bear in mind that when breeding is going on apace there will be a much greater consumption of stores than would otherwise be the case. If stocks have not been well provided with stores and a sudden spell of cold weather sets in, the brood will become chilled, and this will be the forerunner of much evil. Late feeding with thin syrup will have the same effect, the queen will commence laying, supplies are stopped, and the colony collapses.

If the bees from a strong stock have been observed carrying in pollen freely during the prevalence of fine weather lately, they should be examined with a view to ascertaining if they have sufficient stores. This may be done without disturbing the bees by simply lifting the quilt, and if two or three combs have sealed stores nearly their full length they will not require feeding. But if only a little is seen near the top of the frames, if not supplied with stores they will probably die of starvation.

It is now too late to feed with syrup, for although the bees would take it freely if given warm, they would not seal it over, and, therefore, candy is preferred at this season, which should be made according to the instructions given in previous notes. Bees take it freely, and, if well supplied, will come out strong and healthy the following spring.

Reduction of Frames in Hives.

Is it necessary to remove the outside combs from a hive if they are not covered with bees, and have no honey in them at this season? I do not recommend their removal from the hive, and now seldom practise it in my apiary, as, after experimenting with several hives, I came to the conclusion it was not worth the trouble.

Reducing the number of frames in a hive at this season is still recommended by some bee-keepers on the plea of warmness, as after the removal of the spare frames, those remaining are pushed close together to one end of the hive, and the division board placed close to them. The frames are then covered, and the intervening space between the division board and the side of the hives is also filled with some warm material.

A bag of chaff or cork dust answers the purpose admirably. It, however, involves much labour where colonies are numerous, as the spare combs have to be stored in a suitable place. These invariably keep better in the hive than anywhere else, and in practice I can see no advantage in removing them, as a hive should not have less than ten frames for stores and wintering.

If hives are large, and have space for fifteen or twenty standard frames, it would be a decided advantage to only allow the bees to have access to not more than twelve frames. The spare ones may then remain at the back of the division board, which can have bee space

left at the bottom. This will allow the bees to pass underneath, and it is surprising how they will clean all débris from the combs when confined to their hives, owing to the inclemency of the weather in early spring.

Two colonies of bees will winter well in a hive of this description if an entrance is made at opposite ends. They may then be placed in separate hives before they become strong enough to swarm the following spring. I prefer this plan to allowing both queens and bees to remain in a large hive with a super on the top, as when one colony swarms the bees from the other part of the hive will invariably go with them.

It is interesting to bee-keepers to try experiments on the above lines, as by removing the spare frames from some of the hives, and allowing them all to remain in the others, they will be enabled to see at a glance next spring which has wintered the best.

Colonies Strong in Autumn.

It is not always the stocks that are strongest in the autumn that will be the best in the spring, and in experimenting with a few or many combs in a hive, it will be necessary to do so for at least two winters before a decision can safely be arrived at. Where there are numerous stocks of bees kept there will always be a great difference between them the following spring. How is this to be accounted for? This is a difficult question to answer, but the fact remains.

In many instances that have come under my notice it has been those stocks that were extra strong in bees in the autumn that were the weakest the following spring. This, I believe, is often caused by the old bees dying late in the autumn. The colony may be headed by a young fertile queen introduced too late in the season to be of much use for increasing the number of bees.

A nucleus stock headed by a queen raised in the same hive as the former, and which goes into winter quarters with not one-twentieth part the number of bees, will probably be in a much better condition the following May. This clearly proves that it is the stocks that have the most young bees in the autumn that will be in the best condition the following spring.—An English Bee-keeper.

TO CORRESPONDENTS

All correspondence relating to editorial matters should, until further notice, be directed to "The Editor," **8, Rose Hill Road, Wandsworth, London, S.W.**, and **NOT** to Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Old Apple Tree (*Cymro*).—The tree which is supposed to have been planted about 200 years ago, and of which you send a very good fruit, has in all probability been raised from a pip of the Catshead. It was customary in the olden time to raise Apple trees from seeds, and that is why there are in old orchards so many varieties which have never had other than local names. A few of the varieties are good, but the majority inferior. Dr. Hogg has described in the "Fruit Manual" the Catshead as "one of our oldest and best culinary Apples, in use from October till January; tree a vigorous grower, attaining the largest size, and though not an abundant bearer in the early period of its growth, it is much more productive as it becomes aged." Few other varieties of the same age as your tree could produce such fruit under similar conditions—namely, "growing close to a large Chestnut, and has had no manure applied for twelve years.' You must observe that we do not say it is the true Catshead, but a varietal form, and apparently a good one. The only sure way of your tenant securing trees of this particular variety will be by taking grafts from the original, and he will obtain fruit the sooner if he attach several to any healthy trees of inferior varieties that he can cut down for the purpose, otherwise graft on young Crab stocks.

Chrysanthemum Classification (*W. J. G.*).—You are no doubt aware that a new committee called the Classification Committee has made certain modifications in the N.C.S. catalogue, and particularly in the case of some disputed varieties supposed to be of the incurved type. As things stand at present Duchess of Fife is classed as an incurved, and Sir Trevor Lawrence as a Japanese incurved by this new Committee (see report in the N.C.S. schedule for 1897, pp. 26, 27); but M. Desblanc (Jap. inc.) and Chamechaude (inc.) remain in the Society's catalogue as indicated, and where it is stipulated that the N.C.S. Jubilee catalogue is the authority the two last named varieties must be shown as a Japanese incurved and incurved respectively. It is presumed that you mean M. Desblanc, for there are also a Madame Desblanc and a Yvonne Desblanc. To assist in the identification of the variety it may be mentioned that the proper M. Desblanc is of a deep reddish colour or vermilion, and a reverse of gold.

Banksia integrifolia (*Novice*).—This plant is frequently known as the Australian Honeysuckle, and is especially noteworthy as a free-growing and floriferous plant, which recommendations are not possessed by all its

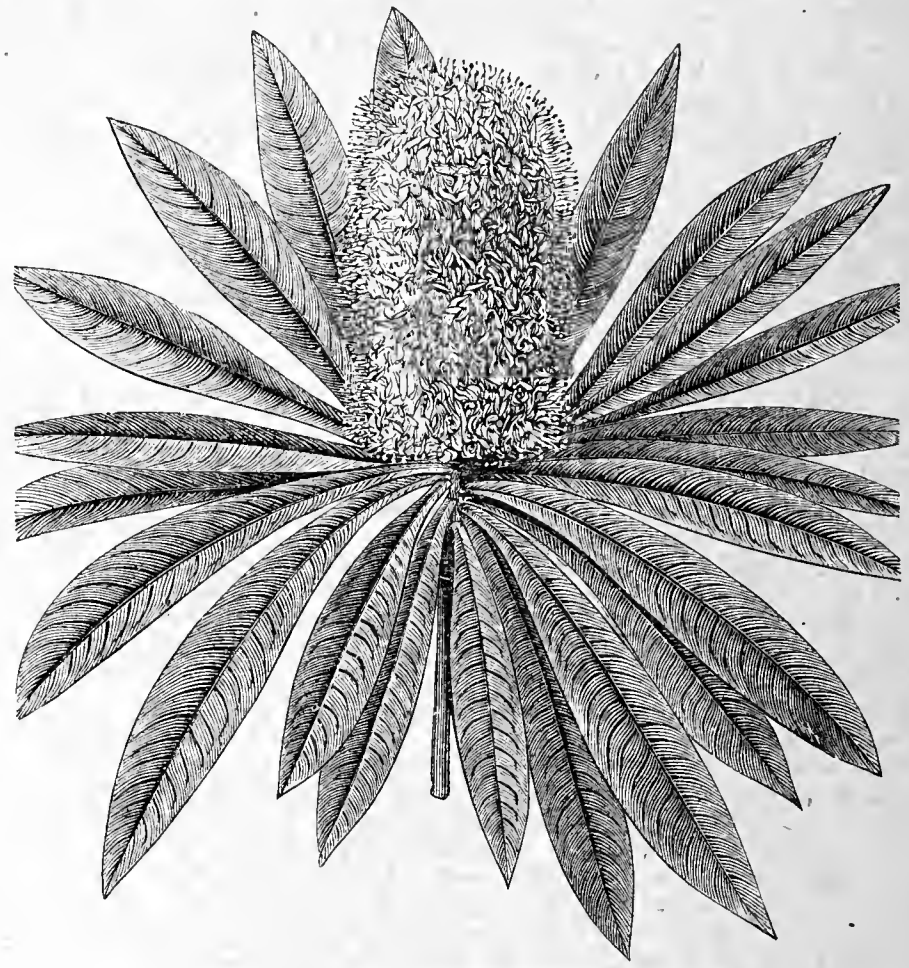

Fig. 70.—Banksia integrifolia (*reduced*).

allies. The popular name appears somewhat far-fetched, as are many other popular names; but it does not refer to the habit of the plant as might be supposed, but to the quantity of nectar secreted in the flowers. Banksia integrifolia (fig. 70) is a shrubby plant, usually of moderate size in cultivation, but attaining much greater dimensions in its native land, where some of its near relatives rise to a height of 50 feet. The flowers are yellowish in a cylindrical head at the end of the branches. The leaves are narrow and undivided, dark green, and firm in texture. The plant succeeds in light turfy loam and peat, and requires only the temperature of a greenhouse or conservatory, supplying water carefully when not in flower.

Grafting Seedling Orange Plants (*Dorset*).—Budding is the better practice, operating in August, and placing the worked plants under a hand-light. In the course of a month it will be observable if the buds have taken. They must then be untied, and the plants allowed to remain in the greenhouse all the winter. In the spring cut off the heads about 3 inches above the buds. Budding may also be done in the spring, or side grafting then performed; but it is often unsatisfactory. The mode is a modification of the whip, the stock being cut down to about 3 inches above where the scion is to be put on, and the graft (ripened wood of the preceding year, with a portion of two-year-old wood) having 3 inches of it left below the splicing for placing in a bottle containing rain water. This keeps it fresh until the stock and scion have "knit" together. Just before the trees from which the scions are taken start into growth is the proper time to graft; the stocks, being young, will be forwarder, and all the better on that account. Keep the ends of the attached grafts in water until the scions commence growing freely, and the junction is complete. In the autumn or late summer the part of the scion below the union can be cut off neatly, also the snag of the stock above the junction. Budded trees will require "snagging" in like manner.

Chrysanthemum Leaves Diseased (*Inquirer*).—The leaves are infested by the Spot fungus (Cylindrosporium chrysanthemi). The mycelium of the Spot fungus takes possession of the tissue of the leaf, which becomes brown, and ultimately black, withers and dries up. Finally outgrowths appear of an altogether different character—to wit, Botrytis chrysanthemi, and in the dead-leaf tissues or on them small black bodies are

formed, which tide the fungus over the winter or resting season of the host plant. You will thus see that early treatment is the only chance of successfully combating the enemy, which unfortunately often gets hold of the plants before being noticed. Dusting them early and occasionally on the under side of the leaves with anti-blight, fostite, or other advertised fungicides in powder containing sulphate of copper prevents the spreading to the parasite. Another precaution is plenty of air and light during the growing season, as well as after housing the plants, so as to harden the tissues and render them more disease resistant. The young leaves are very pale, or rather yellow, in colour, indicating deficiency of available iron in the soil, and the growth so relatively soft that the use of silicate manures could scarcely fail to harden the tissues and render them better able to contend with the fungus.

Neat Hedge Plant—Shrubs for Chalk (*E. B.*).—Austrian Briar Roses certainly flower the best when but little pruned. The closest Rose hedge is made by the old Scotch Rose, Rosa spinosissima, which produces small compact flowers abundantly. It is rather slow in growth. The Sweet Briar, Rosa rubiginosa, forms a good hedge and bears cutting well. If you want an evergreen, Box, Buxus sempervirens, does splendidly on the chalk. It can be cut into any form, and kept any width or height. Of shrubs, the following grow well on chalk soil:—Berberis aquifolium, B. Darwini, B. Nuberti, B. vulgaris and var. purpurea. Buddleia globosa (requires shelter); Calycanthus floridus, Ceanothus azureus (requires shelter or a wall); common and Portugal Laurels, Cercis siliquastrum, Rock Roses, Cistus species, require shelter; Cotoneaster microphylla, C. Simonsi, Deutzia crenata flore-pleno, Escallonia macrantha, in shelter; Euonymus japonicus vars., Garrya elliptica, Hypericum calycinum, Kerria japonica flore-pleno, Lavender, Leycesteria formosa, Ligustrum coriaceum, L. lucidum, Magnolia glauca, Philadelphus coronarius, P. Gordoniana, P. grandiflorus, Phyllyrea buxifolia, Pyrus japonica, Rhus Cotinus, R. typhina, Ribes aureum, R. album, R. sanguineum, Spartium junceum, Spiræa ariæfolia, S. callosa, S. bella, S. Lindleyana, S. japonica, Viburnum Opulus, V. Tinus, Weigela amabilis, and W. rosea.

Names of Fruits.—*Notice.*—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. *In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing.* The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. *They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state.* (*A. W.*).—1, Marie Louise; 2, rotten; 3, Louise Bonne of Jersey; 4, Boston Russet; 5, specimen deformed, send better one. (*W. D.*).—1, Durondeau; 2, Beurré de Capiaumont; 3, Doyenné Boussoch; 4, Marie Louise d'Uccle; 5, Calville Blanche d'Hiver; 6, Melon Apple. (*R. P.*).—1, Josephine de Malines; 2, Beurré Hardy; 3, Bergamotte Bufo. (*C. F. B.*).—1, Old Nonpareil; 2, Scarlet Winter Pearmain; 3, King of the Pippins. (*H. & R.*).—7, Perhaps Alfriston; 8, Cox's Pomona; 10, Melon Apple; 11, Beauty of Kent; 19, Calville Blanche d'Hiver; 23, London Pippin. The others are probably local seedlings, the small ones worthless, the large promising. See rule as to number of fruits to send for naming.

Names of Plants.—We only undertake to name *species* of plants, not varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*F. R.*).—1, Berberis Darwini; 2, Jasminum nudiflorum; 3, Skimmia japonica. (*D. S. S.*).—1, Euonymus europæus; 2, Viburnum Lantana; 3, Justicia flavicoma.

EDITORIAL NOTICE.—It is particularly desired that all communications, parcels, catalogues, and newspapers intended for the EDITOR, be sent direct to 8, ROSE HILL ROAD, WANDSWORTH, S.W.

COVENT GARDEN MARKET.—NOV. 10TH.

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6 0	to 36 0	Ficus elastica, each... ...	1 0	to 7 0
Aspidistra, doz.	18 0	36 0	Foliage plants, var., each	1 0	5 0
Aspidistra, specimen ...	5 0	10 6	Lilium Harrisi, doz.... ...	12 0	18 0
Chrysanthemums, doz. ...	4 0	9 0	Lycopodiums, doz.	3 0	4 0
,, ,, single plants	1 6	2 0	Marguerite Daisy, doz. ...	4 0	9 0
Dracæna, var., doz.... ...	12 0	30 0	Mignonette, doz.	4 0	6 0
Dracæna viridis, doz. ...	9 0	18 0	Myrtles, doz.	6 0	9 0
Euonymus, var., doz. ...	6 0	18 0	Palms, in var., each... ...	1 0	15 0
Evergreeens, var., doz. ...	4 0	18 0	,, specimens	21 0	63 0
Ferns, var., doz.	4 0	18 0	Pelargoniums, scarlet, doz.	2 0	4 0
Ferns, small, 100	4 0	6 0			

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms ...	3 0	to 5 0	Maidenhair Fern, doz. bnchs.	4 0	to 8 0
Asparagus Fern, bunch ...	1 0	2 6	Mignonette, doz. bnchs. ...	2 0	4 0
Bouvardias, bunch	0 6	0 8	Narciss, white (French) dozen bunches	2 6	4 0
Carnations, 12 blooms ...	1 0	3 0	Orchids, var., doz. blooms	1 6	12 0
,, doz. bnchs. ...	0 6	1 0	Pelargoniums, doz. bnchs.	4 0	6 0
Chrysanthemums, 12 bnchs.	2 0	6 0	Roses (indoor), doz.... ...	0 6	1 0
,, ,, 12 blooms	0 6	2 6	,, Tea, white, doz. ...	1 0	2 0
Eucharis, doz.	4 0	6 0	,, Yellow, doz. (Niels)	1 6	4 0
Gardenias, doz.	1 6	2 0	,, Red, doz. blooms ...	0 9	1 0
Geranium, scarlet, doz. bnchs.	4 0	6 0	,, Safrano (English) doz.	1 0	2 0
Lilac (French), bunch ...	3 0	5 0	,, Pink, doz.	1 0	2 6
Lilium lancifolium, short, per 12 blooms	1 0	1 6	,, outdoor, doz. bnchs.	3 0	6 0
Lilium longiflorum, 12 blooms	4 0	6 0	Smilax, bunch	1 6	2 6
Lily of the Valley, 12 sprays	1 0	2 0	Tuberoses, 12 blooms ...	0 3	0 4
Marguerites, doz. bnchs....	2 0	3 0	Violets, doz. bnchs.	1 6	2 0
			,, Parme (French), bch.	2 6	3 6

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	1 0	to 3 0	Grapes, lb....	0 8	to 2 0
Cobs	22 6	24 0	Lemons, case	11 0	14 0
Filberts, 100 lbs.	0 0	0 0	St. Michael's Pines, each	3 0	8 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, ½ sieve	0 0	0 0	Onions, bushel	3 6	4 0
Beet, Red, doz....	1 0	0 0	Parsley, doz. bnchs.... ...	2 0	3 0
Carrots, bunch	0 3	0 4	Parsnips, doz.	1 0	0 0
Cauliflowers, doz.	2 0	3 0	Potatoes, cwt.	2 0	4 0
Celery, bundle	1 0	0 0	Salsafy, bundle...	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Seakale, basket...	1 6	1 9
Cucumbers...	0 4	0 8	Scorzonera, bundle	1 6	0 0
Endive, doz.	1 3	1 6	Shallots, lb.	0 3	0 4
Herbs, bunch	0 3	0 0	Spinach, pad	0 0	0 0
Leeks, bunch	0 2	0 0	Sprouts, ½ sieve...	1 6	1 9
Lettuce, doz.	1 3	0 0	Tomatoes, lb.	0 4	0 0
Mushrooms, lb.	0 6	0 8	Turnips, bunch...	0 3	0 0

A GLANCE AT ISLINGTON.

AGAIN the Dairy Show is a thing of the past, and again it may be counted a success. The entries were beyond former years, and 184 cows were entered for the milking and butter tests. This appears to us to be the real heart of the exhibition, if one may so speak. The competition is so severe, and the tests are severe, too. We would like to see a few more fresh names on the exhibitors' list—a few more humble farmers, men whose daily bread depends so much on the milking value of their herds. We see the same names repeated, and we feel sure there are other breeders in the United Kingdom who would not be disgraced even at Islington. "Faint heart never won fair lady," and there is nothing like a bit of competition to find out both strong and weak points in one's own belongings. We might observe that the number of cows entered for these tests was in 1892 sixty-two, as against 184 in this year of Jubilee.

We think there might have been more than two Shorthorn bulls present with advantage, for after all we cannot expect good milking qualities in our cows and heifers when the sire comes of a beef rather than a dairy strain. The Jerseys were a strong class. Nothing succeeds like success; and they have done so grandly in all butter tests and dairy competitions. Wisely, too, the males were well represented. The Guernseys were uniformly good, and several winners during this present season were there. We wish we could see more Red Polls; they ought to be popular, for after their milking days they can render a good account to the butcher, which is more than may be said of their Island sisters. Why only four Ayrshires? Was it so far from home? There are plenty of good ones at home.

Much has been said of late as to the value of what we might term "pony cattle," Kerries and Dexters, but at present they do not appear to have achieved much popularity. At any rate, they are not the

stock of "masses," though some of the "classes" appear to have taken them up. They are pretty things, and to our mind look well, almost as well in a park as deer.

Goats have a class to themselves, and as their milk is so often highly commended for the delicate baby, it is well that they should be improved in their degree as well as cows. We should fancy, though, in these (coming) days of Pasteurised and humanised milk there would not be such a demand for that of the goat. From milk to cheese is an easy transition, and now Scotland actually dare compete with England in the making of Cheddars. What indeed is in a name? Nothing, it appears. Cheddar from Scotland! and no Stilton from Mr. Nuttall. Echo answers, Why? The Reading Institute, managed by Mr. Miles Benson, sent a good exhibit of Stilton, Cheddar, Cheshire, Wensleydale, Caerphilly, and several foreign varieties. Much butter! and beautifully displayed on white slabs on growing grass; tempting to the eye, tempting to the taste; all so good and so improved!

We are not quite sure that we do not prefer a slice off the lb. to an ornamental device, but we are old-fashioned and behind the times. The artists (or should we not rather say artistes?) are most skilful, and we wish their work could be preserved in something less perishable than butter. We made a remark last year, and we make it again with greater emphasis, Why should people still want teaching by example the excellence of skim milk bread? It speaks for itself, and we are sure that in many and many a farm house it is always to be found; indeed, we know bread that if it could speak could confess to unskimmed milk. What can be more nutritrious and yet so cheap? Cheap in fact, and cheap relatively.

One writer rather cavils at the admission of honey to a dairy show. Why, to our thinking, there could be no more suitable place. Bible and hymn-book both combine the two when a Land of Promise is mentioned. One without the other! The idea is incongruous.

Now we come to man with his many inventions—labour saving, health promoting. Is the day of the milk-cart over? No less than three makers showed tricycles adapted for the milk delivery trade—a horse and his keep saved. That is a step in the right direction. Then a cheap apparatus for sterilising milk in a small way. We have not all good keeping cellars or dairies, and milk is such a perishable article that we must hail any good method which prevents waste.

We mentioned lately the milk filtering in Swedish creameries, where the milk passes upwards through fine granite. We saw the residuum in the granite, and gave an anxious thought to our own methods of straining. A new milk filter is brought out where the milk passes upwards through swansdown linen (or calico?). This material is easily cleaned, easily renewed, effective, and very cheap. Improved churns and separators on every hand and at all prices.

Our principal nurserymen were there with collections of grasses, roots, and seeds; all the patent medicine makers and all the special food makers, and we really owe them a great debt of gratitude. Few of us can afford to dispense with a box of handy remedies, and all need at times supplemental cattle food.

We should not like to have had to judge in the butter making contests, but the judging is reduced to a science, and, if we mistake not, is done on the same lines as Chrysanthemum judging—viz., by points. The Judges are guided thus:—

Condition of butter in churn	10
Condition of butter on worker	10
Making up	20
Smartness and cleanliness	20
Colour of butter	5
Texture	20
Freedom from moisture	15
	100

And they cannot get very far wrong, but for all that 180 entries take a good deal of going through.

As is only right, the champion butter-making prize went to a lady, a member of a talented family, Miss Baynes. Last year she was third, her sister and brother, respectively, first and second. Butter making must run in that family. Miss Baynes looks young; she possibly has a future before her.

Well, we have only mentioned (and that very briefly) the leading features of the show. It is a grand object lesson, and worthy of all support. It has directly and indirectly put a stop to much adulteration, and while condemning the dishonest dealer by bringing his malpractices to light, supports and upholds the man who serves his customers with the best and purest articles possible.

Flax Growing.

The British farmer, to work prosperously, requires a good many strings to his bow. Whether one of the strings is to be Flax, is a question at present. A little book by Major Fraser* contains clear and lucid explanations of sowing, pulling, and preparing Flax for the market. The only question seems to be, Shall we find a market when we have done our part? Those interested in Flax culture should obtain a copy of this pamphlet.

WORK ON THE HOME FARM.

We have secured the last Potato, and never did we put a crop away in better condition or have a finer season for the work. As far as we know not one Potato has been touched by frost, which we think must be a record occurrence.

If farm horses could speak ours must have been heard congratulating each other on the fine autumn, for last year we were carting Potatoes off with the headland's axle deep in mud, whereas this year they have been as firm and dry as a high road.

Mangold must be taken up and stored now without further delay. The crop has increased quite 50 per cent. the last three weeks, and is now above the average. Farmers who hurriedly took up their Mangold in mid-October must have lost a very considerable weight by not waiting. Swedes and Turnips which came up at the proper season have increased enormously of late, and are quite an average crop. Sheep are all well on Turnips, and seem to be very healthy, cases of loss being rare. Lambs are better without too much forcing food until Christmas is turned, linseed cake and a bit of hay or Clover being the best foods to give with Turnips in the autumn.

Wheat will continue to be sown until December comes in, and this later sown often beats the earlier on weak soil, but it is very much more liable to damage by birds, especially larks. The best preventive is to use small seed, for this more quickly loses, or rather uses up, the store of starch it contains when sown, and it is that which tempts the lark to dig it up.

Large flocks of larks have lately arrived from abroad, and it is these foreign immigrants which do us the damage, home-bred birds not being sufficiently numerous. Some people dip torches in paraffin, and when lighted wave them about near the ground just before dark, and this is said to act very well in keeping the birds off during the night.

We hear further accounts of damage to stack roofs. It is surely penny wise and pound foolish to make haste to save the corn, and then not to take proper care of it when the goal has been reached.

METEOROLOGICAL OBSERVATIONS.

Camden Square, London.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

Date. 1897. October and November.	9 A.M. Barometer at 32° and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp of soil at 1 foot.	In the Day. Shade Temperature. Max.	In the Day. Shade Temperature. Min.	In the Day. Radiation-Temperature. In Sun.	In the Day. Radiation-Temperature. On Grass.	Rain.
	Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Inchs.
Sunday 31	30·287	44·7	44·6	N.	46·0	56·1	38·8	67·0	32·0	0·011
Monday 1	30·390	44·1	44·1	N.E.	46·0	56·4	40·9	76·2	32·0	0·010
Tuesday 2	30·328	44·8	42·7	E.	46·4	51·0	43·4	75·1	39·3	—
Wednesday .. 3	30·268	45·9	43·4	N.E.	46·2	51·1	44·6	75·9	37·1	—
Thursday 4	30·218	43·7	41·6	N.E.	46·1	45·1	42·7	50·2	38·6	—
Friday 5	30·322	41·2	38·6	N.	45·8	46·1	39·9	50·1	39·8	—
Saturday .. . 6	30·366	46·1	45·1	N.	45·6	48·3	41·3	65·6	40·4	0·013
	30·311	44·4	42·9		46·0	50·6	41·7	65·7	37·0	0·033

REMARKS.

31st.—Foggy morning; sunny for two or three hours at midday; fair night.
1st.—Fog till 10 a.m.; sunny from 10.15 a.m. to sunset; overcast night.
2nd.—Cloudy early; bright sun from 11.15 a.m. to sunset; clear night.
3rd.—Fair day, with much bright sunshine.
4th.—Fair, but sunless
5th.—Fair, but sunless.
6th.—Fair early, occasional faint sun from 11 a.m. to 4 p.m.
Another dry week, temperature near the average.—G. J. Symons.

* Published at the "Cable" Office, 30, Fleet Street, 3d.

Journal of Horticulture.

THURSDAY, NOVEMBER 18, 1897.

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A FLOWERY NOVEMBER.

SELDOM does it happen that we have so many outdoor flowers at this season. Since last we wrote it has been a time of exceptional mildness and calm, and thus the life of the flowers has been preserved. We cannot speak dirge-like yet, though the time of mourning cannot be far off now. The skies are dull and grey, and it is only rarely that a faint smile of sunshine gilds the dying leaves and lights up the colours of the flowers. Yet though there is little sun the air is calm, and no heavy rains hasten the fall of the leaf and the dropping of the bright petal. The leaf falls, the petal decays, but the fall is slow and the decay—unwelcome ever—is a tardy one. Still buds open, though November's first week has gone, and the unexpanded bloom misses the touch of the sunlight. Still flowers remain in blow; still leaves are ruddy or golden with their dying hues.

It is the night of the gardener's time, but though night by our accounting it is to appearance only the time of the first of the gloaming. As we love the evening hours of summer when the Œnotheras open their cups to the coming of the twilight, so do we love to look at the flowers of the time. They are as the scant, silvery locks; the furrowed faces of the aged we care for; they are beautiful with the glory of the past, the memories of more joyous times. Can we pass on and leave these things unnoticed—their beauties unrecorded, and their cheering sanctifying influences hoarded within ourselves? Nay, even if the tale be badly told, the record blurred and imperfect, we must essay it, feeling the while that he who reads must read between the lines, and see there concealed that beauty—that pathetic beauty—of which words can give no satisfying measure.

As we look upon these Marigolds we see again the glories of the summer; yet, though they open not in full to the cold approaches of November sunshine, they have lost no part of their golden or orange colouring, no power to light up things around. There are Godetias yet with cups of purple, of blush, and of rose. No golden land is this where skies are bright and clear, yet still they give us their beauty of colour and of form.

The Virginian Creepers have nearly all lost

their leaves, and where only a week or so ago sheets of blood red covered the wall and clung to the trellis above, there is now only a network of grey branches. One Ampelopsis alone still keeps its leaves. This is A. Hoggi, a self-clinger, with large leaves, but these turn not crimson but yellow flushed with red. They are like some saffron sunsets we see. Close by Rose Madame Isaac Pereire, climbing up the trellis pillar, is about to yield its last petals to the all-powerful spirit of the year's departing time. Finer blooms we could hardly desire than those given in October, their colouring far more pleasing than that of summer's prime.

Overlooking the Lily pool there are still Tropæolums in bloom. Some of the older leaves were crippled by frost; but those undeveloped at the cold time have now expanded, and are fresh as in July, and the flowers themselves are as gay and bright as in the beginning of September. Near by are Sweet Peas still "winged for flight," and crown and tricolor Chrysanthemums, with Scabiouses and other annual flowers; while in the rock garden the little "Diamond Flower" of our cousins across the Atlantic, but known to botanists as Ionopsidium acaule, shines at the base of the stones. A wonderful posy can be gathered from the annuals alone.

There are also some late-planted Gladioli, and were it not that their spikes of gay blooms are still so effective in the garden they would have been cut before this to open in water in the house. Patches of Crocus longiflorus look bright on the rockwork terraces or peeping above a groundwork of greenery in the border. They are kept in countenance by some of their sisters, such as a few lingering flowers of Crocus speciosus and a few others, noteworthy among them being Crocus lævigatus, a pretty flower which opens to a comparatively small display of sunlight. There are yet a few of the double Meadow Saffrons spoken of before, and they please nearly everyone with their soft tinted rose or rosy purple or white blooms. A few single Colchicums appear from time to time as well, but their blooming time is soon over now.

In one of the borders a late plant of the pretty annual Poppy, Papaver umbrosum, is well nigh as bright in colouring as in the height of the Poppy time. Its scarlet black-based petals are, however, less fugacious now than in the heyday of summer, and stand long on the plant. Here and there, in out-of-the-way corners, the Welsh Poppy, Meconopsis cambrica, gives a few of its clear lemon-yellow flowers; and another Poppywort, Stylophorum diphyllum, has a bud ready to open, to give us a companion bit of colour. Flowers of Somnus we call them, but the God of Sleep has for once forgotten that it is time his plants were at rest for the year.

In a quiet corner Claytonia virginica makes a spreading carpet, with its fleshy green leaves and pale pink flowers. It is a "weed" here now, but one which is more than tolerated for its use as a groundwork for other plants, as well as for its own quiet beauty. The earlier Michaelmas Daisies have passed away, but the later Starworts are in beauty yet. Sprays of little starry blossoms like those of Aster cordifolius Diana, or larger flowers like those of Aster grandiflorus, await us, if we wish to adorn the house at the expense of the garden. Each spray or bloom we cut may well be, as Emerson says, "loaded with a thought" of Nature's gifts, to soothe us in the sad autumn days. Pretty, too, is a clump of Plumbago Larpentæ crowning a rockery, its blue flowers harmonising well with the bright tints of its leaves.

There linger other flowers still, posthumous children of the autumn's warmth. They flower in company with Chrysanthemums, one or two Christmas Roses, and the Primroses and other spring flowers which the mild time has coaxed prematurely into the light of day. These seem to look askance at the survivors of the summer's brave array. Hardy Fuchsias, Hydrangeas, Campanulas, Androsaces do not look fit company for the children of the spring.

Yet, after all, we love them. They all help us over the dull time, and tell us even better than our recollections alone of that time when the garden was, and will again be, full of the glory of blossom and leaf, bathed in the sunlight and redolent with the sweet odours of the flowers.—S. Arnott.

PRUNING VINES.

Pruning of all descriptions seems to have had a great fascination for gardeners from time immemorial, and to be a deft knifesman was, at one time, considered a great accomplishment for any gardener. There can be no doubt that many old gardeners were expert workmen in the matter of making clean short cuts, and in arranging the wood with mathematical precision over the surface of fruit trees and Vines. The great weakness of the system they pursued was that they held too closely to hard-and-fast rules under circumstances which differed greatly. We of the present day, on the other hand, go perhaps to the opposite extreme, and in many instances follow no particular system with such persistency as did those of old; but, often grasping certain principles which underlie the work, each man strikes out a course for himself, and it must, I think, be admitted that, on the whole, highly satisfactory results have been obtained under very different methods. Thus it will ever be as long as the brain is trained to guide the hands. Alter the conditions, and let the brain withhold its guiding power, it is then only a matter of time as to when disaster will come.

Vines have, perhaps, not suffered so much as fruit trees from a reckless use of the knife, because, if the roots are vigorous and plentiful, and the foliage kept free from insects, a fair share of success may be obtained under almost any system of pruning. Still, there are degrees of excellence, and all should strive to obtain the best results. Market gardeners who plant their Vines closely and root them out before they become very old, generally prune closely, and have every reason to be satisfied with the results. Private gardeners are somewhat differently situated, as their employers often do not care to destroy any Vines as long as there is the slightest prospect of bringing them into a satisfactory condition without resorting to radical measures, and we all know that Vines must be extremely old, and in a most deplorable condition, before they can be termed absolutely worn out, though of course it is often an open question whether or not replanting is the best course to pursue.

When dealing with old Vines which have become weak and debilitated, a surprising improvement may be made in one season by ignoring all hard-and-fast methods of pruning, and leaving plenty of young wood, so as to be able to have a number of young shoots to select from at disbudding time. The basal buds on the shoots which such Vines produce are often very poor, and to prune to them means a miserable crop, while on the other hand the shoots are simply shortened to the best bud to be found, no matter whether it is 2 inches or 2 feet from the base of the shoot, a fair crop may usually be secured. I do not say that any system of pruning will make up for deficient root action or the evils of an unsuitable border. These are matters which should also have proper attention. By following the plan above advocated at disbudding time the shoot carrying the most promising bunch can be retained, and the others, with the exception of one at the base of the shoot, be removed. This lower shoot should be encouraged to grow as strongly as possible by removing the buds, should any show, then the chances are that the following year the old shoot can be removed, and the basal shoot be relied upon to produce a bunch of fair size.

In dealing with Vines in a sound, healthy condition the character of the crop may be greatly varied by the method of pruning adopted, and before this is determined it must be distinctly understood that close pruning means comparatively small bunches, except in the case of young Vines. Therefore, when Grapes are grown for home use alone, and large bunches are not particularly prized, cut back to one or two eyes, and fairly good bunches will result, such as are extremely useful for keeping up a continuous supply. One great point in favour of medium-sized bunches is they are generally cut and used while in a perfectly fresh state, while larger bunches are not unfrequently dished up many times in succession till their appearance is not inviting.

Lady Downe's is not nearly so much grown as formerly, for although it is a splendid keeper, its tough skin seems to be against it, and if closely pruned it frequently produces too many small bunches. Gros Colman and Alicante, on the other hand, usually give good—and often large—bunches when close pruning is regularly practised. I have lately seen another remarkably fine late Grape, which must inevitably come to the front, and be largely grown. It is named Royal Leamington. Mr. Crump of Leamington has a house entirely filled with it, and the bunches on closely pruned Vines are all large and shapely, with good perfectly coloured berries.

Gros Guillaume does not continue satisfactory for long if close pruning and stopping are practised. Under that system of procedure the berries are frequently quite small, and the crop often scanty, whereas if long spur pruning is adopted, large bunches are produced annually, if the spurs are kept from 18 inches to 2 feet apart. In many instances in which Muscats are not satisfactory, I am convinced from past experience that they may be greatly improved by practising either the long rod or long spur system. There are many good cultivators whom I know do not agree with the plan, as they contend that by close pruning they kept their Vines in good condition for a

number of years; but as a counterblast to that I can point to others who have for years grown and still grow, some of the finest Muscats to be seen in this country by leaving plenty of long shoots at pruning time, and allowing shoots to ramble freely in summer. To those who are quite satisfied with size, finish, and freedom from shanking in their Muscats, I say, Keep to your present practice; and to those who are not satisfied, I have no hesitation in affirming that improvement may be quickly effected by pruning less closely, so as to have several shoots to select from.

An alternative plan in the case of old Vines is to run up young canes, and cut out the old ones. Gnarled old spurs are then done away with, and close pruning will often be satisfactory for a few years. This practice of training up young rods to rejuvenate old Vines is a good one if properly carried out, but I often notice instances where it is only partially practised, and it does not then seem to be satisfactory. Let me make my meaning clear on this point. We will suppose that a strong cane has been taken up from the base of an old Vine; this reaches the top of the rafter in one season, and two-thirds of it is cut away at pruning time, the rod is allowed to carry no fruit the following season, then in the autumn the old rod ought to be entirely removed, and the young one be depended upon entirely to produce the crop. Instead of doing this there is a tendency among many growers to keep the old rod lingering on for several years; but it does little good, because the young rod takes away the vitality from the old one. To put the matter plainly, as I see it, it stands thus: Each Vine must have an old rod, or a young one; the two together will not succeed when they draw their supply of sap from the same set of roots.

I think it is generally acknowledged that closely pruned Vines, as a rule, produce Grapes which colour with greater certainty than do those grown on Vines less closely pruned; but with continual close pruning the size of the bunches produced dwindles down to a low point. It must also be remembered that large bunches do not colour so well as small ones under whatever system of pruning they are produced; still, some cultivators manage to colour enormous bunches perfectly. This shows the highest degree of excellence, and is worth striving to attain.—H. D.

HARMFUL AND HARMLESS GARDEN MOTHS.—11.

Curious are some of Nature's diversities. We might have thought the November moth (Oporabia dilutata), which emerges at the same season as do several of the Hybernias, would have had on their pattern the female wingless, but she is equipped like her mate. This is one of the species that I have occasionally seen upon garden palings on a dull November day in the southern suburbs of London. The ample wings of grey, crossed by smoky waved lines, look appropriate to the season. But it also occurs throughout the British Islands. Its caterpillar is not abundant enough to be harmful, though we find it on a variety of trees in shrubberies about June, a stout-bodied creature, prettily marked with purple upon bluish green.

Some of our southern collectors of insects write to friends in the north to get them specimens of the mountain carpet (Larentia cœsiata) should they see any about midsummer by roadsides or on garden flowers, since it is common, not only in mountainous districts, but wherever the Bilberry or Whortleberry grows freely. The moth has nothing very particular about it, being grey, with a dark bar and brown lines. The caterpillar from which it is produced, though small, is singularly beautiful, showing how humble objects, almost unnoticed, are often adorned. It is found upon the Bilberry in April and May, resting on the stalk, head downwards during the day, and feeding after dusk. What is most remarkable in its appearance is a series of seven V-shaped markings along the middle of the back. Each side of the V is a rich brown, the centre of rosy hue; and at the point of each V a fawn stripe enters; outside these markings are short white lines on the olive-green general colour, the body being velvety. Having attained its full size the caterpillar makes a slight cocoon amongst the leaves.

Another moth in the same genus, L. pectinetaria, is an occasional visitant to gardens in which the fragrant Woodruff is allowed to form clumps, since the caterpillar can eat this plant, though its more frequent food is one or other of the common Bedstraws of our hedgerows. By day the moth sits with expanded wings on walls or palings, receiving the English name of the green carpet from the ground colour, which is a beautiful tint of green, not so apt to fade as the lighter hue of the emerald moths. Across the forewings is a band of black, edged by a delicate white line. The caterpillar has, like its relative just mentioned, some V-shaped markings of red upon a dingy brown, but it is not nearly as handsome. "One of the laziest caterpillars I ever knew," says an entomologist; "most of its time is passed lying sluggishly at the roots of the food plant, rousing up now and then to eat a little." Some pretty and rather small geometer moths allied to these are called the rivulets, because they have upon the wings an irregular line of pure white, which fancy has compared to the windings of a stream. Emmelesia affinitata has the dusky wings crossed by a double rivulet line, also near the margin a row of white spots. It flies during June, occurring chiefly in southern counties. Later on the caterpillar is found feeding on the seeds of some species of Lychnis or Campion, usually concealed from view; when full-fed it descends to spin a compact cocoon.

The various species of Honeysuckle are rather favourites with insects, and they attract the moths called Lobophoras into our gardens, since they furnish food to some of the caterpillars; others feed on Sallow, Privet, and even Ivy. They are somewhat notable moths, as, in several species, the male insect has a sort of lobe, or appendage, to the hind wings, and the caterpillars, small though they are, display some singularities in colour and markings, being also furnished with two curious points at the tail. Evidently the Latin name is explained by the lobes, which probably gave rise to the odd English one of "Seraphim," applied to a couple of the species, because they seem to possess six wings. Commonest is L. hexapterata, of pale grey, with smoky lines, and other marks which look like black arrowheads; the under wings are pure white, also the lobes. It is amongst the many that feed on Sallows and Willows while in the caterpillar stage, when it is of a delicate green, having yellow points at both head and tail. The two species that are bred upon the Honeysuckle are not abundant enough to disfigure the plant. The moths fly in April, braving the showers and frosts of that changeful month.

One of them, the barred tooth-striped (L. polycommata), though of moderate size, is a very handsome moth of varied colours; its companion species, the early tooth-striped (L. lobulata), is grey-and-black. In appearance, the caterpillars of the two nearly resemble each other; they are of some shade of green, marked with white, and have an odd habit, when reposing on a twig, of bending down the head so that it cannot be seen, being pressed against the front legs, which are crowded together. They are full-fed in June. The caterpillar of L. vivetata is many-coloured; it occurs upon Privet, Gueldres Rose, and Ivy, and is said even to be able to masticate the tough and prickly leaves of Holly.

Most of the geometrine moths, of which we have been examining some garden species, are not remarkable for loftiness or speed of flight, but there are exceptions, as in the little group of three that are called the highflyers. A gardener has no objection to see them pass over, though they are not parents of destructive caterpillars, but to the collector of insects it is annoying when one speeds along above at a height which is beyond the reach of his net. Still, all these moths are sometimes tempted to descend and taste the sweets of summer flowers. Indeed, as the caterpillar of the July highflyer often feeds amongst Heather the female moths must come down to deposit eggs, unless they drop them on the wing, which is unlikely. The other two species of the genus Hypsipetes have caterpillars which chiefly feed on Alder and Sallow, stout-bodied creatures, that hide by day, perhaps from fear of birds, and eat after sunset.

We have a largish group of moths, also geometers, which are known as the carpets, because the majority of them exhibit markings which were thought to resemble the patterns or designs of these household articles. Carpets nowadays are of such varied styles that it may be doubtful to some whether the moths thus named are particularly carpet-like; a few may be. The appearance of several species about gardens is appropriate sometimes, for in these we may also see carpet bedding. It is, moreover, the fact that few of the carpet moths do any perceptible harm to plants or trees. Probably the one we must give the pre-eminence to is the beautiful carpet (Melanthia albicillata), which Mr. Beauchamp says is almost without a rival for "pure colouring and delicacy of design," the ground colour being creamy white, upon which are brown blotches and lines. This insect occurs in many English counties and two or three Irish ones. Its caterpillar is also handsome, of a velvety deep green, marked with yellow and white. It has been taken upon the Raspberry in gardens, and has an odd way of swaying its head to and fro if annoyed, while it is held at an angle with the body. Now and then it eats the Bramble.

The blue-bordered carpet (Melanthia rubiginata) flies during July about orchards and gardens. The white wings display a bluish border, and a blotch of black. This pretty insect is bred from a caterpillar which feeds on the Damson, Bullace, and other varieties of Plum, in May or June, but not plentifully. It is long and slender, of various shades of green. A rather mischievous species bears the name of the garden carpet (M. fluctuata); there are two broods most seasons. The moth has rather dull colours of grey and brown. In the caterpillar we find livelier tints—red and white, with black and brown; it exhibits a series of what has been called arrowhead markings. We may detect it on Cabbages and other Brassicaceous plants; amongst garden flowers it attacks Arabis and Tropæolum. The spring brood is out during May, and a second batch of caterpillars in September. Primroses in gardens and woods supply food to the caterpillar of the silver-ground carpet, but it is seldom noticed, as it keeps near the earth in early spring. The moth is on the wing about midsummer.—Entomologist.

ROSES

Rose Seeds.

Will any raiser of Roses from seed kindly state the best method of treatment? I have tried sowing in heat, and in the open ground, but have not got many seeds to germinate. Is it better to sow them as soon as gathered, or to keep them until the spring? and if the latter plan is the better which is the best way to keep them? As I have a quantity of choice seed ripening I am anxious to know the best way of treating it.—W. H. Divers, *Belvoir Castle Gardens, Grantham.*

The Truth About Crimson Rambler.

As the original cultivator of the Rose on its introduction from Japan in the year 1878, I may say at once that the paragraph quoted by the Rev. Alan Cheales in your issue of 4th inst., page 429, is substantially correct. The Rose, along with a number of other plants, was purchased by Professor R. Smith for Mr. Jenner in the public gardens of Tokio. When it had been cultivated for a year or two in the gardens of Easter Duddingston Lodge, Mr. Jenner noticed its free-flowering character, and named it the Engincer, in honour of the Professor himself.

With regard to the name of the Rose, I may state that when the plants arrived at their destination each was encased in a curious, bowl-shaped pot, with a wooden label attached, and the native name of each plant inscribed thereon, but these names were never translated, otherwise we might now have had the Japanese name for this popular Rose. My experience of the flowering qualities of this Rose is that it does not do well on a wall, but much better in the open, as it seems to enjoy a full and free circulation of air.

Dr. Ramsay's remarks in an earlier issue of your paper as to this Rose having been in Mr. Jenner's garden "forty years ago" are not correct.—M. Chapman, *Torbrex Nursery, Stirling.*

Canker in Roses.

Several theories have been put forward from time to time as to the causes of and remedies for canker disease in Roses. I am convinced it is not soil alone, nor is it the stock Roses are worked on. We find it on Roses in widely different soils, on all of the many stocks, and even on plants growing on their own roots. It appears on roots and branches, under glass and in the open, on varieties of widely different growth and classes, and on the same when treated in varying forms as regards culture. For several years I have tried many ways of combatting this disease, and although in some few instances the plants certainly seem to have benefited, others so treated have not been improved in any respect.

As a rule canker is most troublesome among Maréchal Niel. It also attacks William Allen Richardson and other strong growers. It is found in the case of some Hybrid Perpetuals when worked on an uncongenial stock. Marie Verdier, Her Majesty, S. Reynolds Hole, and Captain Christy are examples of some which have a great objection to the Manetti in most soils; yet I have seen them doing well in more than one instance. These are only a few examples of its erratic and inexplicable attacks, and a few notes upon my efforts to combat the disease may be of interest.

It often happens that one plant out of many will develop canker with exceeding rapidity, and yet its near neighbours, under precisely similar conditions, are exempt. I have carefully lifted the attacked plant, and given that and the soil a thorough overhauling, without any result. Healthy plants on each side had no more or less swelling at the junction than the affected plant.

In one instance, several Maréchal Niels were side by side. An overflow drain from a cesspool ran from 3 to 4 feet deep in the soil. This was not made of the modern sanitary pipes, but the ordinary drain pipes used in agricultural draining. The roots of the Rose had penetrated the interstices and forced the pipes open, and the soil became heavily charged with a strong fertiliser. Many of the roots were quite dead, probably from undue saturation of so strong a liquid while dormant. The plant most affected developed canker very badly, but others escaped. A house of Maréchal Niels was forced hard, the plants being in pots and standing upon a turf bank. When we came to remove these they were found so strongly rooted through the drainage holes into the turf that it was decided to leave them, and a foot or so of more soil was placed around the pots, just covering the crown. The plants grew in a most luxuriant manner; there was promise of a grand crop, and buds were formed, when suddenly the whole of the plants' growth put on a most distressed look; leaves went brown or pale yellow, the buds fell, and not a dozen decent flowers were secured. We found the roots both above and below the drainage hole were one mass of canker, which, in this instance, was no doubt caused by constriction. The question is, Had we broken the pots and released the roots previously to adding more compost, would they have been attacked by canker?

A grand plant of William Allen Richardson has occupied a corner of a house since this variety was introduced; it is, in fact, our stock plant. Several years ago this developed canker very badly at the junction of the stock and Rose. I cut into this upon more than one occasion, rubbed fresh cow manure into it, added some light compost around the part, thinking it might perhaps take off on its own roots, as the first appearance of the disease looked much like a lump of callus formed above the soil. Now, although that plant still has a very large bunch of canker, it gives us a grand crop every spring and autumn. The soil is stiff and rather wet; the plant is upon the De la Grifferaie stock, and several hundreds of buds for working are taken from the plant every summer. In other cases, when W. A. Richardson has been attacked, I have known the plant die in a very short time.

It has been said canker is caused by undue interference with the balance of growth, and that cutting away growing shoots, or hard summer pruning, is a sure prelude to canker. I do not find it so, although, in several cases, plants so treated have been attacked during the same season. If it was a cause, how is it we find so many cases where Maréchal Niel—the Rose most affected by this disease—is annually treated upon the cutting down system, in order to get long rods for the following season's forcing, and yet do not find canker general?

Insects are given as a probable cause. That they aggravate the diseased part I fully believe. I have cut many scores of cankered protuberances open, and generally found a small insect in them, which, if not a species of the rhodites attacking our native Briars and causing rose galls, have a remarkably close resemblance in their larvæ stage. Insects are very fond of the sweet juices exuding from any injury to plants, and which, if undisturbed, would generally form healthy callus. I am inclined to the opinion that the constant irritation caused by the insects feeding upon these juices often tends to the more rapid development of canker.

We sometimes find a species of canker breaking out in little warty protuberances all over the branches of a Rose, and which in a short time so cripple the plant as to render it quite useless. Finally, I have proved that no form of canker is contagious in any way.—Practice.

ISLE OF WIGHT.

Macrocarpa, Ventnor.

Ventnor, one of the most picturesque and lovely places in the Garden Isle, contains many gardens where plants are grown exceedingly well, though it must be admitted that the climatic conditions are favourable to successful gardening. Whilst on a recent business visit I called at Macrocarpa, the residence of Miss Mitchell, and found that the horticultural department contained many things worthy of note. Mr. W. W. Sheath, the able gardener, who is ever energetic and pleasant, was busy getting his "Mums" into the conservatory, and he had a fine lot of plants with blooms fit for any exhibition. Amongst the most noteworthy I observed Matthew Hodgson, Edith Tabor, Mrs. Hume Long, C. H. Curtis, Eva Knowles, Phœbus, Madame Carnot, Colonel W. B. Smith, Pride of Madford, Mrs. C. Blick, Chas. Davis, Viviand Morel, and W. Holmes.

In the greenhouses he had a good display of Zonal "Geraniums' and Begonias. As to the latter I may say Mr. Sheath is not a grower of hundreds but of thousands. Several Cattleya labiata, Cypripedium Spicerianum, C. insigne, Odontoglossum Alexandræ, and Cattleya Loddigesi were in excellent health. A house of late Grapes looked remarkably well; large bunches with well coloured berries of Lady Downe's, Muscat of Alexandria, and Mrs. Pince. The cordon Apple and Pear trees looked healthy, and there were fine fruits of that highly appreciated Apple, Newton Wonder, still on the trees.

Outside were large specimen plants of Chrysanthemums in full bloom of such varieties as Ryecroft Glory, Source d'Or, and Mdlle. Elise Dordan; these with plants of Cosmos blooming profusely, and Dahlias still flowering, gave a charming effect, with the autumn leaves that bedecked the paths and beds. The photographic illustration (fig. 72, page 483) depicts a clump of Pampas Grass in the grounds of Macrocarpa.

Ventnor Show.

The Ventnor Chrysanthemum Society held its second annual exhibition in the Pavilion on November 9th and 10th. The exhibits were numerous, and of excellent quality. For cut blooms Mr. W. H. Jobling, gardener to Lady Harpur Crewe, secured premier honours in the open classes, and also the I.W. Horticultural Association's award of merit for an excellent bloom of Iserrette. Mr. F. Woods, Steephill Castle, took first in the class for groups, and also the I.W. Horticultural Improvement Association's certificate for cultural merit. Mr. W. Gee was first for specimen plants. Mr. W. W. Sheath first for both black and white Grapes. Mr. G. Witty was first for tray of vegetables, which contained some fine Peas of Boston Unrivalled and huge Sutton's Exhibition Sprouts. Mr. D. Day was first for Apples, and Mr. Sheath for Pears.

The other principal exhibitors were Messrs. H. Drover, J. Attrill, J. Silsbury, W. Taylor, J. Moseley, and W. Kingswell. Messrs. H. Drover & Son staged a collection of fruit, flowers and plants, not for competition. Messrs. J. Cheal & Sons also sent a collection of Apples not for competition. Much credit is due to the Secretary, Mr. W. Knight, and to the Manager, Mr. Jno. Gill, for the excellent arrangements and general management of the show.—S. H.

ORCHIDS

Cypripedium venustum Measuresianum.

Amongst the very numerous Cypripediums, the well-known venustum is highly appreciated. Every collection comprises the type and several variations from, some of which occasionally find their way to the Drill Hall. Amongst the most distinct of these varieties was one staged by Mr. H. J. Chapman, Camberwell, and named C. v. Measuresianum. When it was shown before the Orchid Committee it received an award of merit. The flowers were inclined to be small, but, as may be seen by the woodcut (fig. 71), the markings were very distinct. The dorsal sepal was white lined with green, while the petals and pouch were yellow barred with green. The foliage was pale green, blotched with a darker shade.

Notes on Cattleyas.

Seldom have these Orchids been so satisfactory at this time of year as they are this season, a fact accounted for in a measure by the brilliant weather recently experienced. But all through the season, as the different species of the labiata group have come into flower, they one and all have given a good account of themselves. Just now we have the grand old autumn flowering labiata, a plant that came to us a few years since almost as a novelty, yet with a character of nearly eighty years' standing; and well has it borne out the good opinion first formed of it, for it is of a magnificent constitution, very free and constant in flowering, and the blossoms present an almost endless variety.

All are good, especially when it is remembered that these gorgeous blossoms occur at a time that used to be noted for the dearth of flowers. To say it is easily cultivated hardly goes far enough. I have plants now in flower, and carrying about a dozen blooms on each, that were bought at about 2s. 6d. each, and have never been potted but once. And this reminds me of the fact that all these plants may with perfect safety be potted at any time of the year when it is apparent that a glut of young roots is about to be put forth from the rhizomes near the leading pseudo-bulb.

A little assistance in the way of top-dressing is very often of great benefit to many species just now, any that push roots in advance of swelling the bulbs, such as C. Mossiæ especially. It is true they are producing flower spikes, but there is no need to disturb the roots much unless they are in really bad order, and then they are better out of the pots than in them. The atmosphere of the house at this time of the year requires careful management; on the one hand to give sufficient stimulus to any late plants to finish their growth, on the other to prevent earlier ones starting out of season. Much can be done, of course, by the arrangement of the plants in the house, but even this will not do unless the atmospheric conditions are right.

The worst plants to start out of season are the varieties of C. Dowiana and C. gigas, but even C. Gaskelliana will do the same thing. This must, if possible, be prevented, as although the growths are sometimes strong and healthy, there is nothing to beat a true annual cycle of growth and rest as required naturally by the individual species. Of course, the times for this vary; for instance, C. Warneri, which is often described as the spring flowering labiata, may often be met with at this season just starting to grow from the base.

The best winter position for this plant, and for any of the last-named kind that have not kept in proper order, is one not more than a yard away from the roof-glass, where abundance of light reaches them from all sides. The beautiful C. Percivaliana is almost unrivalled in the beauty of the tints on the lip, lovely combinations of gold and deep crimson often occurring. This, too, delights in ample light—will not, in fact, thrive without it, and it is just as important for the finishing growths of C. Mossiæ, the most justly popular, perhaps, of all.

Coming to the upright-growing species, as represented just now by the quaintly coloured C. bicolor, a good clear light is of the utmost importance. The growths are finishing, and must be well consolidated, or any slight check during winter will be severely felt. Then badly ripened bulbs shrivel if allowed to get a little on the dry side, while those properly developed will stand drying for weeks with impunity. The many varieties of C. guttata, C. intermedia, C. Schofieldiana, and C. amethystoglossa are all alike in this particular. With regard to root moisture during the winter, it may be noted that the smaller, more seed-like, pseudo-bulbs will not, as a general rule, stand so much drying as the more obese, or club-shaped kind.

There is no better time than the present for an overhauling of the Cattleya house, cleaning every part of it thoroughly, and re-arranging the plants in their winter quarters. If possible, all the plants should be taken out of the house, but as this would be inconvenient in many cases, they should be shifted to one end and protected by a large piece of tiffany or light canvas while cleaning the opposite end. This will prevent the foliage being splashed from water and dirt. Begin with the roof, and wash this thoroughly inside and out, mopping down the glass, and scrubbing the woodwork with hot soapy water and soluble paraffin.

Sponge the glass inside, and then scrub down all lattice stages and walls, the stages dressed with gravel or spar, having this turned and placed back clean, dusting a little soot and lime about first. Having done the house, the plants should be all sponged, first dipping the heads in warm water and a solution of softsoap afterwards, sponging every leaf carefully. The rhizomes, too, must come in for careful

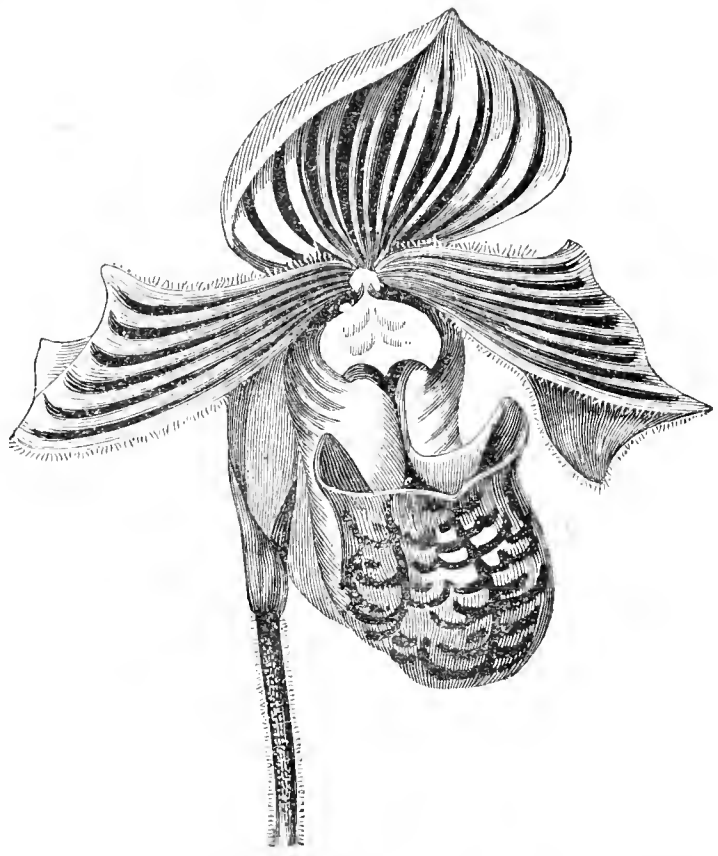

Fig. 71.—Cypripedium venustum Measuresianum.

attention, as the small white scab so prevalent among Cattleyas here finds congenial quarters. Wash the pots thoroughly, and before re-arranging renew any stakes or ties that may be defective.—H. R. R.

NOTES FROM IRELAND.

The Mildness of the Season.

The month of October ran its course, so far as weather was concerned, in a very satisfactory manner, and it is difficult to realise the fact that mid-November is now with us. On the seaboard of Dublin Dahlias still make a brave show, being there less affected by damp than further inland. A long border of these lately seen, consisting of some 200 plants, were, and in all probability are still, charming both in profusion and perfection of bloom. Fuchsias, and many a bright patch of Lobelia fulgens, are still in all their glory, whilst the last Rose of summer not only lingers with us, but is well represented by that gay, good, and generally satisfactory variety, Ulrich Brunner. On a sunny bank near the Phœnix Park, where a humble florist assiduously cultivates a little patch surrounding his thatched home, one sees in passing a delightful display of the German Scabious, varying in tint from white to rosy red. It should be a rare season for outdoor Chrysanthemums, but these are little in evidence. Vagaries among the fruit trees are common, both Apples and Pears putting forth occasional blooms. As for Strawberries, present appearances promise fruit for Christmas, blossom and a prospective crop swelling on many plants leading to that inference.

Although a wet and cheerless September gave us a few nipping nights ere it departed, the effects on tender plants were but partial, and recovery was rapid, the cottage homes still being bright with the gold and scarlet of Nasturtium blooms, set off by the vivid green foliage. But in no instance is the effect of this protracted mildness more noticeable than in the vegetable supply to the Dublin market. So much is this the case, that in one place where large breadths of the staple kinds are grown for it, the conclusion has been reluctantly arrived at that they do not pay for the labour of gathering and cartage, and a temporary cessation of the catering has been decided upon, excellent samples of autumn Broccoli and Veitch's Autumn Cauliflower returning at the rate of only 6d. per dozen, and Brussels Sprouts are realising relatively low prices.

Celery, too, in grand condition, and entailing a considerable outlay on labour in its production, yields the grower 1d. per stick. Yet one sees

openings in other directions. Onions, for instance, for which a good demand always obtains, are largely imported, although it is but fair to add that both soil and climate are not generally the best suited for their culture. One thing is worthy of remark—viz., those whose smartness results in having good breadths of an early Cabbage, such as Ellam's, in cutting condition during April, reap their reward in a brisk demand for it.

Potatoes are an exception to the low prices ruling in other commodities, and this in spite of many growers sending direct for sale instead of holding over; £4 per ton is the present price for average samples of Beauty of Bute and Sutton's Maincrop. There is no doubt that August and September were disastrous to the Potato crop of Ireland, and even here, where the worst effects were not felt, one is daily reminded that the indispensable esculent is decidedly inferior in quality. With cattle food still in abundance, it might be reasonably expected that glutted markets in this direction would not prevail However, many of the annual grazing tenancies expire at this period, probably accounting for much in this direction; and it is said, with what degree of accuracy I know not, that the engineers' strike is indirectly concerned in it. However that may be, this must be regarded as one of our principal exports.

One question has more than once been asked, How it is that the artisan in Liverpool (or other large English industrial centre) can procure the best we can produce in the way of beef, or catch in the way of fish, at a distinct advantage over his brother in Dublin? It is a question one would have to go beneath the surface of things for an answer, and it is not, perhaps, expedient to say more on which a little strong feeling exists. We are told upon the one hand that Ireland is purely an agricultural country, and on another that it is pre-eminently one of dairy production, which is, of course, but a phase of the former. As a gentleman once remarked, "If it is not this it is nothing." His Irish home is, I find, now supplied with cream in jars bearing the brand of the West Surrey Central Dairy. He, as a consumer, says it is cheaper and better than the native article, which, if not patriotic, is undoubtedly practical; a spirit which has not only emigrated to this side the Channel, but in all probability has come to stay.—K., *Dublin.*

HARDY AQUATICS.

THE cultivation of aquatic flowers is attended by many pleasures. In hot summer weather the very appearance of water is grateful. A small pool or aquarium well furnished with Water Lilies and other plants is a pleasant resort, and the gentle rippling of the water is cool and refreshing to the senses. In many gardens large or small lakes exist, the shallow waters of which afford ample space for a collection of aquatics; but in very small gardens the most that can be attempted is a small aquarium, unless a streamlet pass through, when a pool may be formed at some selected portion of its course, which the waters of the brook will furnish before passing on their way. Let us suppose, however, that no such streamlet exists, as it probably does not, and that it is desired to form a small aquarium. An excavation from 1 foot deep at the edges to 3 feet in the centre should be made. Inlet and outlet pipes should be provided to replenish the water or draw it off as may be required.

A stone basin is a good substitute for a clay-puddled aquarium, but by no means equal to it, for the plants derive nourishment from the clay, which they can never do from stone; besides, the stone basin is much more expensive than a puddled one. The basin may be formed of cement, which may be done by firmly ramming the bottom after it has been dug to the required width and depth. It cannot be rammed too hard, and then place a layer of lime-riddlings on the bottom and ram it as hard as the soil; on this spread with a trowel a layer of mortar an inch thick, formed of equal parts lime and finely sifted ashes—the dust that passes through the riddle. This should be allowed to dry, and if it has been well wrought and put on quickly it will not crack. On this again a coat of Roman cement is laid an inch thick, which is formed of cement one-half, plaster of Paris a quarter, lime finely sifted a quarter, with sufficient water to make it of the consistency of mortar. A cheaper way is to use equal parts of finely powdered lime and calcined marl; or Portland cement, with a little sand added, either of which will set as hard as a stone, and be impervious to water; but they should be laid on quickly, or they are apt to crack at the joinings. Soil 6 inches thick will be necessary at the bottom of stone or cemented basins for the aquatics to grow in. All ponds or lakes are formed in the manner before named, the only difference being in the size. A lake is simply nothing more than a basin on an extensive scale; but I will pass over the improvement of streams, lakes, and irregular pools of water for the present, and confine myself to the culture of aquatics.

Probably there is nothing so simple in the whole range of ornamental flower gardening as the cultivation of water plants, there being but two main points to attend to. These are providing a portion of soil for the roots to grow in, and planting or placing them at such a depth below the surface of the water as their size and habits require. Their peculiar natural habits should also be imitated. Those with floating leaves, as Nymphæas, Nuphars, and Villarsias, grow naturally in the deepest parts, while such plants as Caltha grow on the margin or in shallow water. The smaller kinds require to be but just within the water; whilst some do best when planted on the edge, but still with the roots in close proximity to water, of which Myosotis affords examples. Some, nay the greater part, of the taller-growing kinds require to be planted near the edge in shallow water, as, for instance, the upright-growing Grasses and Reeds.

In planting it is better to distribute them in groups than as single plants at regular distances. Even groups should not be regularly distributed, but disposed with irregularity in threes, or a dozen together, according to the extent of the water. They will thus look all the better. It will not look well to have all the tall-growing in one part, and the small in another; but the contrary. The smaller kinds will look better where the bank is broken by shrubs; and the taller kinds may be made to distinguish themselves between the shrubs on land and the water plants by placing them where the bank is unclothed. As a rule tall-growing kinds ought not to be planted where the bank is a dense mass of foliage, or the outline of the water will be destroyed; nor the smaller kinds where they cannot be seen and examined. Where, however, the bank projects and is clothed with trees or shrubs, advantage should be taken to plant a group of the taller kinds in as great a number and as much variety of foliage as may be consistent with the plants on land. The inlets should be planted with the lesser kinds, those that appear much above water being excluded, except one here and there to fix or attract the eye, or the smaller ones might remain unnoticed.

Plants with floating leaves as a rule ought to occupy the deepest parts of the water, and as they are much less numerous than those growing in shallow water, groups of one species where the water is extensive, or of one genus when it is small, should be planted in one place. Even then they should not occupy the whole of the mid-water, but with a broad channel between and distant from group to group they would appear as verdant floating islands, which, when arrayed in their summer dress, with their gorgeous white and golden flowers peeping from the watery surface, will be highly picturesque. If the plants be artistically disposed a lake will have much the appearance of an old-fashioned flower garden, the tall-growing aquatics in groups being the shrubs, the large species the single specimen shrubs, whilst the floating species will represent the gorgeous masses of one colour or beds, water taking the place of the lawn.

Where basins or small pools already exist that have no steps or terraces to accommodate plants which require to be placed at different depths, half-inch iron rods, with a loop at one end so as to hold a flower pot, bent so as to be the required depth below the surface of the water, and fixed firmly in the bank, will do much towards growing a greater variety of plants, and if the iron be galvanised the rods will last a long time. A goodly amount of soil, mud rather, being all we want for these plants, I have only to consider how it is to be given. For large pools it is best given at the bottom of the water, whilst for basins and small pools the plants had better be in pots, except such as have floating leaves, which must have at least 6 inches of soil to grow in. Nymphæas may even be grown in pots, but not so well as when planted out.

Stiff loam alone is suitable for all the floating species and tall-growing kinds; but the others require vegetable earth, peat, leaf mould, or bog soil one-fourth, strong loam half, and coarse gravel one-fourth; 6 inches is not too much for the taller species to grow in, but 3 inches will do for the smaller kinds. In assigning the plants their places in basins of water, regard should be had to effect, unless a collection be wished for, when, of course, effect is not the object aimed at; but the depth each species requires to be in the water must be borne in mind at the time of planting.

Aquatics are best planted in the spring, for then they have a good opportunity to establish themselves during summer. The best mode of planting is to fasten a ball of strong loam round their roots and drop them gently into the water at the desired place. Should the loam be of a friable nature, a large or small stone, in proportion to the size of the plant, must be fastened to the root in addition to the soil, or the plant will rise owing to the soil falling in the water. Those which require to be planted on the margin can easily be placed in the mud with the hand.

With regard to the plants that are to occupy the aquarium, it rests entirely with taste to say whether it shall be planted with those that have white or yellow flowers only, or with such as afford a variety of colour. It may be white with Nymphæa alba, or yellow with Nuphar lutea, or many colours by selecting from the list of aquatics to follow. In any way it should be planted in accordance with the laws of harmony and contrast. The white Water Lily is second to no aquatic for forming a good centre of white; but the plants in the beds around should have flowers of a different colour, so with yellow, and so on. If the basin be planted with one species only it is not necessary to form it into terraces; but it should be pretty nearly of a regular depth throughout, as much as circumstances will allow. Three feet is deep enough for either of the aforesaid Lilies, and 1 foot 6 inches quite shallow enough. Neither of them appear above water, but their leaves float on the surface, still having one of the florists' highest recommendations—"the flower is borne well up above the foliage." I certainly should plant but one species only, or, if many, such only as would attain their greatest beauty when the remainder of the design was arrayed in splendour.

But we have arranged for plants of different heights, and must find them. Well, here they are in flower garden order:—Centre, Nymphæa alba; Hydropeltis purpurea around it on the first step—the flowers are of a reddish purple colour—and Nuphar pumila at the outside or edge, which will be improved by having Myosotis (Forget-me-not) planted on the margin of the water all round. It is not necessary to adhere to this arrangement, for there is ample variety of habit and diversity of colour in aquatics, so that by having but one of a species a large number may be grown in a limited space. However, where anything like effect is desired, the basin had best be planted with Nymphæas in collection, Nuphars, Alismas, and others, for it is difficult to get aquatics to grow as even in height and outline as bedding plants. As far as regards fish

in small aquaria, a few gold fish are an embellishment, but fowls have no business in such a place.

Water plants are propagated by division of the roots and from seeds. Division is simply parting an old root, or taking off the offsets. Such species as emit roots from the stem or have stems floating beneath the water may be increased by inserting cuttings of the stems. An excellent plan for striking aquatic cuttings and raising from seed is to have a shallow stone basin, any size, about a foot deep, with a hole to let off the water, and a tap to fill it; the bottom to be covered with 3 inches thickness of stones and about 3 inches of soil—*i.e.*, peat and loam in equal parts laid on the stones; it is then filled with soft or rain water. In this trough cuttings of the creeping kinds are planted, and seeds of the floating species are dropped into it. In this they can remain until of sufficient size to plant in their final quarters, when the water can be let off, and a fresh planting take place. Cuttings are best inserted in March, and seeds sown as soon as they are ripe.

For the kinds growing on the margin, or what are, properly speaking, marsh plants, the trough will require to be filled with soil to within an inch or so of the brim, covering the surface with a thin layer of moss. Saturate with water and keep the whole well saturated afterwards. Offsets can be planted in March, putting them with their roots just beneath the moss, and seeds may be sown on the surface immediately after they are ripe. The seeds will vegetate more freely when the moss becomes decayed. When the plants are large enough to transplant they may be transferred to where they are to remain, moving them with a ball of earth adhering to the roots; for although placed in the water a ball of earth is of as much moment to them as in planting any other plant, success being more certain with a ball than without. For small basins the plants are handier in pots, especially the smaller kinds, potting them in the compost already mentioned like any other plant, and placing a stone on the surface of the mould to prevent the plant being displaced. The tender kinds are best in pots, for then they can be readily removed to shelter on the approach of severe weather.

Though we do not now propose to give lists of varieties of aquatic plants, we cannot refrain from seizing the opportunity to pay a tribute to the beauty of Marliac's hybrid Nymphæas. At several shows this season Mr. J. Hudson, Gunnersbury House, has staged collections of the flowers, and they are surprisingly beautiful. The colours are varied, and the size of the flowers excellent.—A.

ROYAL HORTICULTURAL SOCIETY.

NOVEMBER 9TH.

SCIENTIFIC COMMITTEE.—Present: Dr. M. T. Masters (in the chair); Mr. Michael, Rev. W. Wilks, Dr. Müller, Prof. Church, and Rev. G. Henslow (Hon. Sec.).

Cattleya labiata, Sport.—Dr. Masters observed that sports similar to those produced at the last meeting, in which two sepals were more or less resembling the labellum, had been sent to him from numerous localities this year. The species was introduced some fifty years ago, and subsequently lost; but it has been lately rediscovered in and introduced from Pernambuco.

Carnation Leaves with Horn-like Marginal Outgrowths.—Mr. Michael reported that no trace of acari could be seen, as suggested as a possible cause. Dr. Müller observed that a plant of Solanum jasminoides was covered all over with horn-like excrescences. Dr. Masters suggested that they were probably spongy outgrowths from the epidermis.

Stocks, &c., Attacked by Beetles.—Mr. Michael observed that Stocks, Virginia Stocks, and Nasturtiums in his garden were attacked and utterly spoilt in a fortnight by thousands of beetles eating the flowers of the two former plants, but the leaves as well of the last-named. They do not entirely kill the plants, which renew both leaves and flowers after the beetles have disappeared. A partial remedy was found in shaking the plants over a basin of hot water. It appears to be Phyllotreta atra, one of the numerous "flea beetles." Miss Ormerod, to whom they were sent, suggests "trying a mixture of equal parts of fresh gas lime and quicklime, with a much smaller proportion of soot, and about half as much sulphur as of soot. These should be powdered up together very finely, well mixed, and dusted on to the foliage *when the dew* is on it, morning or evening. Just a sprinkling is enough. It usually acts well if applied as above, so as to adhere to the beetles and foliage." She was under the impression, however, "that lime similarly applied would do equally well."

Ivy Attacked by Dodder.—Mr. Chas. Herrin of Dropmore sent specimens of Ivy badly attacked by a *Cuscuta*. He remarks, "This parasite has established itself on the west wall of our church, destroying the Ivy with which it is covered. It has been thoroughly destroyed, Ivy and all, once, a few years ago; but now that the Ivy has begun to grow nicely again, half covering the wall, it has again appeared, and is destroying it." As the seeds must germinate in the ground, or perhaps in the chinks in the wall as well, the aim must be to kill them before germinating. If the ground by the wall receive a good dressing of slaked lime, such might prove effective.

Cox's Orange Apple Striped.—Mr. G. Swailes of Beverley sent an Apple, mostly red, but striped with green on one side, the latter colour being on the most exposed side. The cause was unknown. Dr. Masters suggested the possibility of accidental crossing having been the cause, for Darwin had described similar results in an Orange pollinated by a Lemon ("An. and Pl. under Dom." I., p. 399). Mr. Wilks mentioned that a Beurré d'Amanlis Pear in his garden had thrown out a green striped sport, also a bough bearing golden foliage.

Gall on Jessamine.—Mr. Henslow exhibited a large globular gall which he had taken from the stem of this plant. As no fungus was present, it was sent to Mr. MacLachlan for examination.

Composition of Potatoes.—Prof. Church gave some account of the late recent researches of MM. Coudon and Bussard on the distribution of the constituents in Potatoes. They found that a slice of a Potato revealed three zones; the external one beneath the epidermis contained 73 per cent. of water, the central holding about 80 to 84 per cent.; that the central part contained the greater amount of nitrogen, the exterior the greater quantity of starch. This accounted for the "bursting" in a floury Potato, which is relatively more free from albuminoid matters. The cause of the interior portion being more consistent is that the starch cells though bursting are held together by the curdling of the albuminoid matters during cooking. The same peculiarities appear in the thirty-four varieties examined. The intermediate zone was also of an intermediate character with regard to its structure and cell contents. It was to be regretted that the authors did not distinguish between the true albuminoids and the amides in estimating their per-centage of nitrogenous matter. As a rule the former amount to 1·3 in Potatoes, but they had estimated them from the total nitrogen as from 1·8 to 2·5. Dr. Masters remarked that these observations corresponded with the stem-structure of the Potato, which would have the cortex as a starch reservoir as it is in trees, while the deeper layers would correspond with the phloem or proteid-holding sieve tubes.

Notes & Gleanings

EVENTS OF THE WEEK.—On Tuesday next the Committees of the Royal Horticultural Society will meet at the Drill Hall, Westminster. It is hoped the display will be much superior to the last one. For other fixtures, readers will do well to consult the list of shows on page 479.

—— WEATHER IN LONDON.—From Wednesday last until Sunday night the weather was wonderfully mild for the early part of November Overcoats were discarded by many persons, and one might easily have thought it the month of May but for the falling leaves. Flowers that are usually over long before this are blooming profusely in the London gardens. During the early hours of Monday morning rain fell heavily, but the day was dry, and a cold wind blew for some hours. Tuesday was milder, rain falling in the evening and through the night. At the time of going to press on Wednesday it was drizzling slightly.

—— WEATHER IN THE NORTH.—The first two weeks of November brought weather dull and foggy generally, with an occasional drizzly shower, and a rare gleam of sunshine. During the night of the 13th a great deal of rain fell, but Saturday was fine. Sleety showers occurred throughout Sunday; on Monday morning the higher hills were whitened with snow, and 5° frost were registered. Tuesday morning was dull, with cold N. wind, and 90° frost during the night.—B. D., *S. Perthshire.*

—— EUPHORBIA CYPARISSIAS.—This European plant deserves a few words of praise because of its autumn colouring. Were it not for its inveterate habit of straying beyond its bounds it would be more appreciated even in summer because of its elegant-looking habit alone. The greenish yellow flowers are scarcely bright enough; but at times they look pleasing even though the green tinge detracts from their effect It is in autumn, however, that the Cypress Spurge looks its brightest when it assumes a colouring of saffron and gold. A nice plant on the top of a rockery here has been much admired since it began to colour in the beginning of October.—S. ARNOTT.

—— HORTICULTURAL CLUB.—The usual monthly dinner and conversazione took place at the Club Rooms, Hotel Windsor, on Tuesday last, and notwithstanding the counter attractions of the Chrysanthemums, there was a good attendance of the members. The chair was taken by the Rev. W. Wilks, and there were present Messrs. Shea, Selfe Leonard, Chas. E. Pearson, Alfred Pearson, George Bunyard, James H. Veitch, Geo. Nicholson, G. Massee, and the Secretary. The subject for discussion was Lilies and their diseases, which was introduced by Mr. Massee, President of the Mycological Society, who gave a most interesting and scientific description of the disease which has attacked two at least of the families of Lilies which we receive from Japan—Auratum and Speciosum—and of the experiments which have been carried out at Kew for the purpose of ascertaining the best way of fighting the disease. A cordial vote of thanks was accorded to Mr. Massee for his most interesting address.

—— Royal Horticultural Society.—The next Fruit and Floral meeting of the Royal Horticultural Society will be held on Tuesday, November 23rd, in the Drill Hall, James Street, Westminster, one to four. At three o'clock a lecture on "Horticultural Exhibitions and Schedules" will be given by Mr. John Wright, V.M.H.

—— Shirley Gardeners' Association.—The monthly meeting was held at the Parish Room, Shirley, on Monday, the 15th inst. There was a very good attendance, Mr. B. Ladhams, F.R.H.S., occupying the chair. Mr. F. Shrivell, F.L.S., Tonbridge, gave a lecture on "Chemical Manures for the Garden," and detailed the results of four years' experiments conducted by himself and Dr. Bernard Dyer.

—— Apple Trees in Bloom in Mid-November.—The unprecedented mildness of the weather has had a remarkable effect in the West of England. Strawberry plants are in many places in full bloom, and in the neighbourhood of Trowbridge, not far from the far-famed "White Horse," and under the shelter of the Wiltshire Downs, a farmer has an Apple tree which for some time past has been covered with blooms, and the fruit is now setting for a second time this year.

—— Hessle Gardeners' Society.—A meeting of the above Society was held on Tuesday, November 9th, Mr. Geo. Picker in the chair. Mr. Lyons read a very interesting paper on "The Gardener's Refuse Fire *versus* The Compost Heap." The essayist pointed out the disadvantages that are caused by the burning of garden refuse, and described the advantages gained by allowing it to remain in heaps to decompose. He also described the best mode of rendering such unsightly heaps attractive. The animated discussion that followed the essay showed that a great number of members did not hold the same views as the essayist. Owing to a Chrysanthemum show being held in the vicinity there was only a moderate attendance. A hearty vote of thanks was given to the essayist and Chairman at the termination of the meeting.—G. W. G.

—— "Indian Gardening."—On September the 15th the first issue of this gardening paper was published at Calcutta, and the six numbers received to date are now before us. The paper and type used are both of good average quality, and a perusal of the several articles, with their selection, prove much care in the editorial department. All topics relative to gardening are dealt with in a sound practical manner, and it is probable that the paper will receive a considerable amount of support. "Indian Gardening" is issued weekly. Agricultural notes and articles have also a goodly amount of space devoted to them, and will enhance the interest and widen the popularity of the journal. An advance may be seen between the first and sixth number, which augurs well for the future. We trust the promoters and managers of "Indian Gardening" will meet with unqualified success.

—— Grapes for Maidstone.—In view of the fearful calamity which has overtaken our county town, I am endeavouring to arrange for a supply of Grapes for the sufferers. Nearly 2,000 cases of typhoid have been recorded, and the distress is terrible. The struggle towards convalescence after attacks of this fever is always a long and weary one. Solid food cannot be given, no matter how keen the pangs of hunger may be. The Mayor tells me that Grapes are needed, and anyone having some to spare, if only a bunch or two, would be performing a good act by sending them. Boxes sent to the Mayor, marked "Maidstone Grape Fund," will be diverted to the proper quarter, and both railways, S.E.R. and L.C.D.R., deliver such gifts free. I would gladly send printed labels to anyone on receipt of a postcard. I may add that kind promises of assistance have already been made by several well-known horticulturists.—W. P. Wright, *Willesborough, Ashford, Kent*.

—— The Remarkably Mild Weather.—Seldom has there been such warm weather immediately preceding the end of the first half of November as there has been for the last few weeks. The natural consequence is seen in the wealth of flowers to be seen in suburban gardens. The display of Chrysanthemums in the garden of the cottage behind the post-office on Wimbledon Common was a great point of attraction to pedestrians a day or two ago; and it is notable that the "Daily Mail" on Monday printed from a gardening correspondent at Wimbledon—probably the owner of the garden in question—the following list of plants which he says are at the present time blooming in his garden:—

Myrtle	Antirrhinums	Marguerite Carnations
Fuchsias	Chrysanthemums	Everlasting Flowers
Nasturtiums	Scarlet Geranium	Auriculas
Polyanthus	Violets	Pansies
Roses	Wallflowers	Red Daisies
Mignonette	Michaelmas Daisies	Nicotiana affinis
Marigolds	Lobelias	Calliopsis Drummondi, and
Primroses	Marguerite Daisies	Vincas.

—— Gardening Appointments.—Mr. J. Dare, after ten years' service at Stancliffe, has been appointed head gardener to W. Hoare, Esq., at Iden Manor, Staplehurst. Mr. A. E. Drewett, until recently gardener at Wakehurst Place, Hayward's Heath, has been appointed head gardener to A. B. Foster, Esq., Canwell Hall, Tamworth, Staffs.

—— Violas in November.—"A Viola Lover" writes:—"At the Tamworth Show, on the 10th inst., Mr. W. Sydenham exhibited a table of Violas, which conveyed the impression that we were nearer June than November. Many beautiful new and some older varieties were seen in the best of condition. When we consider the Viola starts blooming in April and May, and continues to do so until November, we surely can claim for it a position second to none amongst hardy flowers."

—— Apples for Export.—In the Taunton district Apples have been very plentiful this year, and large quantities have been sold for exporting to Normandy. Agents purchase the crop, by the tree or by the orchard, gather, and of course pack the fruit, the bulk of it being sent by boat from Bridgwater, Burnham, and other small towns on the coast. What prices have been obtained I do not know, but, as the farmers seem quite satisfied, I should say the Apple crop, in this district at any rate, has been profitable this year.—J. E.

—— Birmingham Gardeners' Association.—At a recent meeting of this Society (Mr. Spinks in the chair) a very interesting and comprehensive paper was given by Mr. W. Gardiner on the Pæony. The essayist advocated the merits of the numerous varieties of herbaceous and tree varieties (Moutan), both as garden flowers and for cutting purposes, including also their comparatively simple requirements in a cultural point of view. Stress was laid upon the beauty and delicious fragrance possessed by many of the varieties. An interesting and instructive discussion followed.

—— Roofing Felts.—The uses to which felt may be put in the garden are extremely numerous, indeed they are so valuable as to warrant a supply being always on hand. By the aid of felt a shed may be made waterproof and the temperature raised several degrees. But it is of no use procuring felts unless those of good quality are chosen, and amongst the best are those marked with the Red Hand. From many sources we have heard excellent testimonials as to the excellence of the material bearing this trade mark, and those procuring some for any purpose will do well to order this, when they may be sure of a trustworthy article. It can be supplied by all ironmongers, who have also pamphlets containing interesting notes on the uses of felts.

—— Export of Ginseng.—From a recent number of the "Pharmaceutical Journal" it appears that in November, 1895, an ordinance was promulgated in Corea legalising the export of Ginseng. For centuries red Ginseng has been sent to Pekin by the overland embassy, the trade being a royal monopoly from which the King of Corea derived the principal portion of his revenue, the export by sea being prohibited. The annual crop is limited in quantity to about 15,000 catties, upon which an excise duty of 10 dols. a catty is charged under the new regulations, to which is added an import duty of 5 per cent. ad valorem, levied on its arrival at a treaty port in China. Under the new law the King is compensated for his loss of the Ginseng monopoly by an equivalent addition to the privy purse.

—— Open Spaces.—At the monthly meeting of the Metropolitan Public Gardens Association, 83, Lancaster Gate, W., the Earl of Meath (Chairman) presiding, a communication was read from the City Parochial Foundation, consenting to the allocation of their open space grant of £1000 to the cost of laying out Bethnal Green Parish churchyard, and to the provision of a drinking fountain therein, in accordance with the proposal of the Association made some time previously, and it was resolved to seek permission to erect a tablet in the ground, with a suitable inscription, as a record. It was also agreed to offer trees for planting in thoroughfares at Kensington, Calvert Avenue, Shoreditch and Hoxton Market, and to grant seats for South Grove, Camberwell, and De Beauvoir Square. The Chairman reported the opening of a playground in Benbow Street, Deptford, secured and laid out by the Greenwich Board of Works, and provided with ample gymnastic apparatus by the Association. Letters were read respecting the proposed acquisition for the public of Churchyard Bottom Wood, N., Pymmes Park, Edmonton, N. a part of Golder's Hill Estate, N.W., a site at Bromley, Kent, a burial-ground at Barking, E., Camberwell Churchyard, a cleared area in Islington, and a plot of land in Ratcliff. It was also decided to see whether any steps could be taken, and, if so, what the cost would be, to improve the churchyards of St. Nicholas and St. Paul's, Deptford, in order to render them more available as public gardens than at present.—("Garden.")

Chrysanthemum Shows.

As is usual at this time of the year we have received numerous ntimations of Chrysanthemum shows which are to be held during the coming season. Spaee, however, can only be found for mentioning those that have been advertised in our columns. If any have been omitted we shall be glad to add them to the following list. We append the names and addresses of the various Secretaries.

Nov. 17th and 18th.—South Shields.—B. Cowan, Harton, South Shields.
„ 17th and 18th.—Hull.—E. Harland and J. Dixon, Manor Street, Hull.
„ 17th and 18th.—Bristol.—E. G. Cooper, Mervyn Road, Bishopston, Bristol.
„ 17th and 18th.—Rugby.—W. Bryant, 8, Barby Road, Rugby.
„ 17th, 18th, and 19th.—York.—J. Lazenby, 13, Feasegate, York.
„ 18th and 19th.—Bury St. Edmunds.—G. A. Manning, "Bury Post," Abbeygate Street, Bury St. Edmunds.
„ 19th and 20th.—Bolton.—J. Hicks, Markland Hill Lane, Heaton, Bolton.
„ 25th and 26th.—Leamington Spa.—L. L. Lawrence, 76, Parade, Leamington.

National Chrysanthemum Society.

On Monday last the Floral Committee of this Society held a meeting at the Royal Aquarium, Westminster, Mr. T. Bevan occupying the chair. There was an excellent show of novelties, some good incurved varieties being staged. First-class certificates were awarded as follows:—

Master H. Tucker.—Large incurved Japanese, with broad stiff florets; deepest crimson, reverse chestnut bronze. Shown by Mr. H. Shoesmith of Woking.

Georgiana Pitcher.—Massive incurved Japanese, with broad, long, incurving and curling petals of good substance; soft yellow. From Mr. W. Wells of Earlswood.

Mdlle. Lucie Faure.—Immense incurved, with long and pointed florets, building up a flower resembling Chas. H. Curtis; creamy white. From Mr. W. J. Godfrey of Exmouth.

Ernest Cannell.—Very large incurved, of deep build, neatly incurved, florets somewhat pointed; colour buff yellow. Exhibited by Mr. R. Leadbetter, Elmstead Grange, Chislehurst.

Mrs. Geo. Carpenter.—Pretty rosy lilac Japanese, with white centre florets, fairly long, twisting and curling. Shown by Mr. Geo. Carpenter, West Hill, Byfleet.

Madame Laurence Zédé.—Large, massive incurved Japanese, with long, broad, incurved, and curving petals, slightly twisted; colour rosy lilac, white centre. From Mr. W. Wells.

Earlswood Beauty.—Large single, of good form, with long florets of good width, and neatly grooved; creamy white, yellow disc. From Mr. W. Wells.

Some other noteworthy examples received commendations. the best being Matthew Hodgson, Lady Northcote, Phillip Mann, Mrs. W. C. Egan, and Madame Ferlat. The Committee expressed the wish to see again the following:—Mabel Miller and Archie Ray. A small silver medal was awarded to Mr. W. Wells for a collection of cut flowers, and a commendation to Mr. P. Waterer for his improved name ticket-holder, for fixing in front of show boards.

Chrysanthemum nipponicum.

Although hardy, this comparatively new Japanese species of Chrysanthemum is likely, when better known, to be extensively grown as a greenhouse decorative plant. The inflorescences are after the manner of those of C. fruteseens, but quite distinct, as is the whole plant, from that species. It can be had from 1 to 2 feet in height, with a sturdy, bushy habit. The leaves are spathulate, 2½ to 3 inches long, dark green and glossy, and the margins deeply toothed on the upper half. The flowers are terminal and erect on stout stalks from every growth. They are 3 inches across, the ray florets white, with a large disc of yellow florets. It should be grown in a similar manner to ordinary decorative Chrysanthemums.

Cuttings may be inserted any time up to the end of March. They take from three to five weeks to root if given a little heat. After they are well rooted they should be potted into 5-inch pots, and when established the points should be pinched out. A further shift should be given into 7-inch pots about the end of May, ordinary Chrysanthemum soil being used. At this potting they should be stood outside. The last stopping should be given by the end of June. No staking is necessary, as the growths are all sturdy enough to support themselves. About the end of August they should be placed in a frame and allowed to come on slowly, when they will flower during October and November.—W. D.

Aquarium Show.

It has been pointed out to us that in our report of this exhibition we referred to an exhibit from Mr. Wells, Earlsfield. Of course, it should have read Earlswood, and we regret the error. We also omitted to refer to the handsome stand of horticultural sundries exhibited by Messrs. Wood & Sons, Ltd., Wood Green.

County Challenge Chrysanthemum Competitions.

I venture to return again to my old proposal ere the Chrysanthemum fever of the season expires, in favour of the establishment of county challenge competitions, because I believe these would arouse interest, especially with gentlemen, that seems, in relation to the Chrysanthemum, to be dormant. So far competition seems to be too much amongst the gardeners. A county competition would serve to put gentlemen as well as their gardeners on their mettle, and arouse interest of the most desirable kind. These interests the mere local competitions fail to excite.

Were there in each county a splendid challenge vase to be won yearly, and for the year only, how many employers but would be too proud to see such a trophy on their side boards. To prevent the vase getting into the same hands too often I would render the winner of one year ineligible to compete the next. The class should be for forty-eight blooms, sixteen to be incurved. That would be indeed the front row. Such a competition should be supplemented by six money prizes, the first being £8, and the entrance fee should be 10s. The competition should be peripatetic—that is, in various towns in the county, so that each principal society might have the benefit of the competition in turn. The local society should find one-half the prize money, and the challenge vase committee should collect the rest. Beyond this, we might in time see a grand national competition by counties in London annually, with collections of, say, 100 blooms, thus furnishing a really magnificent show.

In my own county of Surrey we have such growers as Mease, Salter, Higgs, Paddon, McLeod, Hunt, Baker, Jinks, King, and many others; and what a grand competition could thus be furnished for a county challenge vase, would all these fine growers but agree to take part in it.—A. D.

At Ipswich.

In the years that have gone by Ipswich has, perhaps, been renowned more for the Roses that are so splendidly grown in the neighbourhood thereof than for its Chrysanthemums. However, such a state of affairs could not hold good in these days, for the Chrysanthemum is grown everywhere in greater or lesser numbers. In this ancient East Anglian town and its environs there are now many devotees of the Eastern flower, and of them all none is more widely known than Mr. R. C. Notcutt of the Broughton Road Nurseries. He is not an old grower any more than he is a cultivator of several thousands of plants to produce a richly varied display, but the introduction of the lovely Edith Tabor placed him at once in the very van of growers throughout the country. It was hailed with delight, and remains still one of the most popular varieties in cultivation, for it is in all respects excellent.

If we cannot justifiably place him amongst those who cultivate Chrysanthemums on the largest scale, the quality of the blooms he exhibits at least warrant his inclusion amongst those who grow for quality in contradistinction to others whose object is apparently size at any cost The rage—and it can be called nothing else—for mere size is extremely regretable, for with its attainment are lost that grace and elegance for which Japanese varieties are so much appreciated. A reversion in favour of refinement must come sooner or later, and it is pleasant to see several of the trade growers, including Mr. Notcutt, endeavouring to divert the popular fancy into that, its rightful channel. Let us hope that the near future will see the exclusion of those immense ungainly flowers from the stands at our exhibitions, and the sooner it comes the better for the cult.

Returning to our original subject, we will proceed at once to the Broughton Road Nursery at Ipswich. The establishment is not a very large one, comprising only a few houses, which are, as a rule, light and well built, and almost all of which contain Mums. There are some that do not, being stocked with Ferns, Asparagus, Primulas, and other plants grown for decoration purposes, in which phase of gardening the firm has a wide circle of clients. The largest house—a broad span-roofed one—is devoted entirely to Chrysanthemums, the plants standing in a large central bed, the whole of which is readily inspected from the path that runs round it. There is not quite so much crowding here as is frequently the case when Chrysanthemums in pots are being staged, and if the system cause a stem or a pot to be seen, it at any rate permits of all the plants and flowers being seen with perfect ease.

In the preliminary glance round a sharp watch was kept for new varieties, in order to ascertain if the collection were up to date in this respect. We were not long in being assured that this was decidedly the case, for the major portion of the novelties were noted as being in flower. Then, too, mildew on the foliage and damping of the florets were sought, but vainly, for there was an absence of both. What we did observe were the capital leaves produced by the medium sized solid wood. Larger growths have often been seen, but none better ripened than this, and experience has proved that the strong wood is not always the best ripened, and cannot be relied upon to produce flowers of the finest quality. On these points we were soon satisfied, and then the flowers themselves were submitted to scrutiny to ascertain which were of the best in respect of colour, refinement, and freshness.

Foremost amongst the few varieties it is purposed to mention must be placed Edith Tabor, than which nothing more beautiful need be wished. The superb flowers are still unrivalled in their particular style,

despite the several newer ones now grown. That charming sport from Viviand Morel named Lady Hanham was observed in splendid form, the colour being particularly good. Madame Carnot and its yellow sister are largely grown, and of course are very conspicuous, and the same may be said of the old Edwin Molyneux Notwithstanding the fact that it has been in cultivation very many years, this is still one of the most popular varieties, while of its colour it is quite unapproachable. Two of the most beautiful yellows are Oceana and Phœbus, in each of which the colour has developed wonderfully at Ipswich. The incurved Jap Robert Powell at Broughton Road, as at many other places, has done remarkably well, and should become a great favourite.

The number of white Japanese that are possessed of more than average merit is very large, and it is difficult for one to make a selection, as some might prefer an incurved flower, while others would choose a reflexed. Madame Carnot has already been noted, and we may add to it Western King, Simplicity, Mrs. H. Weeks, Lady Byron, Madame Gustave Henry, Mrs. J. Lewis, Ponderosum, and Snowdon, each perfect in its way. Then there were such others as Modesto, Royal Standard, Hairy Wonder, A. H. Wood, Australie, Mrs. C. Orchard, Lady Ridgway, N.C.S. Jubilee, with scores of others of which no mention can be made. These must be taken as representative of the extent of the collection of Japanese varieties, and it is needless to say the section comprises the bulk of the entire collection here as at most other places nowadays.—D. R.

CHRYSANTHEMUMS IN THE NORTH.

Hyrst House, Batley.

Mr. Hurford, gardener to R. J. Critchley, Esq., has this year 350 plants in grand foliage, producing well finished and highly coloured blooms. The best of the new varieties are Mutual Friend, E. Silsbury, Lady Byron, Simplicity, Primrose League, E. Tabor, Eva Knowles, Madame Carnot, Col. T. C. Bourne, Robert Owen, Duchess of Wellington, and Phœbus

The Woodlands, Batley.

For many years Mr. J. Davis, gardener to Geo. Sheard, Esq., has held the premier position for groups at the Batley Chrysanthemum Show. On these occasions the distinctive features of Mr. Davis' arrangements are high quality of the blooms, combined with effective arrangement and finish. The plants are chiefly cultivated for this purpose, but a few incurved were also very promising. The best of the newer varieties in Japanese were M. Gustave Henry, Modesto, Mutual Friend, Simplicity, M. Demay-Taillandier, Australian Gold, Edith Tabor, Mrs. J. Lewis, Oceana, Miss Rita Schroeter, and Phœbus.

South Westmoreland.

Until last season Chrysanthemum growers in this district had received little or no recognition from the horticultural press, when, through the courtesy of Mr. W. J. Ireland, gardener to J. Wakefield, Esq., Sedgwick House, Kendal, a detailed report of the several collections appeared in the *Journal of Horticulture*. This season nothing short of an inspection would satisfy the several growers, and with this object in view Mr. Ireland met me at the Oxenholme Station to pilot me through the district. As showing the comparative mildness of the climate "Geraniums," Heliotrope, and other tender bedding plants are still blooming freely. This cannot be a bad district for Chrysanthemums was the conclusion arrived at, and it was subsequently verified by the grand flowers seen.

Sedgwick House.

Here, and all through the district, the plants are grown on the stopping system to time buds for the first crown, the autumn climate being too moist to get good results from buds secured after August. The condition of the plants in reference to the degree of ripeness, as judged by the degree of the hardness of the wood or to the contrary as a test, was an interesting study. The Japanese varieties are chiefly grown hereabouts; but the wood was far from being in a condition of ripeness which many cultivators insist upon as necessary for high-class flowers. Yet the blooms produced by Mr. Ireland would give points to many at shows with high reputations. Mr. Ireland's collection contains all the best older varieties; but it is also rich in newer ones which, without an exception, have been so well timed as to give the most satisfactory results. Mrs. H. Weeks up to now, in many places in the North, has achieved the reputation of being a bad doer; but here we find several grand flowers. Mrs. G. W. Palmer was conspicuous, as were Western King, Mrs. W. H. Lees, Pride of Exmouth, Mrs. Hume Long, Gold Dust, M. Demay-Taillandier, Miss Goschen, Mrs. Gover, Olive Oclee, Ponderosum, Lady Byron, Mrs. Briscoe-Ironside, Lady Ridgway, Oceana, Col. T. C. Bourne, Mrs. E. G. Hubbuck, Edith Tabor, W. H. Godfrey, and Madame Carnot.

Brettargh Holt.

Under the charge of Mr. McQuaker, gardener to Chas. Walker, Esq., we found a large collection of well-developed blooms. The most noticeable were Lily Love, Duchess of Wellington, Van den Heede, Thérèse Rey, Madame Carnot, W. W. Coles (very grand), Chas. Davis, Interocean, Hairy Wonder, Col. Chase, M. Panckoucke, Eva Knowles, and Madame M. Ricoud.

Levens Hall.

This, the seat of Capt. Bagot, M.P., has a reputation to antiquaries for its old oak furniture, carvings, tapestry, and ancient armour. The gardens are noted for the extent and variety of specimens of topiary work, and it seemed as if the only thing modern about this unique place is the Chrysanthemums, and here even there are no large blooms in accord with modern ideas. We found, however, two houses full of profusely flowered bush plants exceedingly creditable to the courteous gardener, Mr. W. Gibson, and equally useful for either indoor or outdoor decoration.

Eversley, Milnthorpe,

The residence of P. Argles, Esq., is within view of the famed fells of Whitbarrow, the home of the lovely Primula farinosa. To suit the tastes and requirements of the ruling powers Mr. Cookson, the gardener here, confines his efforts to the production of smaller blooms for cut flower and decorative purposes, but these are of the best quality, giving evidence of both care and skill in their production.

Dalham Towers.

This is the seat of M. Broomley Wilson, Esq., where Mr. Sarples ably presides over the extensive garden establishment. The magnificent display of Chrysanthemums, numbering over 300 plants, and filling a large early vinery, testifies to Mr. Sarples' skill as a cultivator. We noted fine examples of Ethel Addison, Australian Gold, Exmouth Yellow, Phœbus, Madame Carnot, Mrs. Hume Long, The Queen, Mrs. E. G. Hill, Colonel Chase, Miss Goschen, Pride of Exmouth, Rose Wynne, L'Isere, Philadelphia, Hairy Wonder, and Mons Chenon de Leché.

Elleray, Windermere.

As the places included in the next day's programme laid further apart, we were early on the road to beat up Mr. Henderson, gardener to A. H. Heywood, Esq. The sloping banks of Windermere are noted for fine examples of Coniferæ, and we found them in their highly developed beauty. Here again the Chrysanthemums were a rich treat, remarkable for high colour and fine proportions. Some of the specimens will find their way to the great tournament at Edinburgh, and are quite good enough to uphold Mr. Henderson's reputation as an exhibitor. The following were grand:—Mons. Chenon de Leché, Beauty of Teignmouth, Phœbus, C. Davis, Mons. Panckoucke, Rose Wynne, Niveus, Western King, Mutual Friend, Ad. Chatin, Australian Gold, Modesto, Mons. Gruyer, Simplicity, Emily Silsbury, Edith Tabor, Miss Rita Schroeter, and Owen Thomas.

Cleve House, Windermere.

Mr. T. Winskill, gardener to J. R. Sladen, Esq., has arranged in the conservatory a beautiful display, so that every bloom comes directly into view. Amongst them are many flowers which would grace an exhibition stand, and some of the finest were Mons. Gruyer, Sunstone, Simplicity, Duchess of Wellington, J. Seward, Duchess of Fife, C. H. Curtis, Madame Carnot, and International.

Dalton Hall, Burton.

Mr. Moorhouse has for upwards of twenty-five years held the position of head gardener to E. G. Hornby, Esq., at this fine place, and is looked up to by the gardeners in the district as being the oldest Chrysanthemum grower, and still one of the best. A large collection is grown, and a few well selected novelties tried each year. Duchess of York, Deuil de Jules Ferry, Mutual Friend, Australian Gold, Noces d'Or, Mrs. Hume Long, John Seward, Madame Carnot, Oceana, Olive Oclee, Lady Ridgway, Graphic, Mrs. H. Lees, Miss Rita Schroeter, and Modesto, were all worthy of note, besides a host of the older varieties.

Thornleigh Burton.

This is the residence of R. Boardman, Esq., who with his gardener, Mr. C. Ellwood, are enthusiasts in Orchid culture. At the same time Chrysanthemums are considered of importance, and are well represented. Some excellent blooms of the following were in evidence—Sunflower, Queen of England, C. H. Curtis, Niveus, Thérèse Rey, Lady Saunders, Edith Tabor, Anna Hartshorn, G. C. Schwabe, Mons. Panckoucke, Phœbus, and Louise.

As darkness now intervened, and I was due in Liverpool next morning, several places where good collections are cultivated were of necessity left unvisited. I should like to add that it is somewhat surprising that amongst so many excellent cultivators, and as results prove, where climatic influences are favourable for high development, no attempt has been yet made to establish a Chrysanthemum show in Westmoreland. The town of Kendal would be a good rallying point for such a venture, which, if carried out, would provide a new sensation, and a great treat to the district.—Yorkshire Grower.

SHOWS.

GUILDFORD.—November 9th and 10th.

Although held in the old county town of Surrey this show is not a large one; but it certainly shows first-rate quality, and that is important. A much larger hall is needed to enable the show to be fully displayed, as at present it is divided. That want Guildford Borough should meet.

There was only one exhibitor in the larger group class, and a capital one, though the plants were rather too thickly set. Foliage plants are here admitted, and with excellent effect. The exhibitor was Mr. H. Cook, gardener to the Rev. F. Poynder, Stokes Hill, Guildford. With one-third more space allotted, this group would have been a very effective one. In the smaller group class of Chrysanthemums only the first prize was taken by Messrs. Hart & Sons, nurserymen, Guildford, solidly built; Mr. Harris, gardener to Miss Thrupp, Merrow Grange, coming second; and Mr. A. Jenner, gardener to Mrs. Simpson, Guildford, was third. Table plants were numerous and good, the best six coming from

Mr. Seabrook, gardener to R. N. Stearns, Esq., Woking, Mr. Harrison being second.

The leading class in the cut bloom section was for twenty-four Japanese, and here was keen competition, Mr. H. Paddon, gardener to Colonel Ricardo, Bramley Park, taking first place with a superb lot of blooms, having of whites Simplicity, Madame Carnot, Miss Elsie Teichmann, Mrs. J. Lewis, Pride of Exmouth, Mrs. Wecks, and L'Isere; yellows—Phœbus, the champion blooms 8 inches deep; Oceana, Edith Tabor, A. H. Wood, and Australian Gold. Other colours were found in Madame Rozain, Australie, Viviand Morel, Mons. Chenon de Leché, Lady Ridgway, Lady Hanham, Dorothy Seward, President Borel, and others. Mr. C. Baker, gardener to W. Webb, Esq., Ewhurst, was second, having also very fine blooms, including Modesto, Viscountess Hambledon, Mons. Chenon de Leché, Graphic, Pride of Madford, Madame Carnot, with others. Mr. R. Turvey, gardener to Sir Richard Webster, M.P., Cranleigh, was third.

Mr. Paddon was again first with twelve Japs, having splendid blooms; Mr. Fageant, gardener to F. Wellesley, Esq., Woking, following close with capital flowers; and Mr. Baker was a good third. In the class for twelve incurved Japanese Mr. Paddon was the only competitor, having very fine Australian Gold, H. Jacotot fils, Wilfrid Marshall, Boule d'Or, Mrs. Weeks, Pride of Madford, Modesto, Australie, Madame Gustave Henry, and Joseph Brooks.

Mr. H. Barrow, gardener to Mrs. Hugorin, Bramley, was first with six Japanese, having superb blooms. With six of one variety Mr. Paddon was well first with a fine Phœbus, Mr. Turvey coming second with the same variety, and Mr. Hange, gardener to W. Major, Esq., had fine Madame Carnots.

In the class for twenty-four incurved Mr. Paddon had the field to himself, showing fine samples of C. B. Whitnall, Mrs. R. C. Kingston, C. H. Curtis, W. Tunnington, V. Tomlin, J. Agate, Robt. Cannell, Globe d'Or, and Mrs. S. Coleman. In the class for twelve blooms the same exhibitor was again first with capital flowers of great excellence, Mr. C. Baker following very close; Mr. T. Osman of Ottershaw Park coming third. In his stand C. H. Curtis was the premier bloom.

Mr. Barrow took first prize for six blooms in this section also. With six of one variety Mr. Paddon again came first with good Mrs. Heale, beating C. H. Curtis, blooms of which from Mr. Heffell, Sheire, were second, Major Bonnaffon coming third. It is very inconvenient that both Curtis and Bonnaffon should be so much alike. They should not be admitted into one stand.

Mr. Paddon still had not done winning, for he was placed first with twelve splendid Anemones, including Sir W. Raleigh, Queen Elizabeth, Mdlle. Cabrol, Minnie Chate, Delamere, and Gladys Spalding. With twelve blooms of not less than six varieties of Japanese Mr. A. A. Wheeler, Bramley, was first. There was a keen competition for twelve blooms, set up in sixes, in pairs of vases, the heaviest and fine flowers coming from Mr. Martin, gardener to Col. Tredcroft; but how the Judges made this award when the blooms were set up in flower-pots papered round it is hard to understand. On the second day the blooms had largely toppled over. Mr. J. Jones, gardener to T. Lucas, Esq., Send, was second, set up in proper vases, and on the second day these would have been placed first easily.

LEEDS.—November 9th and 10th.

Held under the management of the Leeds Paxton Society. Upwards of sixty classes, including groups, stove and greenhouse plants, table plants, and cut blooms, were keenly contested, and well filled with exhibits of a very high order of merit.

Six long tables across the Hall were filled with cut blooms, making an imposing display. The Right Hon. the Earl of Harrington, Elvaston Castle (Mr. Goodacre, gardener), was awarded the first prize for eighteen incurved, exhibiting very neat blooms of C. H. Curtis, Queen of England, Mrs. S. Coleman, Duchess of Fife, Golden Empress, Violet Tomlin, J. Doughty, Princess of Wales, Mons. R. Bahuant, Lord Alcester, Miss M. A. Haggas, Mrs. H. Flight, Leonard Payne, Globe d'Or, and J. Agate. Mrs. A. Wilson, Tranby Croft (gardener, Mr. Leadbetter), was placed second, showing good blooms of C. H. Curtis, J. Agate, and Mrs. R. C. Kingston. Mr. G. B. Cockburn, Lingdale Lodge, Birkenhead (gardener, Mr. Burden), was third. The class for twenty-four Japanese was an exceptionally strong one, the first prize falling to Mr. R. A. Bowring, The Heath, Cardiff (gardener, Mr. Joy), who showed Simplicity, John Seward, Viviand Morel, C. Davis, Duke of York, Phœbus, Australian Gold, Pride of Exmouth, Miss Elsie Teichmann, H. J. Hubbuck, Mrs. H. Kloss, Edith Tabor, Chenon de Leché, Mr. E. Tate, Mrs. G. W. Palmer, General Roberts, Etoile de Lyon, and Madame Carnot. Mr. Leadbetter was second; and Mr. J. W. Backhouse, Beverley, third.

Mr. Leadbetter secured first honours for twelve incurved with Alfred Salter, Queen of England, C. H. Curtis, Ma Perfection, J. Lambert, Empress of India, Baron Hirsch, Mr. J. Murray, and J. Agate. The local classes for cut blooms were greatly in advance of any previous show, and reflected high credit on the exhibitors. Mrs. Bowering, Allerton Hall, Gledhow (gardener, Mr. W. Moore), was placed first for a fine stand of twelve incurved, showing neat examples of J. Agate, Mrs. R. C. Kingston, C. H. Curtis, Duchess of Fife, Golden Empress, Empress of India, Perle Dauphinoise, Brookleigh Gem, J. Doughty, Robt. Petfield, and Madame Darier. Sir Jas. Kitson, Bart. Gledhow Hall (Mr. Grix, gardener), was second; and Mrs. Tetley, Foxhill, Weetwood (gardener, Mr. Eastwood), third. Mr. W. Moore again secured first prize for twelve Japanese, with good examples of Viviand Morel, Ed. Tabor, Lady Ridgway, C. Davis, Thos. Wilkins, Niveus, G. C. Schwabe, Pride of Madford, Australian Gold, Mons. Chenon de Leché, Mons. Panckoucke, Madame M. Ricoud; Mr. Grix second; Mr. Eastwood third. For cut blooms, open to members of the Leeds Paxton Society only, Mr. Moore secured first for a stand of twelve Chrysanthemums; Mr. Pratt Clark, Rodley, second; and Mr. Eastwood third.

Baskets of Chrysanthemums were most tastefully and effectively arranged. Mr. A. J. Hall, Harrogate, was first; and Messrs. Walker Bros., florists, Covered Market, Leeds, second. Messrs. Hall, Walker, Portway, and Backhouse secured prizes for Chrysanthemum bouquets, bridal bouquets, ladies' sprays, cut flowers, in the order named, with fine examples in each class.

Groups of Chrysanthemums were closely contested. Mr. Moore secured premier honours with an exceedingly neat and effective arrangement, relieved with light Palms and Grasses, and margined with Maidenhair Ferns; all pots and stakes were kept out of sight, and the plants effectively graded in height and contour. The second prize was awarded to Mr. Mason, whose arrangement was rather lighter yet very effectively arranged, and no doubt lost weight in the competition by reason of a less finished margin. Mr. Eastwood was placed third; and Mrs. Taylor, Buckingham House, Headingley (gardener, Mr. Leech), fourth.

LIVERPOOL.—November 9th and 10th.

Having described the leading class of cut blooms in last week's issue, which was won by Mr. Geo. Burden, gardener to G. B. Cockburn, Esq., Oxton, the next in importance was for eighteen incurved, this being secured by Mr. P. Greene, gardener to Thos. Gee, Esq., Allerton, with a nice even stand, the best blooms being C. H. Curtis, Mr. J. Kearn, Violet Tomlin, Robert Petfield, Queen of England, Violet Foster, and Globe d Or. Mr. Haynes, gardener to Mrs. Nicholson, Oswaldcroft, Wavertree, was an excellent second. For twelve incurved, Mr. J. Bracegirdle, gardener to W. H. Watts, Esq., Elm Hall, Wavertree, won with a splendid stand, C. H. Curtis, J. Agate, and Queen of England being capital. Mr. J. Williams, gardener to C. J. Proctor, Esq., Boscobel, won for six, the maiden class being taken by Mr. E. Foulkes, gardener to G. E. Marsden, Esq.

The Japenese section was well filled, Mr. Haynes having a handsome stand, comprising Chas. Davis, Australie, Mutual Friend, R. Dean, John Seward, Simplicity, and Lady Ridgway as the best. Mr. J. Davies, gardener to E. Ellis, Esq., Dee View, Heswall, was a close follower. Mr. J. Young, gardener to the Cheshire Lines Committee, Otterspool, was deservedly first for twelve Japanese, specially good being M. Chenon de Leché, Pride of Madford, and Dorothy Seward. Mr. J. George, gardener to Mrs. Ihler, Huyton, had bright, fresh-coloured flowers for six.

Staked and trained plants were a great improvement, Mr. T. Gowen, gardener to J. A. Bartlett, Esq., Mossley Hill, winning for four trained large flowering, one pyramid, and six untrained. Mr. J. Rose, gardener to J. G. Kitchen, Esq., Fernwood, Huyton, for three trained Pompons and one, all excellent. Mr. W. Wilson, gardener to H. Cunningham, Esq., Gateacre, won with one large flowering, also taking seconds in several other classes; and Mr. J. Harrison, gardener to Mrs. W. G. Bateson, Allerton, won with one stand, and also with a grand group of Chrysanthemums, bright and effective. Mr. Bracegirdle following was also excellent. The latter was second to Mr. Gowen for a group of Chrysanthemums and foliage plants, both exhibitors deserving much credit. A class for twelve Japanese, distinct, in 5-inch pots, one bloom on a plant, plants not to be propagated before the first week in June, was won by Mr. Wharton, gardener to J. Findlay, Esq., who also won with Pompons, the classes for Anemones and Reflexed being taken by Mr. G. Eaton, gardener to W. H. Shirley, Esq., Allerton, and Mr. W. Wilson.

Orchids made a fine display, were well flowered, but lacking somewhat in variety. Mr. E. R. Finch, gardener to J. Smith, Esq., Newstead, Wavertree, took the prizes for three and one, Mr. Bracegirdle following, both having handsome sets. The Jno. Cowan & Co., Ltd., prize for two cool house Orchids was won by Mr. Randall, gardener to A. L. Jones, Esq. Undoubtedly one of the prettiest features in the show was the class for a group of flowering and foliage plants, arranged for effect in baskets 3 feet 6 inches in diameter. The winner was Mr. Taylor, gardener to E. Pryor, Esq., Aigburth, with an arrangement which may in one word be described as a masterpiece, the others being most effective. For a vase of Chrysanthemum blooms, arranged for effect, Mr. Holford, gardener to C. Maciver, Esq., won; Mr. Haigh, gardener to W. H. Tate, Esq., Woolton, taking it for a basket arranged for effect.

The Grapes were of superb quality. Mr. Elsworthy, gardener to W. L. and R. F. Gladstone, Court Hey, Broadgreen, won for a collection of six dishes of fruit and two bunches Black Alicante, all well finished. Mr. Ferguson's Barbarossa and the two handsome Gros Colman in the prize four staged for Mrs. H. Bright, Knotty Ash, will be remembered. Messrs. Eaton and Garnett had good quality in classes for white Grapes. The principal prizewinners for Pears were Mr. Bible, gardener to Lord Trevor, and Mr. Hannagan, gardener to Thos. Comber, Esq., Chester, whilst nearly every open class for Apples was taken by that good cultivator, Mr. J. Davies, gardener to W. E. King-King, Esq., Bodenham Manor, with fruit superior in every way to American samples. Other prizewinners in local classes were Messrs. Leadbetter, J. Williams, W. Mackarell, and J. Lee.

Certificates of merit were unanimously granted to Messrs. R. P. Ker and Sons, Aigburth Nursery, for a greatly admired bank of Cyclamens in variety, a splendid feature in the show; to Messrs. Dobbie & Sons, Rothesay, for a charming collection of cut Chrysanthemums containing many fine new varieties, the blooms being of excellent quality; for a fine stand of new Giant Violets staged by Messrs. J. House & Son, Westbury, Bristol; to Mr. Winkworth, gardener to R. Brocklebank, Esq., Haughton Hall, Tarporley, Cheshire, for Black Hamburgh Grapes

taken from a Vine growing on a south wall. They were fairly large, well coloured, and flavour excellent. The same award was granted to Mr. Taylor for a splendidly bloomed plant of Viviand Morel. The silver and silver-gilt Ryecroft medals, for which the Committee are kindly indebted to Mr. H. J. Jones of Lewisham, were won by Mr. Bracegirdle and Mr. Young.

BIRMINGHAM.—November 9th, 10th, and 11th.

The thirty-seventh annual exhibition of Chrysanthemums, fruits, and vegetables of the Birmingham Society was held in Bingley Hall, under most auspicious circumstances, and proved to be the best yet held by the Society. To such an extent have the later shows increased in popularity and dimensions that the Committee has at last been compelled to seek for some other place with more accommodation than the comparatively spacious Town Hall could afford, resulting in the selection of Bingley Hall, and on the ground floor of which a bird's eye view from the surrounding gallery was obtained of the whole of the exhibition. With further characteristic enterprise the Committee commendably signalised the record reign of the Queen by increasing the number and value of the prizes, and which was further augmented by generous supporters giving various handsome cups. The total value of the prizes offered is £500, or about £200 more than on any previous occasion. It may be remarked that the whole of the vast Hall was illuminated for the occasion by the "New Intensified Gaslight" Company, and, but for which great acquisition the comparatively feeble light afforded by the old system would have proved disastrous. We are informed that upwards of 32,000 people visited the show.

To the visitors in general undoubtedly the most attractive feature in the show was the splendid and large display of "floral arrangements," occupying spaces not exceeding 20 feet by 5 feet, and Messrs. Perkins and Sons, Coventry, added lustre to their reputation by securing the coveted first prize—viz., the City of Birmingham Victorian Jubilee silver cup, value £25, for a grand display of bouquets, baskets, wreaths, and crosses. Mr. John Crook, Birmingham, carried off a silver cup, value £17 10s., as second prize, with an excellent arrangement. The third prize silver cup, value £10, was awarded to Messrs. Jones & Sons, Shrewsbury, for also a very good, though somewhat heavier arrangement; and the fourth prize silver cup, value £6, fell to Messrs. John Pope & Sons, Birmingham.

A new feature was that in the shape of a class for "collections of British grown fruit," to occupy a space not exceeding 50 square feet. There were three competitors, and the first prize, the Gardeners of Birmingham Victorian Diamond Jubilee silver cup, was taken by Mr. J. H. Goodacre, Elvaston Castle Gardens, for a fine assortment of Grapes, Pines, Oranges, Melons, Apples, and Pears, the greater variety of sorts of fruit having proved the chief factor. The second prize, a silver cup, value £10, was worthily won by Messrs. G. Bunyard & Co., Maidstone, with a grand collection of Apples and Pears, the former especially being in most cases very fine and richly coloured. The third prize exhibit was that of Mr. J. Colwell, Sidmouth, Devon.

The groups of Chrysanthemums arranged for effect in circular form in a space 16 feet in diameter, Ferns and foliage plants admissible, and of which there were seven exhibits arranged in a line, with plenty of space between and around them, proved to be a source of much interest and attraction. They were chiefly pyramidal in shape, and surmounted with specimen Palms. The first prize of £10 and the Society's Victorian Diamond Jubilee gold medal fell to Mr. Thomas, gardener to J. Whitefield, Esq., Moseley. The finely developed blooms and substantial foliage, supplemented with elegant Crotons and Palms judiciously intermixed, was much admired. The second position was accorded to Mr. G. Menzies, gardener to Richard Cadbury, Esq., Moseley, the prize being £7 and the Society's silver medal. The third prize of £5 and the Society's bronze medal was secured by Mr. W. H. Westbury, gardener to Charles Showell, Esq., Edgbaston. The fourth prize went to Mr. Oliver Brasier, gardener to Lady Martineau, Edgbaston.

There was also a keen contest in the class for groups occupying oval spaces, 10 feet by 7 feet, one exhibitor having inadvertently chosen a circular space. The first prize and a silver challenge cup, given by Mr. R. Sydenham, were won by Mr. Lewis Fewkes, gardener to T. Clayton, Esq., Castle Bromwich, with a highly creditable group. The second prize and the Society's silver medal were awarded to Mr. W. Torevall, gardener to Mrs. Scarf, King's Heath. The third prize fell to Mr. C. Batchelor, gardener to Mrs. Armfield, Edgbaston; and the fourth to Mr. E. J. Musten, gardener to A. F. Bird. Esq., Moseley. Specimen plants of Chrysanthemums were hardly up to the usual form seen at the Society's shows. Mr. Oliver Brasier, however, in the class for nine large flowering (Japanese excluded) was awarded the first prize for very good examples. The second position was assigned to Mr. J. Maldrem, gardener to George Cadbury, Esq., Northfield; and the third to Mr. J. V. Macdonald. The remaining seven smaller classes for Chrysanthemums in pots were well represented by Messrs. Brasier, A. Cryer, J. Maldrem, Macdonald, and W. Otway.

Cut blooms were one of the leading features, and the various classes were keenly contested. For twenty-four incurved, distinct, the first prize and the Society's V.D.J. gold medal fell to Mr. J. H. Goodacre, Elvaston Castle, for superb examples of the leading varieties, his best blooms being such as C. H. Curtis, Lord Alcester, Miss V. Tomlin, Mrs. S. Colman, Prince of Wales, Miss M. A. Haggas, D. B. Crane, and Madame Darier. The second prize was awarded to Mr. C. Crookes, gardener to Lady Hindlip, Droitwich. His examples of J. Agate, Major Bonnaffon, C. H. Curtis, Jeanne d'Arc, and Lord Alcester were especially good. The third prize went to Mr. J. Copson, gardener to Mrs. P. Phipps, Northampton; whilst the fourth and fifth prizes fell to Mr. W. Mease, gardener to A. Tate, Esq., Leatherhead, and Mr. R. Jones, gardener to C. A. Smith-Ryland, Esq., Warwick, respectively. For eighteen blooms of incurved, distinct, Mr. C. Crookes; Mr. J. Parker, gardener to W. Roberts, Esq., Stourbridge; and Mr. J. Gould, gardener to J. Entwistle, Esq., were the winners in the order named. For twelve incurved, distinct, the first prize fell to Mr. C. Crookes, the second to Mr. F. G. Foster, Havant, and the third to Mr. J. Copson, all having very good examples.

The Japanese section was very strongly represented, both in numbers and quality; and the premier honours fell to Mr. W. Gleeson, a new exhibitor here, from Stanmore, for a splendid collection of twenty-four blooms, distinct. His example of Simplicity attracted much attention, his other best blooms being Phœbus, Mons. Chenon de Leché, Edith Tabor, Viscountess Hambledon, Oceana, Mrs. H. Payne, and Duke of York. The second prize was secured by Mr. W. Mease, whose best blooms were Mrs. J. Lewis, Madame Carnot, E. Molyneux, Phœbus, Australian Gold, Mrs. C. Blick, Madame G. Henri, and yellow sport from Madame Carnot. The third prize fell to Mr. C. Crookes, and the fourth to Mr. C. Bellis, gardener to Sir E. H. Boughton, Ludlow. The fifth and the sixth prizes went to Mr. W. Pearce, gardener to S. Loder, Esq., Wecdon, and Mr. J. Copson.

For eighteen blooms, distinct, the first prize was well won by Mr. R. Jones, the second by Mr. F. G. Foster, and the third by Mr. H. Liney, gardener to W. M. Lowe, Esq., Wellesbourne. For twelve Mr. R. Jones was the only exhibitor, and was awarded the first prize with a fine exhibit. The competition in several other cut bloom classes was keen. Primulas and Cyclamens with hand bouquets were excellent in all respects.

Fruit was a prominent feature and deserving of special record. Grapes were strongly in evidence, and our sympathy was extended to the several non-successful exhibitors of meritorious productions. Amongst the prize-winners were Messrs. S. Bremmell, gardener to H. H. F. Hayhurst, Esq.; J. H. Goodacre; J. Jones, gardener to Mrs. Need, Malvern; T. J. Nelson, gardener to A. Barnes, Esq., Chesterfield; J. Jones; A. Chandler, gardener to A. James, Esq., Rugby; W. Harman, gardener to the Earl of Denbigh, Lutterworth; J. Lambert, gardener to the Earl of Powis, Powis Castle; and H. Russell, Worcester. Apples were exceedingly fine and numerous, while Pears were finely represented. Vegetables proved to be a fine class, and the competition very strong.

Messrs. Cutbush & Son, Highgate, exhibited (not for competition) a fine group of Begonia Gloire de Lorraine. A gold medal was awarded to Mr. W. J. Empson, gardener to Mrs. Wingfield, Ampthill, Beds, for a remarkable display of fruits and vegetables (not for competition). An exceedingly fine and interesting collection of Cacti was exhibited by Mr. F. A. Walton, The Friary, Handsworth, Birmingham.

YEOVIL.—November 10th.

This Society still retains its popularity among both exhibitors and sightseers, and another very successful exhibition was held in the Town Hall and Corn Exchange. Mr. E. H. Oakley is the Honorary Secretary, and performs his duties to the satisfaction of all concerned.

There were fewer large groups of Chrysanthemums than usual, but the quality and arrangement of those shown left little to be desired. For one of the largest size Mr. A. Crossman, gardener to J. Brutton, Esq., was well first, his front rows of miniature plants giving a good finish to the group. Mr. W. Rendle, gardener to H. S. Bennett, Esq., was a creditable second, but had evidently reserved his strength for the smaller group class, where he was a good first. Bush plants were better than usual. Mr. G. Gillingham, gardener to Miss Phelps, was first; Mr. G. Gilham, gardener to W. J. Davis, Esq., second; Mr. F. Biss, gardener to Jabez Bradford, Esq., third, and Mr. A. Crossman fourth.

All the cut bloom classes were well filled, and a fine display was made. For thirty-six blooms of Japanese varieties the first prize was £5, and six growers competed. Mr. A. Robinson, gardener to J. S. Dunn, Esq., Castle Carey, was placed first, his collection comprising grand blooms of Mutual Friend, Reine d'Angleterre, Primrose League, Australie, Silver King, J. Seward, Graphic, Duke of York, Mons. Panckoucke, Madame Rozain, Dorothy Seward, International, Phœbus, Good Gracious, Rose Wynne, Lily Love, G. Schwabe, Thérèse Rey, and Mons. Chenon de Leché. Mr. J. Lloyd, gardener to Vincent Stuckey, Esq., Langport, was a very close second, his most noteworthy blooms being Simplicity, Graphic, Souvenir de Petite Amie, Chenon de Leché, Mutual Friend, Bellem, Australie, Mons. Gruyer, E. J. Whittle, and Florence Davis. Mr. A. J. Allsopp, gardener to Viscount Portman, took the third for a good array of fresh well coloured blooms, the fourth prize going to Mr. J. Horner, gardener to A. D. Paull, Esq., Chard.

With eighteen Japanese varieties Mr. J. Lloyd was first, Mr. A. Robertson followed, while the third prize went to Mr. F. W. Pitman, gardener to F. G. Lemon, Esq., Castle Carey, all staging superior blooms of the best varieties. For twelve varieties Mr. T. J. Stone, gardener to Colonel Berkley, was first, his stand including excellent blooms of Viviand Morel, C. Davis, Edith Tabor, T. Wilkins, and Etoile de Lyon. Mr. A. Crossman was second, and Mr. H. S. Bennett third. Some of the best blooms in the show were to be seen in the classes for six blooms of one colour. Mr. A. Robertson was first for a yellow variety, showing Phœbus; and also for a white variety, with Mdlle. Thérèse Rey. In the any other class Mr. Pitman won the first prize with Mons. Chenon de Leché, the competition in each instance being keen. Liberal prizes were offered for single specimen blooms. Mr. A. Crossman was first in both the open and local classes with grand blooms of Pride of Yeovil, a nearly white refined sport from Viviand Morel, which has been repeatedly shown

successfully in previous years. Incurved varieties were not largely represented. Mr. J. Lloyd was the most successful exhibitor of these.

Fruit and vegetables were numerous and good, while trade exhibits were extensive and of marked excellence. The collection of Apples shown by Messrs. R. Veitch & Son, Exeter, was particularly good, finer fruit rarely being seen. Messrs. J. Scott & Co. also made an admirable display of fruit and Roses; and Messrs. Jarman & Co., Chard, had a representative collection of Apples and vegetables.

BOURNEMOUTH.—November 10th and 11th.

This very fashionable and popular seaside resort held its eleventh annual exhibition on the above dates at the Hotel Mont Dore Winter Gardens. The result was a splendid success. The groups were very artistically arranged, and most imposing. The cut flowers were numerous, and of high quality. The classes for decorated tables of cut Chrysanthemums, epergnes, bouquets, baskets, and the various others gave a pleasing variety, and added considerably to the interest of the exhibition. Fruits, especially Grapes, and also the vegetables, were of very high quality; and a most remarkable exhibit in this line at this time of the year was sixteen pots of Strawberries in full fruit, bearing a fine crop of large ripe fruit, reminding one of April or May, instead of November. These were exhibited, not for competition, by Mr. Woodford, gardener to Mrs. Trevor Goff, Everton Grange, and the varieties were Noble and Royal Sovereign.

The leading prize for cut blooms was for thirty-six Japanese, not more than two of any one variety, and here her Majesty the Queen, Osborne, Isle of Wight (gardener, Mr. G. Nobbs), scored a popular victory with a fine stand of fresh bright flowers of good substance, consisting of the following varieties:—Edith Tabor (2), fine; Hairy Wonder (2), very fine; Chas. Davis (2), Phœbus (2), Etoile de Lyon (2), James Bidencope, Viviand Morel (2), Simplicity, L'Isere (2), Mrs. C. Blick, Mrs. C. H. Payne, Reine d'Angleterre (2), Madame Carnot, M. Chenon de Leché (2), fine; Amiral Avellan, Mrs. E. W. Clarke, Mrs. W. H. Lees, Australie (2), very large; Silver King, Mdlle. Thérèse Rey, Mrs. H. T. Drewett, Baron A. Rothschild, Mons. Panckoucke, Occana, fine; Graphic, and W. T. Newett. Mr. Thos. Wilkins, gardener to Lady Theodora Guest, Blandford, was second with an excellent lot of blooms; and Mr. D. Brown, gardener to Mrs. Atkyns Wood, Kinton House, Christchurch, third. So good were the exhibits in this class that extra prizes were awarded to Mr. Woodford, gardener to Mrs. Trevor Goff; and Mr. T. Boote, gardener to Mrs. F. Ricardo.

In the class for twelve Japanese Mr. Thomas Wilkins was to the front with fine Mrs. Hermann Kloss, Pride of Exmouth, Yellow Madame Carnot, Beauty of Exmouth, Eva Knowles, Mutual Friend, Modesto, Viviand Morel, Duke of York, Mrs. R. Jones, International, and Etoile de Lyon; Mr. Woodford, second; Mr. G. Nobbs, third. Two extra prizes were also awarded in this class. The premier Japanese bloom in the exhibition was found in a stand in this class, exhibited by Mr. H. J. Harvey, gardener to A. R. Sheriden, Esq., Hampton Court, Dorset, a very fine Australian Gold, which received the prize. For six Japs, any one variety, Mr. Harvey was first with Madame Carnot; Mr. W. J. Grace, gardener to W. R. Neave, Esq., Fordingbridge, second, with Phœbus; and Mr. Nobbs third, with Mdlle. Marie Hoste. For six Japs in a vase Mr. J. K. Ingram, Parkstone, was first with fine Australian Gold; Mr. A. H. Newell, gardener to W. Petch, Esq., second, with Thos. Wilkins; third, Mr. L. J. Newell, gardener to W. H. Dove, Esq., Branksome Tower Hotel, with Madame Carnot.

There were some very highly finished stands of incurved exhibited. In the class for twelve, distinct, Mr. Woodford was well to the front with Violet Tomlin, Lucy Kendall, Princess of Wales, Queen of England, Golden Queen, Prince Alfred, and others. Second, Mr. T. Boote. Third, Mr. T. Wilkins. For six of any one incurved Mr. W. J. Grace was well first with deep and highly coloured flowers of Mrs. R. C. Kingston, one of which, an extra deep flower, was awarded the prize for the premier incurved bloom in the exhibition. Second, Mr. Gallop, gardener to H. M. Middleton, Esq., Dorchester, with Chas. Curtis. Third, Mr. Harvey, with Ma Perfection. The various classes devoted to amateurs and the local divisions were exceedingly well filled, and the exhibits were very meritorious.

In the class for a group of Chrysanthemums and foliage plants, arranged in a space of 100 square feet, Messrs. G. Watts & Sons, Bournemouth, put up a tasteful arrangement; second, Mr. H. Haskins, Branksome, for a very pretty exhibit. The N.C.S. certificate of merit and the Society's medal was awarded to this first prize group.

The competition for a 50 feet group of Chrysanthemums, for which a silver challenge cup is offered, was well contested by three very even exhibits, Mr. Newell, gardener to W. H. Dove, Esq., Branksome Tower Hotel, winning by very superior and fresh flowers, well blended and arranged. The second and third gave some difficulty. It was quality versus effect, and as the two Judges were divided, two others that were officiating were asked, and as they were also divided, it was decided to give them an equal second, so close were they considered to be. Mr. C. W. Barrett, gardener to G. J. Fenwick, Esq., Bournemouth, had the brightest and dwarfest arrangement. The smaller groups of 40 feet helped very materially towards the exhibition, one side of the Hall being devoted to them. The first prize, silver medal and money prize, was won by Mr. G. Shave, gardener to W. W. Moore, Esq., Bournemouth; second, Mr. W. F. Machin; third, Rev. H. Burrows; fourth, Mr. W. Hoare.

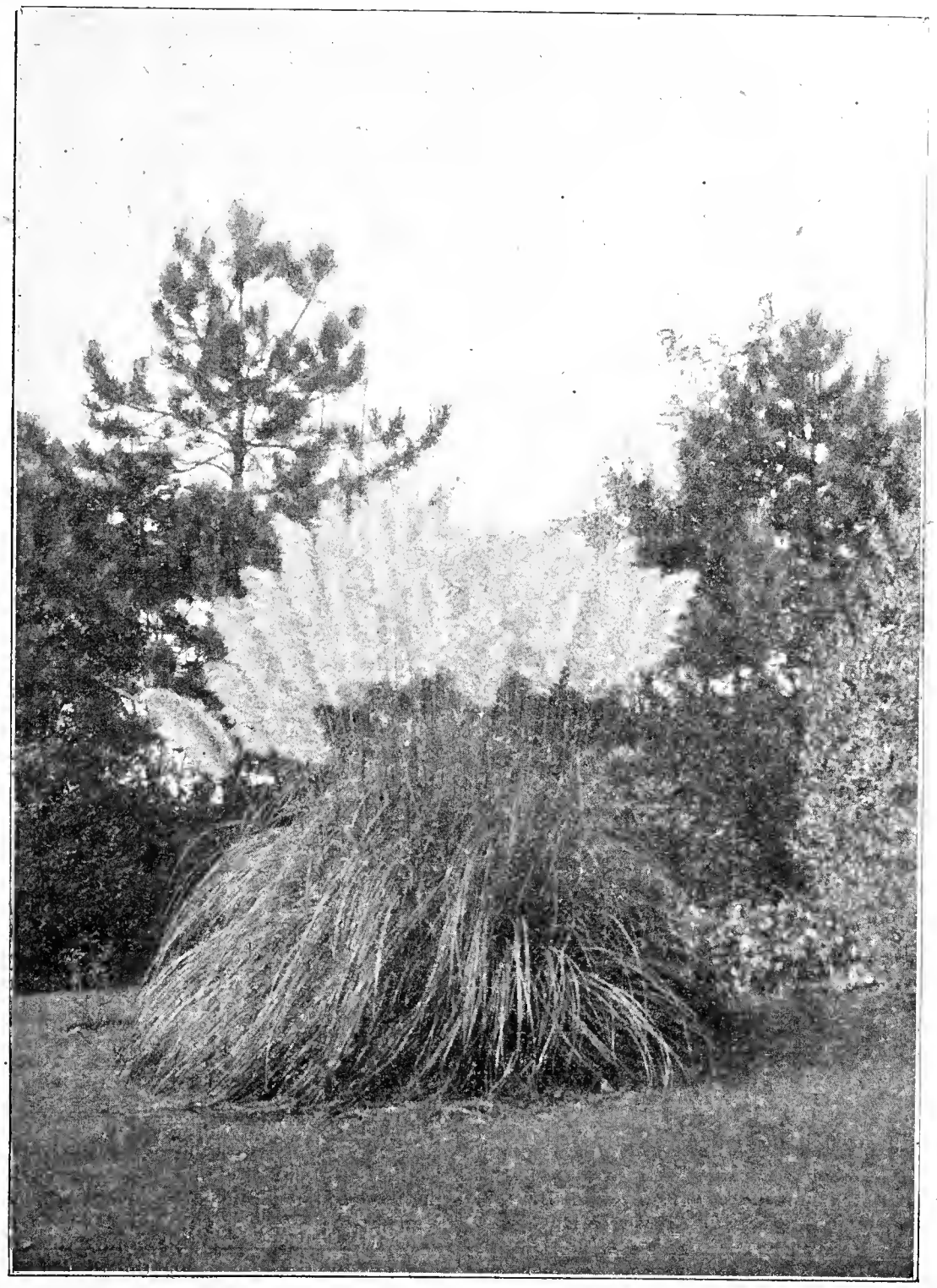

Fig. 72.—Pampas Grass in Macrocarpa, Ventnor. (*See page* 474.)

The exhibits in the specimen plant classes were mostly bush specimens and cut-backs, W. H. Lincoln, Chas. Davis, Florence Davis, and Viviand Morel being the best varieties; and Mr. G. Eldridge, Mr. Chas. Barrett, Mr. W. H. Dove, and Mr. C. W. Barrett winning the chief prizes. Worthy of mention were the tables of cut blooms on stems with foliage on a space 5 feet by 4 feet, to illustrate the decorative value of the Chrysanthemum. Mr. W. W. Moore was first with fine blooms, arranged with light Palms; Mr. G. J. Fenwick second; Mr. W. H. Dove third. For a similar sized table, showing the different sections of Chrysanthemums, Mr. W. W. Moore was again first; Mr. J. S. Sellon second; Mr. Chas. Barrett third.

BROMLEY.—November 10th and 11th.

The sixteenth annual show of the Bromley District Chrysanthemum Society was held in the Grand Hall, Bromley, and was the best show the Society has held, both in the number of exhibits and the quality of the blooms.

The chief interest was in the cup class for twenty-four Japanese, distinct, and twenty-four incurved, not less than eighteen varieties nor more than two of one variety. Six competitors entered, Mr. Harvey, gardener to R. B. Martin, Esq., Chislehurst, being placed first with a very heavy stand, composed of the following:—Japs: Prefet Robert, Mrs. C. Blick, Madame M. Ricoud, Phœbus, M. Chenon de Leché, Miss D. Shea, good; C. Davis, V. Morel, W. Fyfe, Madame Carnot, La Colosse Grenobloise, Australie, Mutual Friend, Mons. G. Biron, International, Mons. Gruyer, The Graphic, M. Demay-Taillandier, Lady Hanham, Etoile de Lyon, Elsie Teichmann, and G. C. Schwabe. Incurved: C. Curtis, Queen of England (2), Mrs. Coleman, Lord Alcester, W. Tunnington, Mrs. Heale, Mrs. R. C. Kingston, Golden Empress (2), Mrs. J. Eadie, good colour; Duchess of Fife, J. Doughty (2), Mrs. J. Kearn, Major Bonnaffon, J. Lambert, Miss Haggas, Empress of India, Princess of Wales, Bonnie Dundee, Mrs. R. King, Jeanne d'Arc, and R Cannell; Mr. C. Payne, gardener to C. J. Whittington, Esq., last year's winner, being second; Mr. R. Leadbetter, gardener to A. G. Hubbuck, Esq., Chislehurst, third, and Mr. E. Dove, gardener to C. B. Fry, Esq., Bickley Hall, fourth.

For twelve Japs and twelve incurved, distinct, Mr. J. Lyne, gardener to H. F. Tiarks, Esq., Chislehurst, was first with the following Japs:—Mons. G. Henry, M. Panckoucke, Mrs. H. T. Drewett, Mr. G. Warren, Mrs. C. Blick, M. Hodgson, Mrs. H. Weeks, Duke of York, Miss E. Teichmann, Phœbus, M. Carnot, V. Morel. Incurved: Mrs. R. C. Kingston, J. Lambert, Mrs. Coleman, Duchess of Fife, Major Bonnaffon, J. d'Arc, C. Curtis, J. Agate, Violet Tomlin, Mr. J. Kearn, M. Desblanc, Princess of Wales. Mr. H. Redden, gardener to G. W. Bird, Esq., West Wickham, was second. For twenty-four Japs, distinct, Mr. C. Blick, gardener to Martin R. Smith, Esq., Hayes, was first with a very even stand. Mr. J. Blackburn, gardener to J. Scott, jun., Esq., Elmstead, Chislehurst, was second; and Mr. E. Mills, gardener to F. Lloyd, Esq., Coombe House, Croydon, third. For six Japs, six incurved, and six reflexed, Mr. W. Thomas, gardener to J. Greig, Esq., Chislehurst, was first, being closely run by Mr. Lyne, second; and Mr. W. Pascoe, gardener to Capt. Torrens, Hayes, third.

For twelve incurved, distinct, there were ten competitors. Mr. Prebble, gardener to M. Hodgson, Esq., Shirley, took first with C. Curtis, Baron Hirsch, D. B. Crane, J. d'Arc, Miss Haggas, Brookleigh Gem, W. Tunnington, Violet Tomlin, Bonnie Dundee, Duchess of Fife, Globe d'Or, Lord Alcester. Mr. Lyne was second, and Mr. Harvey third. For six incurved there was again keen competition. Mr. Harvey was first; Mr. G. B. Lees, gardener to R. de Quincy, Esq., Oakwood, Chislehurst, was second, and Mr. Mills third.

For twelve Japs, distinct, the stands were all very close in point of merit, Mr. Mills eventually taking first place. The blooms were Madame Carnot, C. Davis, Phœbus, G. Warren, Prefet Robert, Swanley Giant, Australie, Hairy Wonder, M. Chenon de Leché, M. Panckoucke, V. Morel, and Louise, a massive bloom; Mr. Blick was second, and Mr. Pascoe third. For six Japs, distinct, Mr. Blick was first; Mr. Budworth, gardener to F. G. Powell, Esq., Swanley, second; and Mr. Mills third. For six Anemones Mr. E. Stone, gardener to C. D. Clark, Esq., Hayes Lane, was first with Lady Margaret, M. Panckoucke, Junon Descartes, Queen Elizabeth, and John Bunyan; Mr. Lyne second, and Mr. Pascoe third. For twelve Pompons, Mr. Pascoe was first, and Mr. Dyer, gardener to T. Peacock, Esq., Croydon, second, there being only two competitors.

For six incurved, one variety, Mr. Harvey was first with Queen of England, very even, well-finished blooms; Mr. Payne second with Princess of Wales; Mr. Lyne third with C. Curtis; Mr. Brister an extra with the same variety. For six Japs, one variety, Mr. Redder was first with Madame Carnot, grand deep blooms; Mr. Blick second with Phœbus; Mr. C. Jordan, gardener to H. Hoskier, Esq., Hayes, third with Madame Carnot.

For a group of Chrysanthemums, arranged for effect, three groups were put up; each one was worthy of a first prize, the individual blooms in each were well grown, and fit to show on a board. Mr. Brister, gardener to F. Charlesworth, Esq., Bickley, was first; Mr. E. Dove was second; and Mr. Lyne third.

The plant, fruit, and vegetable classes, as well as the amateur and cottagers' sections, were well filled, as were also the classes for table decorations. The Bromley Society is to be congratulated, this being the best show held under its auspices; that the efforts of the Committee and Secretary were appreciated by the public was amply proved by the crowded hall on both evenings. A record was established for admission.

DONCASTER.—November 10th and 11th.

The annual show of this Society was held in the Corn Exchange, when the beauties of the interior of the building were further enhanced by the array of groups of Chrysanthemums. The premier Japanese bloom in the show was staged by J. D. Ellis, Esq., Worksop (gardener, Mr. J. Alderman), a grand bloom, Mons. Chenon de Leché. The same gentleman was first for twelve Japanese. Second, R. S. Schofield, Esq., Sand Hill, Howden (gardener, Mr. Brown). Third, the Countess Rosse, Wormersley Park (gardener, Mr. A. Brookes).

For twelve incurved varieties (not less than nine distinct) Mr. Alderman was again first, including two grand Duchess of Fife; Identity, Jeanne d'Arc, and Queen of England being also good; second, the Countess Rosse; third, Mr. Keywood, gardener to W. H. B. Wrightson, Esq. For twelve Japanese varieties (not less than eight distinct) Mr. Alderman was again to the fore with grand Edith Tabor, Australie, Mrs. E. G. Hill, and Western King; second, Countess of Rosse; third, C. H. Simpson, Esq., Moor Top House, Ackworth (gardener, Mr. T. Kitchell).

The following were open to the district only. For six distinct Anemone flowered Mr. D. Cheetham, gardener to Mrs. E. Crawshaw, Warmsworth, was first, and Mr. Keywood second. For six incurved, dissimilar, Mr. Butcher, gardener to W. Chadwick, Esq., outdistanced Mr. West, gardener to Sir W. Cooke, Bart. W. Chadwick, Esq., managed to get the first award for twelve incurved varieties, nine dissimilar, though he was well followed by Mr. West; third, Mr. Keywood. For six Japanese, incurved, C. W. Blagden, Esq., of Hill House, Doncaster, secured the first award; second, Sir William Cooke; third, Mrs. E. Crawshaw. In the class for twelve Japanese blooms, nine dissimilar, W. B. Wrightson, Esq., C. W. Blagden, Esq., and Sir Wm. Cooke were awarded the prizes in order given.

For groups of Chrysanthemums there were three competitors:—First, Mr. Butcher; second, Mr. Keywood; third, Mr. Wenman. Mr. Hill, gardener to Mr. Morris at Beechfield, was well first for his miscellaneous group. The show was well attended.

FROME.—November 11th.

This exhibition of Chrysanthemums and fruit was a considerable advance on either of its predecessors, and, all things considered, it is doubtful if a more generally attractive display has been made in the south-western counties this season.

Two magnificent circular banks of plants were arranged, not for competition, by Mr. J. Trollope, gardener to the Marquis of Bath, Longleat, and Mr. Young, gardener to the Earl of Cork, Marston House, Frome, and round the sides of the large Market Hall in which the show was held were no less than eight other groups competing for prizes. In the nurserymen's class for groups the Frome Flower and Fruit Co. was easily first, the second prize going to Messrs. J. Cray & Son, Frome. Gentlemen's gardeners only were allowed to compete in another class for groups, and in this instance Mr. A. Curry, gardener to C. Baily, Esq., was well first, his arrangement of superior Chrysanthemums and other plants meeting with unstinted praise. Mr. W. Cutter, gardener to Mrs. Le Gros, also had a good group, and was second, the third prize going to Mr. Burston, gardener to Mrs. Graham, for an arrangement very slightly inferior to that preferred to it. Mr. Curry; Mr. Carpenter, gardener to A. R. Baily, Esq.; Mr. Phillips, gardener to Mrs. Baily, and the Frome Flower and Fruit Co. were the most successful competitors in the various other plant classes.

A silver cup, value £5, was offered as the first prize for the best twenty-four cut blooms of Japanese Chrysanthemums, and this attracted entries from six of the leading West of England growers. To Mr. Robinson, gardener to Lord Ludlow, Westbury, was awarded the cup, for among others grand blooms of Madame Carnot, G. J. Warren, Primrose League, A. H. Wood, Sunstone, Silver King, Chenon de Leché, Viviand Morel, C. Davis, M. Hoste, Mrs. J. Lewis, Hairy Wonder, and Edith Tabor. Mr. A. Robertson, gardener to J. S. Donne, Esq., Castle Carey, was a good second, and Mr. J. Lloyd, gardener to Vincent Stuckey, Esq., a close third.

For twelve blooms the Somerset Fruit Co. was first, Mr. A. Carpenter second, and the Frome Flower and Fruit Co. third. The best stand of twelve incurved blooms was shown by Mr. J. Lloyd; Messrs. Robinson, Carpenter, and the Somerset Fruit Co. also gaining prizes with incurved varieties. Baskets of autumn foliage and berries, bouquets, and table decorations were excellent.

LINCOLN.—November 11th.

An extremely beautiful show of Chrysanthemums, plants, and fruit, held under the auspices of the Chrysanthemum Society, was opened in the Drill Hall, Lincoln, on the above date, by Mrs. C. H. Seely. It may be that there have been larger and more extensive shows in previous years, but for variety and interest there has perhaps been none to excel the present one. The cut blooms especially were extraordinary, both in regard to size and richness of colour, a circumstance for which the fine weather of the present month is responsible, the sunshine of October being very favourable for the development of the blooms. The best incurved bloom in the show was a handsome specimen of Charles Curtis, shown by Mr. N. C. Cockburn; and the best Japanese one of the variety known as Pride of Madford, shown by Mr. C. E. Marfleet. No little interest, says the "Lincolnshire Echo," was taken in a chaste ivory white bloom named Mrs. Charles Hilton Seely, and there were several of the hirsute type introduced from America a few years ago. The show of groups was not a particularly large one, though the square one arranged by Mr. Illman, the only one in its class, contained some very choice plants, and was arranged with extreme taste. A new feature were the drawing-room groups, with a mirror as a background, and this attracted very strong competition; a very artistic group, shown by Mr. N. C. Cockburn, taking first honours. There was a very fine display of fruit.

The chief open class in the cut bloom section was for twenty-four incurved, in not less than twelve varieties. The first position was taken by Mr. A. Wipf, gardener to N. C. Cockburn, Esq., Hartsholme Hall, Lincoln, who exhibited a handsome stand. The varieties comprised J. Agate, C. H. Curtis, Mrs. R. Kingston, Golden Queen, Duchess of Fife, Madame Darier, Mrs. Heale, Queen of England, Prince Alfred, Lord Wolseley, Princess of Wales, Violet Tomlin, Empress of India, Mrs. Coleman, Lucy Kendall, Miss M. A. Haggas, and Brookleigh Gem. The second prize was taken by Mr. F. Thornton, gardener to C. E. Marfleet, Esq., Boothby Hall.

For twenty-four Japanese, distinct, the competition was keen, and some superb blooms were staged. The first prize was deservedly taken by Mr. F. Thornton, who was followed by Mr. A. Wipf and S. Kelsey, Esq. The premier stand contained charming examples of Australian Gold, Reine d'Angleterre, Phœbus, Pride of Madford, Lady Byron, Viviand Morel, Eva Knowles, Mrs. C. Harman Payne, Van den Hcede, Madame M. Ricoud, Australie, Thos. Wilkins, Modesto, Dorothy Seward, Charles Davis, Etoile de Lyon, Edith Tabor, Eda Prass, Commandant Blusset, Mons. Chenon de Leché, Louise, Miss Rita Schroeter, and Lady Dorothy.

In some of the other classes the prizes were awarded as follows :—Twelve blooms, incurved, distinct.—First, Mr. N. C. Cockburn ; second, Mr. G. Bainbridge. Twelve blooms, Japanese, distinct First, Mr. N. C. Cockburn. Twelve blooms, reflexed, not less than nine varieties.—First, Mr. N. C. Cockburn. Twelve Anemones, distinct.—First, Mr. N. C. Cockburn. Twelve Pompons, distinct.—First, Mr. N. C. Cockburn ; second, Mr. C. E. Marfleet. Single Chrysanthemums, twelve bunches, in not less than six varieties.—First, Mr. N. C. Cockburn ; second, Mr. C. E. Marfleet ; third, Mr. A. Shuttleworth. Six blooms, incurved, distinct.—Third, Mr. W. Cooper. Six blooms, Japanese, distinct.—First, Mr. A. Shuttleworth ; second, Mr. F. Mottershall ; third, Mr. W. Cooper. Six blooms, Japanese, one variety.—First, Mr. N. C. Cockburn. Six blooms, incurved, one variety.—First, Mr. N. C. Cockburn ; second, Mr. G. Bainbridge. Six blooms, hairy variety.—Second, Mr. N. C. Cockburn. Hand bouquet, composed of Chrysanthemums only and any kind of foliage.—First, Mr. J. Illman ; second, Mr. A. Shuttleworth ; third, Miss Foster. Dessert table.—First, Mrs. Illman ; second, Miss Foster. Group of Chrysanthemums and other plants, arranged for effect in a square.—First, Mr. J. Illman. Group of Chrysanthemums and green foliage plants, arranged for effect in a semicircle.—First, Mr. N. C. Cockburn ; second, Mr. J. Illman. Twelve cut back Chrysanthemums, distinct.—First, Mr. N. C. Cockburn ; second, Mr. A. Shuttleworth. Table of bouquets, wreaths, sprays, buttonholes, illustrating decorative value of Chrysanthemums.—First, Mrs. Illman. Drawing-room, mirror, or panel group of Chrysanthemums, with foliage plants, arranged for effect.—First, Mr. N. C. Cockburn ; second, Mr. J. Illman ; third, Mr. A. Shuttleworth.

WESTON-SUPER-MARE.—November 11th.

The Chrysanthemum shows held at Weston-super-Mare have hitherto been noted for the number and excellence of the specimen plants on view, but on the occasion under notice there was a great falling off in this department. Only Messrs. W. Brooks & Son competed in the five classes provided for trained plants, and these well-known growers took a first prize in four instances. With untrained plants there was fairly good competition. The successful exhibitors were Messrs. Pope, gardener to T. Mullins, Esq. ; F. Williams, gardener to Reginald Cox, Esq. ; and W. Summerhayes, gardener to H. Pethick, Esq.

Groups of Chrysanthemums, occupying a space of 50 square feet, showed a great improvement on anything of the kind attempted in previous years. There were six competitors. Mr. J. Brooks, gardener to W. M Appleton, Esq., was well first, his arrangement of perfectly flowered plants being most effective. Mr. W. Summerhayes was a creditable second, Mr. F. Williams a close third, and an extra prize was awarded to Mr. S. M. Jones, gardener to Miss Baker.

Cut blooms proved a great attraction to the visitors who thronged the Victoria Hall, where these shows are held. Every class was well filled, and the competition was extremely close. For twenty-four incurved varieties, Mr. J. Bishop, gardener to H. E. Murray Anderson, Esq., Taunton, was first, his blooms of Miss Haggas, Violet Tomlin, Brookleigh Gem, Globe d'Or, Queen of England, C. H. Curtis, R. Petfield, Lady Dorothy, John Lambert, Princess of Wales, and Major Bonnaffon being remarkably good. Mr. J. Lloyd, gardener to Vincent Stuckey, Esq., Langport, was second, and Mr. W. Strugnell, gardener to W. H. Long, Esq., M.P., Trowbridge, third. For twelve incurved, Dr. J. H. Sharpe, Huntspill, was easily first, his stand containing superior blooms of Harold Wells, R. C. Kingston, Princess of Wales, and C. H. Curtis. The veteran quarryman, Mr. J. Baylis, Winterbourne, was second, in his stand a bloom of C. H. Curtis was singled out as being the premier bloom of incurved variety in the show. Mr. Sutton, gardener to W. A. Todd, Esq., Stoke Bishop, was first for six varieties.

There were five competitors with twenty-four Japanese varieties, only a very few points dividing them. The first prize was awarded to Mr. J. Lloyd, whose best blooms were of Phœbus, Madame Ricoud, Rose Wynne, Duke of York, J. Seward, Etoile de Lyon, Mons. C. H. Payne, General Roberts, Khama, Edith Tabor, Souvenir de Petite Amie, International, Madame Calvat, and Mons. Gruyer. Mr. G. Drake, Cardiff, was second, and Mr. G. Horner, gardener to A. D. Paull, Esq., Taunton, was a good third. The competition with twelve varieties was equally keen. Mr. W. Strugnell was first, having fine, fresh blooms of Mons. J. Allemand, Modesto, Australian Gold, Helen Owen, Mutual Friend, Rev. G. S. Scott, and Golden Gate. Mr. G. Sutton was second, and Mr. W. H. Payne, gardener to Charles Wells, Esq., Stoke Bishop, third. The first prize for six varieties went to Mr. J. Marshall, gardener to J. Dole, Esq., Redlands, Bristol, for exceptionally fine blooms of Madame Carnot, Viviand Morel, Edith Tabor, Australie, W. H. Lees, and Colonel Smith.

MONMOUTH.—November 11th and 12th.

After a lapse of six years this show has been revived, and the success which has attended its resuscitation points only too clearly to the fact that such an exhibition is a necessity in an horticultural district such as surrounds Monmouth, and that a possible mistake had been made in allowing it to remain in abeyance so long. In the early spring a strong Committee was formed, with Lord Llangattock as President, and Mr. F. C. Williams as Hon. Sec., to draw up a schedule and make other necessary orgauising arrangements for an exhibition in the autumn, and how well the Committee has achieved its object is only too obvious by the excellent horticultural show which has been held in the Rolls Hall on Wednesday and Thursday. The schedule comprised no less than 106 classes, embracing competitions for Chrysanthemums, pot plants, and cut blooms, for professional gardeners and amateurs, pot plants of various flowering and decorative varieties, cut flowers, fruit and vegetables for both professionals and cottage garden holders, and for these no less than 500 entries were received. The exhibits were systematically arranged in various parts of the hall. The centre portion was occupied by an immense combination table for the cut blooms, plants, decorative exhibits, whilst around the room were arranged the groups. The fruit was with advantage exhibited in the proscenium, and the vegetables and a few of the flowers were located in the corridor and on the stage, the cottage exhibits, as formerly, being quartered in the gallery.

To adequately describe in detail the exhibits is obviously too great a task to attempt in this notice, and we must content ourselves with merely a general survey. On the whole the show is a distinct improvement as regards the quality of the exhibits, and although some of the group classes were necessarily curtailed from want of space, the quantity had not appreciably decreased. Commencing with the open classes of the Chrysanthemum groups (60 feet), there were three entries. Mr. G. Phillips, the gardener at Wyastone Leys, was easy first with a magnificent collection attractively grouped. Mr. C. M. Crompton-Roberts obtained second place.

In most of the classes of the cut blooms there was keen competition. In the twenty-four incurved specimens Mr. John Lockyer took first honours, his collection including splendid specimens of C. H. Curtis, Lord Alcester, Madame Darier, and Duchess of Fife. Mr. Henry Pitt's best blooms in his second prize collection were C. H. Curtis and Empress of India, whilst in Mr. G. Phillips' stand a fine Globe d'Or stood out prominently. The twelve incurved brought six competitors forward, and the blooms were equally good. Mr. A. Knowles of Newent took first, and we noticed on his board splendid specimens of R. Cannell, C. H. Curtis, and Duchess of Fife. Mr. Bayford of Glewstone Court took second, in which a fine Globe d'Or figured conspicuously. Mr. Louis Gueret of Chepstow came third with a collection including a C. B. Whitnall, Lord Wolseley, and Hero of Stoke Newington.

The Japanese were remarkably fine classes. In the twenty-four varieties seven competed. Mr. John Lockyer, gardener to Mr. J. C. Hanbury, Pontypool Park, took first, and also secured the gold medal offered by With's Chemical Manure Company. His collection included specimens of Mutual Friend, Amiral Avellan, Dorothy Shea, and Duke of York. The second was taken by Mr. A. W. G. Wright of Linton, in whose collection were Madame Carnot, Oceana, and a beautiful white Simplicity. Mr. Gueret also secured third position here, and his chief blooms were Wilfred Marshall, Mutual Friend, and Madame Carnot. The twelve varieties also had seven competitors. Mr. Bayford had a splendid assortment. Captain Hoopgood of Ross was a close second. In the reflexed and Anemones no entries were received. In the baskets of Chrysanthemums two entries were catalogued. Mr. Hill securing first with a nicely arranged assortment, the second of Mr. W. Luton, Hilston Park, being too closely packed to make an effective display.

Considerable additional attractiveness was bestowed on the show by the magnificent non-competitive exhibits. First and foremost was the splendid collection of flowering and foliage plants sent by the President, and arranged by his gardener, Mr. T. Coomber. A background was provided by Chrysanthemums, Palms, and Dracænas, then came a line of white Eucharis amazonica, whilst in the foreground were Cattleyas, dwarf Chrysanthemums, Cypripediums, and Pandanus Veitchi, the whole edged with Maidenhair Fern. Mr. E. Watkins had a pretty group arranged on the stage steps, which included Palms, Heaths, Bouvardias, and foliage plants, also a very artistically made wreath. Messrs. Pillinger & Co. had a collection of Chrysanthemums, foliage plants, Heaths, Palms, and Ferns, located in the vestibule. The exhibition of fruit by Mr. John Basham, F.R.H.S., Bassaleg, near Newport, was exceptionally fine, and included a number of dwarf Apple trees in pot bearing fruit.—("Monmouthshire Beacon.")

WINCHESTER.—November 11th and 12th.

One of the most compact and meritorious autumn exhibitions of Chrysanthemums and other produce seen in the provinces is that held by the Horticultural Society of this ancient city. The Guildhall is the site chosen, and a capital one it is, being commodious, light, and easily accessible. Mr. Chaloner Shenton is a hardworking methodical Hon. Secretary, ably assisted by a practical Committee, of which Mr. F. W. Flight is Chairman. In such hands all the details of a really fine show were carried out without any hitch.

Cut blooms were extensively shown, and demand a premier notice. The most important class was that for forty-eight, half incurved, the remainder Japanese. Along with the challenge cup offered as the leading prize the sum of £7 was given. Four competed, making a good display. Mr. W. G. Adams, 89, Clarendon Road, Southsea, secured the premier position with perhaps the finest stand of incurved blooms seen this year, for with two exceptions every bloom was as near perfection as is possible to have them. The varieties were—Duchess of Fife (2), Golden Queen of England (2), Lord Alcester (2), W. Tunnington, Ma

Perfection, Mrs. R. C. Kingston, Charles Curtis, Alfred Salter, Major Bonnaffon (2), J. Agate, Miss D. Foster (2), Empress of India (2), Mr. J. Kearn, Lord Rosebery, Mrs. S. Coleman, C. B. Whitnall, Queen of England, and George Haigh. The Japanese were of medium size, bright, and well staged—Phœbus (2), International, Australian Gold, Madame Carnot, Pride of Madford, Charles Davis (2), J. Seward, Australie (2), James Bidencope, Viscountess Hambledon, Mons. R. Dean (2), G. J. Warren, General Roberts, Mutual Friend, Edith Tabor, Chenon de Leché (2), Modesto, Viviand Morel, and Thos. Wilkins. Mr. Neville, gardener to F. W. Flight, Esq., Cornstiles, Twyford, was a good second; and Mr. J. Agate, Havant, third.

In the class for twenty-four Japanese the competition was keen. The premier award was made in favour of Mr. J. Bowerman, gardener to C. Hoare, Esq., Hackwood Park, Basingstoke, for a remarkably good collection. The varieties were Mrs. J. Lewis, Australie, Madame Carnot, Thos. Wilkins, Duke of York, Phœbus, Mrs. W. H. Lees, Edith Tabor, Chenon de Leché, Viviand Morel (fine), G. C. Schwabe, Oceana, C. Davis, Mrs. H. Weeks, J. Seward, Mons. R. Dean, Mrs. Carpenter, Mons. Gruyer, and Miss Elsie Teichmann. Mr. R. West, gardener to H. J. Wigram, Esq., Northlands, Salisbury, second; and Messrs. Elcombe & Sons, Romsey, third.

Mr. Adams was again successful in the class for twelve incurved, distinct, and also for half a dozen in two varieties, with blooms similar to those in the leading class; Mr. Neville, a creditable second in both classes. Mr. G. Best, gardener to F. D. Leyland, Esq., The Vine, Basingstoke, secured the leading award for twelve Japanese, staging worthy examples, the best being Viviand Morel, Mrs. Weeks, Edith Tabor, and International; Mr. West a close second. A most interesting class was that for twelve Japanese, white, in four varieties. No less than nine competed, making an imposing display. Mr. Neville was decidedly in front of his opponents with a most meritorious exhibit of Madame Carnot, Mrs. C. Blick, Niveus, and M. Gustave Henry, all of the finest quality; Mr. G. Street, gardener to the Rev. Dr. Fearon, The College, Winchester, second; Mr. J. Agate, third. A similar class was provided for yellow flowered varieties, which made an equally imposing display. Mr. Bowerman was distinctly the premier exhibitor, staging full, solid blooms of Thos. Wilkins, Wilfred Marshall, Edith Tabor, and Amiral Avellan. Mr. H. Clark, gardener to P. Mortimer, Esq., Ashe Park, Overton, second; Mr. Best third.

For twelve blooms, any colour except those previously mentioned, also four varieties, Mr. G. Best just succeeded in securing the leading award with M. Demay-Taillandier, J. Bidencope, Eva Knowles, and International. Mr. Bowerman was a close second; Mr. West third.

Groups of Chrysanthemums made an imposing display, so well were they represented. Mr. G. Street easily secured the coveted award with really splendid plants arranged lightly so that each bloom could be distinctly seen. Mr. G. Newman, gardener to Captain R. G. Gaussen, Twyford Lodge, Winchester, second; Mr. R. Stone, gardener to the Ven. Archdeacon Haigh, The Close, Winchester, third. Chrysanthemums grown for conservatory decoration were magnificently represented, so dwarf were they, at the same time carrying such grandly developed blooms. Mr. G. Adams, gardener to Colonel F. A. Dickens, Blackbridge, Winchester, was first with plants averaging 3 feet high, perfect in every way. Especially good were Mrs. Dr. Ward, Mons. Panckoucke, Niveus, M. C. Molin, and Elsie Teichmann. Mr. H. Gigg, gardener to Rev. R. M. Moorson, Holyrood, Winchester, was second. Mr. F. J. Croot, gardener to B. B. Colson, Esq., Sunny Bank, Winchester, third.

Specimen trained plants were best staged by Mr. Holloway, gardener to Mr. A. Brown, Hill Farm Dairy, Southampton, in the class for six. The best single specimen was one of Golden Christine, from Mr. A. E. Taylor, 3, Hillside Terrace, Winchester. Mr. G. Adams secured premier honour for a single plant carrying the largest number and best quality blooms with a charming plant of Madame Ad. Chatin.

Groups of miscellaneous plants arranged for effect made an imposing display. Fruit and vegetables were well represented. Table decoration, epergnes, and ladies' sprays were an interesting feature of the show. In the first-named class Miss Nellie Owen, Basingstoke, was distinctly ahead with a light arrangement. Mrs. E. Carr second. Miss Elsie Wadmore, Brook House, Basingstoke, third. Mrs. E. Carr secured the leading award in the classes for a stand of flowers, foliage, and grasses, ladies' sprays, and buttonhole bouquets. Miss Louisa Wills, Southampton, had the most tastefully arranged stand of flowers (Orchids excluded), a pleasing combination.

Mr. Neville staged a magnificent collection of cut Roses ("not for competition"). Mr. Molyneux, gardener to W. H. Myers, Esq., M.P., had five dozen blooms incurved and Japanese of leading varieties, all of first quality, as well as two dozen bunches single and Pompon flowered varieties, making in all an interesting exhibit. Mr. E. Hillier, Winchester, had several dozen dishes of Apples of the leading varieties.

STRATFORD.—November 11th, 12th, and 13th.

This was a charming show, held in the Town Hall, Stratford. The Hall, though very large, was crowded with exhibits. The groups, which were very numerous, were keenly contested, and the cut bloom section was well filled. The Society boasts having the largest amateur membership of any Chrysanthemum Society in the kingdom.

For a circular group of Chrysanthemums, arranged with foliage plants, Mr. R. Kenyon, gardener to A. F. Hills, Esq., Woodford, proved the victor in a keen competition; the blooms were exceedingly fine, and the foliage and general arrangement good. Mr. J. Emberson, Grove Road Nursery, Walthamstow, second with a good group, which lacked finish; Mr. P. Burnard, gardener to E. Rider Cook, Esq., Woodford, third.

In the class for twenty-four Japanese blooms, distinct, Mr. R. Kenyon was easily ahead with a very fine stand; the best blooms were Australie, Matthew Hodgson, Mons. Panckoucke, C. Davis, Mons. Chenon de Leché, Mrs. H. Kloss, Edith Tabor, Modesto, and Mrs. J. Lewis. Mr. C. Tullet, gardener to G. Alexander, Esq., Brentwood, second with a good display. Mr. J. W. Simmons, Wanstead, third with weaker flowers. For twenty-four incurved blooms, Mr. T. Tullet was just a few points in front of the second prizewinner. The best blooms in Mr. Tullet's stand were Mrs. R. C. Kingston, Chas. H. Curtis, Prince Alfred, Madame Darier, and Princess of Wales. Mr. J. W. Simmons had well finished blooms, but a trifle weaker.

Mr. G. Whitehead, gardener to S. Nicholls, Esq., Walthamstow, was deservedly awarded first prize for three trained plants with Col. W. B. Smith, W. Seward, and Madame Carnot. Mr. T. Smith, Leytonstone, was awarded premier honours for a group of Chrysanthemums with a capital arrangement of well-grown plants. Mr. W. J. Smith, Plaistow, secured second place with a taller group. Mr. J. Tyler, East Ham, third with a very fresh and bright exhibit. Mr. T. Smith was again first for a group of yellow and white Chrysanthemums, having very fine examples of Madame Carnot, Simplicity, Edith Tabor, and Modesto. Mr. J. Smith, Plaistow, second.

For twenty-four Japanese, distinct, Mr. T. Smith was again successful; his best blooms were Mons. Chenon de Leché, Lady Hanham, M. Gruyer, Silver King, Niveus, Viviand Morel, and Chas. Davis. Mr. G. Raddon second, with a very nice even exhibit. Mr. A. J. Brightwell, Forest Gate, third. For twelve incurved varieties Mr. G. Raddon, Forest Gate, was well ahead with good blooms of Mrs. R. C. Kingston, Jeanne d'Arc, Bonnie Dundee, and Mrs. J. Gardiner. Mr. T. Smith second, showing good Chas. H. Curtis, Empress of India, and Queen of England. Mr. J. Smith third.

The miscellaneous exhibits were very numerous, and included collections of Apples and Pears from the Dukes of Norfolk and Westminster; collections of Chrysanthemums from Messrs. W. Wells, Redhill; R. C. Notcutt, Ipswich; J. B. Riding, Chingford; and J. Spink, Walthamstow.

WINDSOR.—November 12th.

The annual autumn exhibition was held in the Albert Institute, and was a decided improvement upon any of its predecessors. So numerous were the exhibits that the new hall, recently added to the Institute, had to be utilised. This increase in the number of entries is encouraging to the Executive. If the public would but increase likewise in their patronage, a really successful Society would be assured. The Hon. Secretary, Mr. Herbert Finch, works hard to keep the Society progressing. Dr. Wyborn, the esteemed Chairman of Committee, along with Mr. C. Sainty, Vice-Chairman, work hard to obtain success.

Cut blooms were really well shown in the many classes provided for them. The leading one was that for eighteen Japanese and the same number of incurved, distinct. Mr. G. Sturt, Round Oak, Englefield Green, secured the leading award by the superior quality of his blooms in both sections. The incurved were of medium size, and fairly well finished. The varieties were C. Curtis, Lord Alcester, Mrs. J. Gardner, Mrs. R. C. Kingston, Mrs. Coleman, R. Petfield, Golden Empress, Lucy Kendall, Miss M. A. Haggas, Golden Queen of England, Alfred Lyne, Hero of Stoke Newington, W. Tunnington, Jeanne d'Arc, Barbara, Duchess of Fife, Princess of Wales, and Major Bonnaffon. The Japanese were large, bright, and well staged. The Japanese were M. Gruyer, E. Tabor, Viviand Morel, Simplicity, M. D. Taillandier, Rose Wynne, Etoile de Lyon, Mutual Friend, M. C. Molin, Phœbus, Prefet Robert, Madame Ad. Chatin, Silver King, Niveus, G. C. Schwabe, Madame Carnot, Miss D. Shea, and Mdlle. Thérèse Rey. Mr. G. Lane, gardener to Miss A. G. Ridge, Ascot, second.

In the class for twelve incurved and twelve Japanese a silver challenge cup goes with the first prize award, in addition to a money prize. Mr. Sturt secured the verdict by the superiority of the Japanese blooms, which were of huge size and well coloured. The varieties were Graphic, Edith Tabor, Viviand Morel, Phœbus, Miss D. Shea, Mrs. C. Blick, M. Gruyer, Mutual Friend, Duke of York, Simplicity, Oceana, and Mdlle. Thérèse Rey. Duchess of Fife, Major Bonnaffon, Empress of India, Mrs. R. C. Kingston, C. H. Curtis, and Princess of Wales were the most prominent in the incurved section; Mr. Lane, second, with fine Japanese, smaller incurved; Mr. F. Heereman, gardener to Lady Isabella Keane, third.

Mr. F. J. Paul, gardener to Mrs. Bowring, won premier place for twelve incurved, with neat if not large blooms; Mr. J. Williams, gardener to F. Ricardo, Esq., second, with smaller specimens. Mr. Sturt staged massive blooms of C. H. Curtis in the class for six, any one variety, incurved, and secured the leading award.

Twelve Japanese, distinct, was a strong class, Mr. J. Williams winning with creditable examples. Mr. Paul followed closely; Mr. Cole, gardener to Mrs. E. B. Foster, a good third. Anemone flowered varieties made a pleasing display, so well were they represented. Mr. Cole just beat Mr. E. Wicks, gardener to Hon. Lady Murray, for premier place with blooms having slightly better centres, for which this section is mainly cultivated; Mr. J. Williams, third. For six Japanese, any one variety, Mr. Lane won with fine examples of Australie. Mr. T. Wright, gardener to G. W. Marsden, Esq., followed with Good Gracious in first-class condition; Mr. Sturt, third. The best reflexed varieties were staged by Mr. W. Neate, gardener to Miss Thackeray; Mr. Sturt coming next. Cut blooms

in the amateurs' division were well staged by Mr. S. Bannister and Mr. J. T. Young, the prizes going in the order here given.

Chrysanthemums are here most effectively displayed in baskets or vases associated with other foliage, and a grand display is usually produced. Her Grace the Dowager Duchess of Sutherland offers special prizes for twelve blooms so arranged with stems not less than 12 inches long. Upon this occasion the premier award went to Mr. J. Wood, gardener to Lord Boston, for a really effective basket of meritorious blooms; Mr. Hayes, gardener to Mrs. Langworthy, second, Mr. Sturt third.

A class was set apart for ladies—a basket or vase suitable for table decoration, filled with blooms and other natural foliage—which brought ten competitors. Mrs. Young secured the leading award with a charming arrangement of bronze and yellow blooms; Mrs. Finch second, with admirable taste, the blooms lacking quality somewhat.

Five charming groups of Chrysanthemums in pots were arranged around the large hall, making an imposing display. Mr. W. Cole was an easy first prizewinner with plants well grown, carrying grand blooms lightly disposed; Mr. Bunee, gardener to Winkley Smith, Esq., second; Mr. James Wood third. Other plants, fruit and vegetables, were creditable to all concerned.

ECCLES AND PATRICROFT.—November 12th and 13th.

A charming and bright show was held on the above dates in the Drill Hall, Patricroft, and it is certain that in the quality of cut blooms nothing has been seen like them at any of their previous shows, and the large crowds that visited it must have been struck by such a lovely display, which is no doubt brought about through the courtesy and kindness shown to all exhibitors alike by the Chairman and Secretary, Messrs. Larmuth and Huber.

The chief open class was for twelve incurved and twelve Japanese, with silver cup and handsome money prize, the cup to be won three times. Last year's winner was Mr. Kirkman, gardener to G. Stanning, Esq., Leyland, who had the cup wrested from him this year by Mr. C. Osborne, gardener to H. Tate, jun., Esq., Allerton Beeches, with a remarkably fine stand, the incurved being neat, whilst the Japs were well coloured. The varieties were Graphic, R. Dean, Edith Tabor, Australie, Mrs. Palmer, Madame Gustave Henry, G. C. Schwabe, Lady Ridgway, Pride of Exmouth, Mons. Chenon de Leché, Phœbus, Duke of York, J. Agate, Queen of England, C. H. Curtis, W. Tunnington, Lord Alcester, Empress of India, Dorothy Foster, Duchess of Fife, Miss Haggas, Robert Petfield, J. Kearn, and Golden Empress. The finest Japanese ever seen in the neighbourhood of Liverpool and Manchester were found in the second prize stand, staged by John Davies, jun., Esq., Carnarvon; Australie, Charles Davis, Mons. Chenon de Leché, Duke of York, Bellem, and Edith Tabor being conspicuous. A grand bloom of Chas. Curtis gained the above named gentleman the N.C.S. certificate for best incurved bloom in the show. Mr. Kirkman was a good third.

The miscellaneous class for twenty-four was won by Mr. Carling, gardener to Mrs. Cope, Woolton, who also won for six Japs and six incurved and six Anemones. Mr. Davies was successful with twelve incurved, Mr. Osborne second; and for twelve Japanese Messrs. Kirkman and Davies were awarded the positions. Names are not given owing to pressure of space. In the classes for twelve incurved, twelve Japs, and six of each, Mr. Whittle, gardener to R. G. Allan, Esq., Allerton, simply swept all before him, gaining in the former class the silver medal. Messrs. Harker, Jackson and E. Pollitt were also successful in these classes.

The plants were very well grown and generally in good condition, more especially that put up by Mr. Mulloy, gardener to Thos. Harker, Esq., J.P., who won also for six and one. Mr. Powell won with six singles and three Pompons. Mr. Montford won one of the silver challenge cups for twelve cut blooms, the other being taken by Mr. E. J. Chambers for the same number, the challenge gold medal being taken by Mr. Huber, and the N.C.S. medal by Mr. Mulloy. It is impossible to give all winners, but Messrs. J. Atherton (who also won a silver medal), Huber, Chambers, Smethurst, and Woolans were in great form. Messrs. Dickson and Robinson and Dickson, Brown, & Tait were represented by very good stands of miscellaneous plants.

SHEFFIELD.—November 12th and 13th.

This show was held in the Corn Exchange, and proved to be a thorough success. The open class for cut blooms was a very good one, bringing together a large number of high class blooms, generally fresh and bright in colour.

In the class for twenty-four incurved the Dowager Lady Hindlip, Droitwich (gardener, Mr. Crooks), was deservedly awarded first honours for a grand even stand containing C. H. Curtis (2), Lord Alcester, W. Tunnington, grand; J. Agate (2), Mrs. D. Foote, John Lambert, Golden Empress Major Bonnaffon (2), Jeanne d'Arc, Queen of England, Princess of Wales, Mrs. Healc, Lady Dorothy, Brookleigh Gem, Mrs. Colman, Bonnie Dundee, Miss M. A. Haggas, and Violet Tomlin. The Earl of Harrington, Elvaston Castle (gardener, Mr. Goodacre), was placed second, showing fine blooms of Duchess of Fife, F. W. Flight, Miss S. Colman, and Madame Darier. J. D. Ellis, Esq., Worksop (gardener, Mr. Alderman), was third. Lord Trevor, Brinkinault, Chirk (gardener, Mr. F. Bible), fourth.

For twenty-four Japanese, Mr. Crooks again won with fine deep flowers, perfect in finish, of Chas. Davis, Mrs. W. H. Lees, Australie, M. Panckoucke, Viviand Morel, Mrs. Seward, Duke of York, Madame Carnot, Eva Knowles, Ed. Tabor, Simplicity, Australian Gold, Phœbus, Thos. Wilkins, Mons. Chenon de Leché. Mr. F. Bible showed a good stand for second prize; his best blooms were Australian Gold, Mrs. H. Lewis, Pride of Madford, Mons. Chenon de Leché, and Mutual Friend. Mr. Alderman was third. Mr. Henry Cooke, Woodhouse, was fourth. Mr. F. Bible was first for twelve incurved, and Mr. Goodacre second. Mr. Crooks secured first prize for a fine stand of twelve Japs, showing Australie, Mrs. Seward, Duke of York, Primrose League, Phœbus, Pride of Madford, Mdlle. Thérèse Rey, Edith Tabor, Chenon de Leché, Simplicity, Vicomte Roger de Chezelles, Mrs. H. Lees. Mr. Bible was second, and Mr. H. Cook third.

For six incurved blooms, Mr. Broomhead secured first with a fine stand of J. Agate, Major Bonnaffon, C. H. Curtis, Mrs. R. C. Kingston (exceedingly fine), Hero of Stoke Newington, and Miss M. A. Haggas. Mr. Crooks was second, and Mr. Bible third. For six Japanese Mr. Broomhead was first, Mr. Crooks second, and Mr. Bible third. Six large Anemones.—Miss Walker, Osgathorpe, was first, Mr. H. Cook second. Six reflexed.—Mr. C. Scott, gardener to J. Coley, Esq., Sharrow House, first; Mr. H. Cook second.

Chrysanthemum groups, interspersed with foliage plants. The prizes were keenly contested, the first prize being awarded to Mr. H. Willford for a good arrangement, with the surface nicely undulated, and altogether well treated; Mr. E. Austin, gardener to L. Brith, Esq., Chesterfield, was a close second; Mr. T. Morton, gardener to J. Gregory Lowood, Esq., third; Mr. Butcher, Chesterfield, fourth. A new feature, worthy of being generally followed, was introduced in decorated fire-grates, mantels, and mirrors. These coming between the Chrysanthemum groups were a great relief, and proved effective. Mr. Willford secured first prize with a tasteful arrangement, showing considerable artistic taste; the second prize by Mr. Scott, and the third by Mr. W. Wildgoose, lacked quality in individual plants for the purpose required. In the 60 square feet groups, Mr. B. Glossop was first, Mr. Wildgoose second, Mr. Lydd third, Mrs. Butcher fourth.

In the district cut bloom class the exhibits were highly creditable. Mr. G. C. Scott, Sharrow, was first for twelve incurved; Mr. Alderman second; Miss Wake third. For twelve Japanese Mr. Alderman was first, including in his stand fine blooms of Australian Gold, Oceana, Ed. Tabor, and Australie. Mr. G. C. Scott was second, and Mr. Broomhead third. In the smaller classes Miss Wake, Messrs. Scott, Alderman, Stables, and Wenman, gardener to Viscount Halifax, shared the honours.

Bunches of stove and greenhouse flowers, bouquets, buttonholes, with Primulas, table plants, and British Ferns were, as is customary at Sheffield, splendidly shown. Exhibits not for competition proved valuable additions to show. A large basket of Chrysanthemums, arranged by Mrs. W. A. Milner, commanded special attention and admiration for taste in the arrangement, combined with the high quality of the blooms. The exhibits by Messrs. Crossland, Handsworth, M. Seagrave, and Martindale were all fine, comprising healthy specimens in large numbers of stove and greenhouse plants, wreaths, and crosses in perfect taste. Messrs. Dobbie & Co., Rothesay, displayed a stand of Chrysanthemum blooms, which included some grand novelties, such as Secretaire Fierens, President Nonin, Lady Oporto Tait, Lady Isabel, Lady Hanham, and Mrs. Maling Grant, with two fine decorative varieties—viz., Golden Elsie and Barbara Forbes. Mr. W. Wells, Earlswood Nurseries, Redhill, staged a large collection of novelties, especially noticeable being Werther, Surpasse Amiral, Madame Firlat, and Madame Ed. Roger, a curious shade of green, and altogether a great novelty. Mr. H. J. Jones, Ryecroft Nurseries, Lewisham, obtained first-class certificates for Mrs. G. W. Palmer, a sport from Mrs. H. Payne, and Mdlle. Laurence Zédé, a massive twisted incurved Japanese of a clear lilac colour.

BRADFORD.—November 12th and 13th.

The eleventh show of the above Society proved to be the best of any previously held. The open classes were well filled, and the local growers in the cut bloom and the group sections far surpassed any previous efforts.

In the class for twenty-four Japs, Mr. Midgley, gardener to H. Mason, Esq., Bankfield, Bingley, was first, showing grand blooms of Madame Carnot (2), Viviand Morel (2), Madame G. Henry (2), Phœbus (2), Mons. Chenon de Leché (2), Modesto, Van den Heede (2), Etoile de Lyon, Mrs. J. Lewis, Mrs. H. Payne, Baron A. D. Rothschild, Australie, Mdlle. M. Hoste, J. Seward, Pride of Exmouth, Edith Tabor, International, and Simplicity. Second, Mr. G. Haigh, gardener to H. Tate, Esq., Woolton, Liverpool, whose stand included fine blooms of Australie, Thos. Wilkins, Graphic, and Australian Gold. Third, Mr. G. Burden, gardener to C. B. Cookburn, Esq., Birkenhead.

For twenty-four incurved Mr. Bardon was first with Duchess of Fife, C. H. Curtis (2), J. Agate (2), John Lambert (2), Empress of India (2), W. Tunnington, Major Bonnaffon, Ma Perfection, Mrs. R. C. Kingston, Violet Tomlin, Perle Dauphinoise, and Golden Empress. Mr. Haigh was second, and Mr. P. Blair third. For twelve Japanese Mr. Midgley was first, showing Madame Carnot, International, Australie, Mrs. J. Lewis, Van den Heede, Mons. Gruyer, Mons. Panckoucke, Mrs. H. Payne, General Roberts, Ernest Cannell, Eva Knowles, Mutual Friend. Second, G. Haigh. Third, G. Bardon. For twelve incurved Mr. Bardon was first with J. Lambert, J. Agate, Empress of India, C. H. Curtis, Major Bonnaffon, Violet Tomlin, Perle Dauphinoise, Mrs. R. C. Kingston, John Salter, Mrs. S. Coleman, Lucy Kendall, and Miss M. A. Haggas. Second, Mr. G. Haigh. Third, Mr. P. Blair. Six Anemones, first, Mr G. Haigh; second, Mr. J. Brook, Heaton.

Six Japanese, one variety, Mr. A. Barber, gardener to J. Omerod, Esq. was first with grand blooms of E. Molyneux; second, Mr. Moorby

gardener to Mrs. Knowles, Shipley; third, Mr. J. Brooke, Heaton. Japanese, any one variety, white or yellow, Mr. Barber first with grand blooms of Mons. Panekoucke; Mr. Thomas, gardener to the Marquis of Ripon, Studley Royal, second; and Mr. J. Brooke third.

In the class for a group of Chrysanthemums in a space of 80 feet, Mr. W. Wardman, gardener to W. Gilson. Esq., Thornbury, was first; Mr. Shearman, Undercliffe Cemetery, second; and Mr. G. Todd, Ripley Villa, Bradford, third. For a group of miscellaneous plants, Mr. J. M. Moore, Cragg Royal, Rawdon, was first; Mr. E. Smailes, gardener to J. E. Goodall, Esq., Pudsey, second; and Mr. T. Bell, gardener to H. Maude, Esq., Baildon, was third. In the local classes for plants and cut blooms, Messrs. Howland, Clark, Thornton, Spearman, Marston, Moorby, Greenfield, Todd, Bell, and Moore were the chief prizetakers.

BATLEY.—NOVEMBER 13TH.

THE tenth show under the management of the Batley Paxton Society was held in the large Drill Hall. Owing to the prevalence of fog for a fortnight previous to the show a slight falling in the number and quality of the local exhibits was noticeable.

The open class for cut blooms was at least equal to previous years. Mr. Goodacre, gardener to the Earl of Harrington, won the very handsome silver challenge cup, value 21 guineas, for thirty-six, eighteen incurved and eighteen Japs. The incurved stand carried Globe d'Or, Violet Foster, C. H. Curtis, John Doughty, Miss Dorothy Foster, Duchess of Fife, John Lambert, Major Bonnaffon, Lord Alcester, Robert Petfield, Mons. Westhouse, Mrs. Coleman, Princess of Wales, Leonard Payne, Miss M. A. Haggas, Jeanne d'Arc, Miss S. Coleman. The Japanese were Phœbus, Eva Knowles, Simplicity, Mrs. H. Payne, Yellow Madame Carnot, Milano, Niveus, Duke of York, Australian Gold, Chenon de Leehé, Viviand Morel, Edith Tabor, Rose Wynne, C. Davis, Mutual Friend, with duplicates. Mr. Leadbetter, gardener to A. Wilson, Esq., Tranby Croft, was a good second.

Mr. Leadbetter was first for twelve incurved, staging Violet Tomlin, Golden Empress, Princess of Wales, C. H. Curtis, Mrs. R. C. Kingston, Major Bonnaffon, Lucy Kendall, J. Lambert, Ma Perfection, Alf. Salter, Lord Alcester, Queen of England. The same exhibitor was also first for twelve Japs, and Mr. T. Gill, gardener to H. Omerod, Esq., Boothroyd, Brighouse, second. In the local cut bloom class Mr. J. Thornton showed a very fine stand of eighteen flowers, securing first prize; Mr. J. Davis, gardener to G. Sheard, Esq., The Woodlands, Batley, being second. In the smaller classes Messrs. Harford, Thornton, Davies, and Messrs. B. W. Crossley & Son secured the chief prizes.

Groups of Chrysanthemums at Batley are always keenly contested and well arranged. Mr. J. Davis won the first prize, arranged with telling effect; Messrs. B. W. Crossley & Son second, Mr. H. Jackson third. In the local cottagers' class for Chrysanthemum groups, a keen competition resulted in Mr. J. Earnshaw being placed first, Mr. J. Allerton second, Mr. G. Beaumont third.

MANCHESTER.—NOVEMBER 16TH AND 17TH.

MR. WEATHERS, the courteous Curator of the Botanical Gardens, is to be congratulated on the excellent show brought together. The Manchester schedule comprises many large classes, the chief of which was for thirty-six incurved. Here that excellent grower Mr. West, gardener to E. Behrens, Esq., Bettisfield Park, Whitchurch, was a capital first with heavy, well-coloured flowers of Chas. Curtis (2), Ma Perfection (2), Lord Rosebery (2), Alfred Salter (2), R. Petfield (2), Major Bonnaffon (2), Golden Empress (2), Mrs. Heale, Princess of Wales, Miss Haggas, W. Carpenter, Lord Alcester (2), Brookleigh Gem, Globe d'Or (2), Mons. Bahuant, C. B. Whitnall, Baron Hirseh, Jno. Lambert, Queen of England, Jno. Doughty, Duchess of Fife (2), Jno. Fulford, and Empress of India. Mr. J. H. Goodacre, Elvaston Castle, Derby, was a good second; Mr. Geo. Haigh, gardener to W. H. Tate, Esq., Highfield, Woolton, a close third; and Mr. R. Pinnington, gardener to Mrs. Banner, Blacklow House, Roby, fourth.

For twenty-four Japanese, distinct, Mr. West again scored with grand flowers of Chas. Davis, Thos. Wilkins, Stanstead White, Australie, V. Morel, Primrose League, Jno. Seward, Graphic, Simplicity, Miss Dorothy Shea, Phœbus, G. C. Schwabe, Mdlle. M. A. de Galbert, Edith Tabor, Reine d'Angleterre, Pride of Madford, Georges Biron, A. H. Wood, Hairy Wonder, Viscountess Hambledon, Mons. Marius Ricoud, Mons. Chenon de Leehé, Madame Ad. Chatin, and Amiral Avellan. The second prize went to Mr. R. McKellar, gardener to Jas. Watts, Esq., Abney Hall, Cheadle. Mr. J. Kirkman, gardener to J. Stanning, Esq., Leyland, was a close third with bright flowers; and Mr. A. R. Thorp, Mere House, Newton-le-Willows, fourth. For thirty-six, miscellaneous, Mr. Vaughan, gardener to T. Brocklebank, Esq., Woolton, won with a bright stand. Mr. R. Pinnington was a capital second. The same exhibitor also won for a very heavy stand of twelve incurved, and Mr. Goodacre second.

Staked plants in pots, always a grand feature at Manchester, were more beautiful than usual, and a finer nine plants have probably never been seen than those staged by Mr. Bradburn, gardener to J. H. Gaddum, Esq., Adrien House, Didsbury. Little less meritorious were those staged by Mr. Mulloy, gardener to Thos. Harker, Esq., Brook House, Fallowfield, for second. Mr. Bradburn was again up to the high standard for six Japanese in pots. Mr. Mulloy again following. For six Pompons the latter won with fine plants; Mr. D. Livesey, gardener to Mr. Earl, Kersal, being second.

The trade, as usual, contributed handsomely to the success of the show. Messrs. W. Clibran & Son, Altrineham, staging a collection of choice cut Chrysanthemums in all the newest varieties, the singles being particularly effective. The strain of Celosia exhibited was one of the most brilliant we have seen. We never remember having seen Mr. Cypher stage a finer collection of Orchids. To enumerate all the many good things exhibited, and which gained first-class certificates and awards of merit, would take up much space, and so we must content ourselves by classing it well worthy of the gold medal awarded. Messrs. Lewis & Co., Southgate, and Hugh Low & Co., although not represented so largely, had quality on their side, and they, too, received their meed of praise and certificates at the hands of the Judges. Messrs. Dickson and Robinson, and Dickson, Brown & Tait, arranged two most attractive groups of Cyclamens and Ferns at the entrance to the Hall, for which an award of merit was deservedly granted. Mr. W. Boond, Lymm, Cheshire, staged six dozen excellent cut blooms, and Mr. W. Owen, Hartford, some fine forms of Cypripedium insigne. Mr. Weathers had a large bank of Cotton Plants grown in pots, and carrying a great abundance of pods in various stages, some being fully developed, with pods burst and the cotton showing. Messrs. Edwards & Sons, Sherwood, had a fine selection of their Edwardian ware.

BRIEF NOTES ON ALPINE FLOWERS.

(*Continued from page* 371.)

ANDROSACE CHAMÆJASME.

THIS charming little Androsace is, according to the Kew authorities, only a variety of A. villosa, and but for its cumbrousness for garden purposes, the name of A. villosa var. Chamæjasme should be used in speaking of it. It is, like others of the plants of the genus to which it belongs, one of the choicest of alpine flowers, repaying well a little care and attention. The plant is formed of little silvery rosettes, which increase by underground shoots from the base, so that where a suitable rooting medium and a good position can be afforded it is by no means a plant likely to be lost.

The flowers, though individually small, are more effective through being produced in umbels. They are blush on first opening, but ultimately change to a deep pink. The eye is yellow, changing to crimson. The height of A. Chamæjasme varies according to the soil in which it is grown and the amount of moisture it receives at the root, but it may be taken as from 2 to 4 inches. It is a plant which no lover of alpines should be without, although there is no scarcity of flower in the rock garden at its flowering time in June. It was introduced from Austria about 130 years ago, but is far from plentiful in gardens. A deep and well drained rich loam is the soil generally recommended, but I believe it will be found better to give it one of rather lighter nature. In my garden it does well on the southern slope of a rockery built in terraces, and planted in sandy peat with gravel, and a little lime intermixed.

A similar compost is, I observe, recommended by a Continental grower of great experience. When I first grew A. Chamæjasme I thought it advisable to cover it with glass during winter to throw off rain; but this precaution is not, I find, absolutely necessary. The "Rock Jasmine" is the pleasing popular name given to this Androsace in one of our gardening books.

DIANTHUS ATRORUBENS.

The alpine Pinks are general favourites, and the one now under notice usually attracts the attention of garden visitors, although far inferior to many of the genus in beauty or neatness of habit. The foliage is neat enough, and the habit, before flowering, is quite what one could wish. The defect of the plant lies, however, in the length of the flower stem, which is too great in proportion to the size of the flowers produced at its summit. These flowers are borne in what are called aggregated heads. They are small and sessile, and look too closely jammed together. The deep red colour of the blooms is what appears to cause visitors to notice this alpine Pink, although there are others of almost similar colour of greater beauty. The stem is about a foot long. Dianthus atrorubens does not rank very high in my estimation, but is "starred" in the "Dictionary of Gardening" as a desirable garden plant. It is a native of the South and East of Europe, and was introduced in 1802. It is increased by seeds or cuttings.

EPILOBIUM DODONÆI.

Dodoens' Willow Herb is more suited for the rougher parts of the rock garden, especially at the base of rockwork, where it may receive a good supply of moisture. A native of Piedmont and Dauphiny, it is perfectly hardy in our climate, and not at all difficult to grow, either in the flower border or rock garden. It has been in cultivation in Great Britain for about 100 years, but is not much grown. It grows about 1 foot high, and has very narrow lance-shaped leaves and deep rose-coloured terminal flowers. E. Dodonæi is not fastidious as to soil, but a light well drained one, with plenty of moisture passing through it, will suit it. It may also be planted on the edge of a pool or bog garden. It is increased by division or seed. It is synonymous with E. Fleischeri and E. Halleri.

SAXIFRAGA UMBROSA VARIEGATA.

With the few lines that remain a brief mention may be made of this pretty variety of the common London Pride or None-so-Pretty. It is a counterpart so far as regards flower of that well-known plant, and its attractions consist in the beautifully marked green and white leaves. These are very prettily variegated, and most people admire them very much. The plant shows a tendency to revert to the typical green-leaved variety, and it will be found desirable to thin-out the green plants, or they will choke out the less vigorous variegated individuals. S. umbrosa variegata is not very plentiful, and I have no knowledge of its first introduction.—ALPINUS.

LONDON TREES AND FLOWERS.

The Fall of the Leaf.

"Dead leaves wisper!" So ran a legend whieh, some years ago, was found chalked in rude letters on a London wall. The inscription, whether written as faet or allegory, is the true eomment on that mysterious undertone whieh, during late Oetober, the breeze sings nightly through the winnowed trees. Autumn hears it, and foreseeing the end, blaneh es a little through her crimson patehes. Worn out with husbandry, the earth listens and grows, almost impereeptibly, more still. And London, robbed of her green ornament, puts on a coat of grey and turns—shivering—to faee November.

Onee a year, at least, Londoners wake to the faet that their city is a port, and a near neighbour of the sea. The discovery is made when a North Sea fog drifts over the Essex marshes and, deseending on the Clty, shuts out the day. It is said that a "London particular" does no harm to a healthy man, but its effeet on vegetable life is disastrous. The mixture of acids contained in the vapour kills off most leaves in a few hours; and the breeze which, before the visitation, swept through the foliage with no effect, now reaps a faded harvest with every breath. Strictly speaking, London has no autumn, though the other seasons are each so clearly marked. Spring comes early, and very green. The Elms and Limes in the City, the Lilae and the Almond in suburban gardens, are out and blooming long before their eountry cousins are astir. In summer, spring renews itself most wonderfully in the Planes which, with the Ash and the Acacia, are greenest and fullest at the end of June. But autumn—golden autumn—hardly exists in town. The leaves die suddenly, as if a pestilence had touched them, while eountry hedgerows are still aflame. This year deeay set in unusually early. The Limes were, as usual, the first to go. The Lime is a craven in this respeet, and strikes his colours at the first hint of the approach of frost. Two trees in Gray's Inn gardens were shedding their leaves quite early in September. By Miehaelmas the Ash and Elm were in full retreat. Only the Planes and the Lombardy Poplars withstood the onslaught of their adversary, Winter, and now—in the first week of November—the former still makes a fight of it against night frost and morning fog.

The giant trees in Berkeley Square—undoubtedly the finest group of Planes in London—are still well covered, though the broad leaves are tipped with red and yellow, and the fruit buttons hang brown and withered from their stems. Indeed, if "Leafy London" is ever to deserve the name Leigh Hunt bestowed on her, it will be by the help of the Planes. The Elms are dying out. This year, even in the parks, the leaves grew rusty as early as July, and the light yellow eolour—an early autumn dress—never appeared at all. There can be little satisfaction for tree lovers in the poor searred trunk in Fountain Court, Temple, which seems to moek the queenly beauty of the country Elm. The Chestnuts also are in the same condition. There are not half a dozen left outside the parks, while the Willows and Sumaehs (both of which are planted about London squares) are a distressing sight for anyone who recalls their size and freshness when they grow in country air. It is the thought of these starvelings, and others like them, that causes one to wateh with grave anxiety the health of that doyen among London trees—the Wood Street Plane. It is sad to see the old giant show some symptoms of decay. Rumour says that it was planted immediately after the Great Fire. It looks as if two centuries of drought and smoke had begun to tell their tale. This season some of the branches at the top did not bud. Many of the leaves, too, faded before the summer's end, and, worse than all, the old tree no longer sheds and renews its bark with the vigour of a few years ago. May Time deal gently with the veteran, for probably no tree of such a size and majesty will ever bloom again in a London street!

It is plain that London in autumn is a borrower of other nations for her natural ornament. Her finest trees are Persian, and her flowers are Japanese. For, except the Violets, there is nothing in the streets but the Chrysanthemum. Even for City buttonholes it is the only wear. The long-petalled Japanese variety was almost the only blossom to be seen in Fleet Street when these researches were made. Covent Garden, in the early morning, told the same story. The flower market brimmed over with Chrysanthemums of many eolours. "We are selling blooms at a penny," said a salesman (without enthusiasm), "whieh two years ago would have fetched sixpence apiece. Millions pour in here every week." The flower market revealed a wonderful sight. It was a mass of riotous colouring and patchwork hues. Here was a foam of white petals; next a great bank where red lay mixed with yellow, and purple mingled with pale pink. There was a sea of palest lilac, splashed with a deeper mauve. At one end stood a great cluster of plants, whose petals were golden bronze, with a fleck of scarlet at the heart. It was as if autumn had touehed a liliputian woodland with a finger of flame. Other flowers one notieed afterwards—Violets, Lilies, Roses, aud many more. But the blaze of the Chrysanthemums eelipsed these English posies, for a time. One other beautiful foreigner was found—a branch of White Lilac from Southern Franee. "White Lilac," said its exhibitor, "always spells winter. We shall have no new English flowers until the Snowdrops and Croeuses come in."

Surely winter comes with a good graee, wearing White Lilac next the Holly's green and red. And Snowdrop and Crocus are names with which to conjure from the fog's blaek mist some faint yet fragrant vision of another spring.—("Daily Telegraph.")

THE YOUNG GARDENERS' DOMAIN.

Clerodendron Balfourianum.

This stove plant is worth a plaee in any collection on aecount of its great beauty and free-flowering properties. It is one of those few plants which possess sueh a strong contrast of eolour, the flower itself being pure white, while the stigma and stamens are bright red. The flowers, which are small, are borne in elusters, and when trained balloon fashion, the effeet is grand. Another good quality is the plants last a very long time in bloom.

Like Allamandas, they require a period of rest. To this end water must be gradually withheld, and the plants afforded the lightest place in the stove to insure the wood being properly matured. By the first week in November the plants may be removed to an intermediate house, with sufficient water to prevent the soil in the pots beeoming dust dry. In early spring remove the plants again into the stove, repotting any that may require it, using a eompost of loam, peat, cow manure, and sand, with ample drainage. Give abundance of water during the growing season, with an oeeasional dose of weak liquid manure.

If it is intended to increase the stock, euttings should be taken as soon as procurable, and when placed in small pots in sandy soil in the propagating pit they will soon root, and with the ordinary eare bestowed upon stove plants, will make niee plants suitable for plaeing into 8-inch pots the following spring. With attention to details, handsome and valuable speeimens ean be formed in a few years. I find the best method of training young plants the first year is on perpendicular wires at one end of the stove. This variety requires little or no pruning.—Youngster.

Winter-flowering Tree Carnations.

There are few plants so useful at this time of the year as Carnations. Their comparatively easy culture and free-flowering habit ought to insure their more extensive cultivation, especially by those who cannot have houses devoted to the Malmaison varieties. I believe they are more serviceable for decorative purposes, and may be used for the conservatory, to whieh they add a charming effect. A model tree Carnation is a plant from 2 to 3 feet in height, bushy, with numerous side growths springing from the main stem, vigorous in habit and profuse in bloom.

Cuttings for early winter flowering should be inserted in small 60-pots, about the middle of November or early in Deeember. Seleet side growths with a heel of the old wood, place five around the edges, plunge them in a brisk bottom heat of about 70° to 75°, and keep the plants close for a time, but do not allow them to droop if possible. A suitable compost for cuttings is good yellow sandy loam, leaf soil, and sand in equal parts; and eare must be taken that the base of the eutting rests firmly on the bottom of the hole. The soil should be in a somewhat moist eondition, to preclude the necessity of watering for a considerable time. Each day earefully wipe all moisture from the top of the glass to prevent drip, removing decayed leaves as soon as discovered. Immediately root action has commenced admit air freely.

Those inserted in November ought to be ready for potting singly early in January, when other cuttings should be inserted. When the plants are established remove to a temperature of about 50° by night, and 5° higher in the day, with air to prevent the plants becoming drawn. The grower will have to keep a sharp look out for green fly, which will quiekly ruin the young plants, but the pest is easily exterminated by the XL fumigator or insectieide. Keep a watehful eye on the young plants, and do not allow them to become root-bound, or they will experience a check when repotted. By February the earliest plants ought to be ready for repotting, using 5 and 6-inch pots aecording to the size of the plants. A further stoek of euttings should be inserted some time in Mareh and treated as previously advised.

The main object of the grower ought to be to have his plants growing steadily, and to keep them as sturdy as possible. Careful attention must always be paid to watering, which is certainly one seeret of suceess. Abundance of air should be given on all favourable occasions. When the warm weather sets in the plants will do well in cold frames. For the final potting use a eompost of three parts yellow fibrous loam, one peat, about the same of sheep manure rubbed fine, with one quarter mortar rubbish, wood ashes, and a sprinkling of bones (half-ineh), and eharcoal. The syringe may be used twice daily in favourable weather, which will keep green fly and thrips at bay.

If the plants are free from parasites it will be a pleasure to wateh the development of the leaves, and their colour will be a rich glaucous green. By the end of May the lights may be removed in the daytime, and in June they may be left off altogether for a time if the season is dry. As the pots get full of roots give an oeeasional watering of clear soot water and liquid manure, with a top-dressing of Clay's fertiliser about once a fortnight.

All late plants should be in their flowering pots by August. The flower buds must be neatly staked, and when this is done the plants may be put inside to develop their flowers. Abundance of air should at all times be admitted. In order to get flowers of good quality disbudding will have to be practised. During the winter months pay eareful attention to watering, and see that none is watered unless well on the dry side, using rain water if possible.—J. F. D., *Yorks.*

TRADE CATALOGUES RECEIVED.

Austin & McAslan, Glasgow.—*Nursery Stock.*
Fotheringham & Young, Dumfries.—*Ornamental Trees.*
R. C. Noteutt, Broughton Road Nurseries, Ipswieh.—*Chrysanthemums.*
Rivoire & Son, 16, Rue d'Algerie, Lyon, Franee.—*Novelties.*

HARDY FRUIT GARDEN.

Planting Fruit Trees.—The weather has been suitable for preparing soils of varying character, the absence of heavy rains insuring the moving and breaking up of the soil being carried on under clean conditions. Heavy and retentive soils are always better when they can be prepared under good circumstances, the roots of newly planted trees taking freely to ground that is fairly pulverised, moist, and warm.

Should the positions intended for fruit trees still be unprepared, it is desirable that the work of preparation be commenced forthwith. When the soil is very light and dry there need be no hesitation in trenching it to the depth of 2½ feet. Keep the best soil on the top, however, but well break up the subsoil. Should the latter be very unsuitable for the entry of roots it might in special instances be removed to the depth of a foot, substituting better material. The average depth of good soil necessary for the roots of fruit trees is 2 feet. Wherever this depth can be commanded there will be no necessity to remove any subsoil, but see that it is sufficiently open to admit of free drainage.

Good, substantial soil needs no manuring at the time of planting. The best enriching material is good loam, which may be added freely to soils below an average quality. Pulverised clay is good for light and very sandy soils, and will increase their retentive power. Wood ashes well worked into the surface soil render it friable and suitable for the emission of rootlets, so that newly planted trees may become readily established.

Selection of Trees.—Whether trees are personally selected by the cultivator or left to the discretion of the nurseryman is a matter of convenience. Hardy, vigorous trees or bushes of medium strength are the best for all purposes. They should possess a good proportion of fibrous roots, which ought to be carefully preserved in lifting and kept from the drying influences of the air by careful packing.

Distances to Plant.—Planting too thickly, whether on walls, fences, borders, or open plots, is decidedly disadvantageous to the welfare of the trees, besides a waste of material and a cause of unnecessary trouble in planting. Fruit trees should be planted with regard to their ultimate development. If they are planted so closely that when approaching to a good bearing condition the branches grow into one another considerable harm accrues which can never be properly rectified. Apricots, Peaches, Nectarines, Plums, and Cherries on walls, trained fan shaped, may be 15 feet apart. Apples and Pears, horizontally trained, 18 feet apart; fan shaped, 15 feet. Pyramid Pears on Pear stocks, 16 feet apart. If root-pruned, 10 feet apart. Pears on Quince stocks, not root-pruned, 6 feet apart. Cordon Pears and Apples on walls or fences, 18 inches to 2 feet apart. Standard trees ought to be 25 to 30 feet apart, bush trees of Apples and Pears 10 feet apart, Gooseberry and Currant bushes, 6 feet apart.

Details of Planting.—It is important to throw out the soil for the reception of the roots, so as to form wide, but shallow holes. Previous to inserting the trees in position any broken and bruised ends of the roots ought to be pruned smoothly, making a short, upward, slanting cut. Shorten long, rambling roots to a reasonable length for them to be laid out straight. Form the soil at the base of the holes into a convex mound, and on the top place the trees, which must not be planted deeper than formerly. The earth marks on the stems will determine this. Some fine, light material, consisting of friable soil and wood ashes, should be at hand for placing among the roots. Spread out the roots in layers to their full extent, securing them in position by scattering the fine soil over them from the stem outwards. Treat each layer of roots the same way, the uppermost layer being 3 or 4 inches from the surface when finished. The soil about the roots should be made as firmly as possible, but avoid heavily treading with the feet. This may so strain the roots that they will be broken or injured.

Watering.—The best possible way of washing the soil among the roots is to give a thorough watering after planting with a rosed can. The water will carry the particles of soil among the finer roots, and all air spaces will thereby be filled up, leaving the soil sufficiently firm for the roots to grasp readily.

Staking Trees.—In some cases it is more convenient to insert the stakes before planting. All trees, however, which require support, ought to have it as soon as planted. If rocked to and fro by the wind great pressure is placed on the roots which have obtained no hold on the soil. Soft material should be placed round the stems, securing them to the stakes with copper wire.

Mulching.—Shortly after planting, the ground above the roots may be lightly mulched with short half-decayed manure. It will assist in conserving heat in the soil and in preventing the entry of frost.

FRUIT FORCING.

Peaches and Nectarines.—*Earliest Forced House.*—The trees must be started to ripen the fruit in May, when the varieties consist of Hale's Early, Stirling Castle, Crimson Galande, Dymond or Grosse Mignonne, Royal George and Bellegarde Peaches, with Lord Napier, Rivers' Orange, Stanwick Elruge, Humboldt, and Dryden Nectarines. The very early varieties—Alexander or Waterloo, Early Beatrice, Early Louise, and Condor Peaches, with Cardinal, Advance, and Early Rivers Nectarines—need not be started until the new year. If the lights have been off, the inside border will have been thoroughly moistened down to the drainage. Weakly trees will be benefited by an application of liquid manure. Fire heat need only be employed at night to exclude frost, and by day to insure a temperature of 50°. Commence ventilating at 50°, and close the house at that temperature, ventilating fully without lowering the heat below 50° in the daytime. Syringe the trees in the morning and early afternoon of fine days until the buds begin to show colour; but then (and on dull days prior thereto) discontinue the syringing, yet maintain a suitable moisture in the atmosphere by damping the paths, borders, and other available surfaces on bright mornings and fine afternoons, admitting a little air constantly at the top of the house. Aim at bringing the trees on gradually to secure well developed blossom.

Houses Started at the New Year.—Trees started early in the year for affording fruit at the end of May or early in June must now be kept as cool as possible. Pruning will have been attended to, which is a light affair where proper attention has been given to disbudding, retaining growth only essential for extension and next year's bearing, and cutting out after the fruit is gathered the useless wood. The trees, however, must be examined to remove wood not required, and that have been overlooked during growth. Brown scale is sometimes troublesome, and must be destroyed. Secure the trees to the trellis, allowing plenty of space in the ties for the swelling of the branches. Remove any loose inert soil from the surface of the border, supplying fresh material not more than a couple of inches thick on the roots. Quickly acting fertilisers should not be applied until the crop has set, a dressing then being given, and at intervals of a month or six weeks afterwards up to the fruit changing for ripening. Mulching also with short manure should be deferred until the trees are somewhat in growth. Houses with fixed roof-lights should be kept as cool as possible, ventilating to the fullest extent except when severe frost prevails.

Houses for Starting in February.—The trees started early in February ripen the fruit late in June or early in July, and will now require similar treatment to that advised for those in the house to be started at the new year. The roof-lights are much better removed, but it is a common practice to use houses of this kind for plants requiring protection from frost, especially Chrysanthemums. It is not a good procedure, for the Peach trees are deprived of the rest essential to success, and it often excites the trees prematurely, being then followed by a check, as is usually caused when the Chrysanthemums are over by throwing the house open, inducing the buds to fall. It is also a bad system to leave houses and trees unattended after the leaves fall until the absolute necessity arises for starting the trees. The trees are never handled so safely as when the wood contains least sap, which is as soon as the leaves have fallen, and the delay is taken advantage of by red spider, thrips, and other insect pests to find safe retreats. The house, therefore, should be thoroughly cleansed, the trees pruned, readjusted to the trellis, and every needful operation performed, so that a start can be made with confidence when the proper time arrives.

Houses Started in March.—The trees in these structures, and closed early in March, will ripen their fruit in July if brought forward by artificial heat; but where warmth is given when the trees are in blossom, and to secure the safety of the young fruit from frost, the fruit will not ripen until August or September if kept cool. The house may be a Peach case or glass-covered wall, with sufficient hot-water piping to exclude frost; afford a genial warmth when the trees are in blossom, accelerating the ripening as may be necessary, and ripening the wood in cool districts. The trees are now leafless where they have been subjected to artificial heat to ripen the fruit in August, and should undergo the operations advised for those in the early house. The roof-lights should be removed, the hot-water pipes emptied, leaving the lights off until the blossoms show colour, unless it is desired to start the trees before. If the lights are fixed, the ventilators should be thrown open to the fullest extent, except when frost prevails.

Late Houses.—Make no attempt to remove the leaves until they part readily from the trees by shaking the trellis, but cut out all the wood that has borne fruit and all superfluous growths. Do not allow the soil to become very dry, but if necessary give water to moisten down to the drainage. Keep the house cool by free ventilation, clearing away the leaves as they fall. Trees that grow too luxuriantly should be root-pruned and lifted whilst the leaves are upon them, but the wood being unripe they must not be lifted until the leaves have for the most part fallen, or the unripe wood will shrivel and die. If the wood does not ripen well turn the heat on by day with moderate ventilation, and turn it off in the afternoon so as to have the pipes cool before night, and then open all the ventilators, unless frost prevails, when ventilate according to circumstances, for the sudden collapse of the foliage is detrimental to the trees' health. When the wood does not ripen up to the points of the shoots a trench may be taken out at some distance from the stem and the roots be cut, which will check the tendency to growth and induce ripening. After remaining open ten days to a fortnight the trenches may be closed, making the soil firm and giving a good watering.

Wall Cases or Unheated Houses.—In some localities Peaches and Nectarines do not succeed against walls, and they are covered with glass, under which the trees afford more satisfactory crops. The walls should have south aspects in the northern parts of the kingdom; in the south late Peaches and Nectarines ripen well in September and October in structures facing west. They are not, however, always satisfactory. Sometimes the border is at fault and the trees make late growth, not ripening the wood well. Where that occurs the trees should be lifted and the roots laid in fresh compost nearer the surface. If the drainage is not good it

must be rectified, and the soil being unsuitable it should be removed wholly or in part, supplying or adding fresh. The border need not be wider than 4½ feet in the first instance for young trees, and all are accommodated in a border 1 foot wider than the extent of the roots, adding to it as these extend. A narrow border is superior to a wide one, only due regard is had to watering and feeding, with judicious mulching. If new trees are to be put in select those just coming into bearing—say, two or three years trained to walls, and lifted in the year previous to moving. Carefully lifted and planted they will bear fruit the first season, and not being overcropped will not be materially hindered in extension. Introducing new trees and the lifting and replanting of Peaches and Nectarines should be effected as soon as the trees are leafless or nearly so, as upon early removal depends success in the following year. By a judicious selection of varieties fruit of first-class quality may be had in a Peach case from the early part of July until early in October. Peaches: Alexander, Hale's Early, Dagmar, Crimson Galande, Stirling Castle or Royal George, Goshawk, Alexandra Noblesse, Dymond or Grosse Mignonne, Belle Beauce, Goshawk, Barrington, Bellegarde, Princess of Wales, Gladstone, Sea Eagle, Late Admirable, and Golden Eagle. Nectarines: Advance, Early Rivers, Lord Napier, Stanwick Elruge, Rivers' White, Humboldt, Dryden, Pineapple, and Victoria.

THE BEE-KEEPER.

Making Mead.

A CORRESPONDENT lately desired information for making mead from combs obtained from straw skeps. There are some bee-keepers in this district who have kept bees on the old-fashioned system for many years, and who are noted for the good quality of the mead they have made annually, and from one of them I got particulars of how he had made it for close on fifty years. These I give for the benefit of other readers.

The usual plan of treating the combs to obtain the honey from them after their removal from the skep is to place them in a fine sieve in front of a fire; the majority of the cappings having been removed, the honey will readily drain into the vessel placed underneath for that purpose. Although the combs may be constantly stirred and turned over, it will be impossible to remove all the honey from the combs, and when in this condition they are in prime order for making mead. It is advisable to have all the combs ready at one time, and as soon as the honey is drained from them preparations should be made for our purpose. The recipe is as follows:—

Take the combs from three or more skeps, and after the honey has been drained off place them in a tub, add 3 gallons of cold water, which should be constantly stirred. If the combs are not well broken up it may be done by hand, and may remain in this condition for several days until all the honey has left the combs. If time is an object warm water may be used, but not too hot, otherwise the wax will be melted. Allow the combs to soak for half an hour, and after stirring them well for a few minutes pour the liquor off, and add more warm water to the combs, which in half an hour will have extracted all the honey from them. Strain the débris through a cheese cloth, which may be preserved for making wax.

It will now be necessary to find out if the liquor is of sufficient strength. To test it, drop in a new laid egg. If it sink to the bottom it will be too weak to make mead of the first quality. Honey must then be added in sufficient quantity until the egg floats. The liquor, however, must be of sufficient warmth to melt the honey, otherwise it will not have the desired effect. Boil slowly for an hour, and during the process add ¼ oz. each of cloves, mace, and stick cinnamon; any other flavouring may be added according to taste.

When it has cooled sufficiently, strain through a cheese cloth, and add half pint of brewers' yeast, allowing it to ferment for two or three days, and skim occasionally. It should then be placed in a cask, and the bung left out for a fortnight until fermentation has ceased. The cask may then be corked up tightly and the mead be bottled any time within a year, when the cask may be required for the same purpose again.

It is not necessary, as some people imagine, to add spirits of any kind, as mead made on the above lines has come under my notice that has kept in prime condition for several years; in fact, if properly made, it will improve with age.—AN ENGLISH BEE-KEEPER.

GARDENERS' CHARITABLE AND PROVIDENT INSTITUTIONS.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—*Secretary*, Mr. G. J. Ingram, 50, Parliament Street, London, W.C.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—*Secretary*, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

ROYAL GARDENERS' ORPHAN FUND.—*Secretary*, Mr. A. F. Barron, **The Royal Gardeners' Orphan Fund, Chiswick, W.**

TO CORRESPONDENTS

All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," **8, Rose Hill Road, Wandsworth, London, S.W.**, and **NOT** to Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Chrysanthemum Mutual Friend (*Mum*).—This variety is recognised by all competent authorities as a white, and could not therefore be staged in such a class as you specify. If your blooms of Australie are closely incurved, deep, and symmetrical they must be very good, and should find a place in almost any stand of Japanese.

Strawberry Jam (*Poppy*).—We have an excellent supply, made as follows:—To each pound of Strawberries allow half a pound of sugar. Procure firm scarlet Strawberries (ours are Vicomtesse Hericart de Thury), strip off the stalks, and put the fruit in a preserving pan over a moderate fire; boil for twenty minutes, stirring constantly. Remove from the fire and add the sugar, granulated being the best; place over the fire, and boil quickly for another twenty minutes. Put into pots, and tie down while hot. Most of the fruits have retained their natural shape, and the flavour is all that can be desired. We are obliged by your letter, which shall have our best attention.

Chemical Manures for Vines (*Vex*).—The following mixture is what you have in mind as having been recommended in our columns. Pure vitriolised raw bones three parts or lbs., muriate of potash two parts, one part each of sulphate of lime and sulphate of ammonia, with half a part of sulphate of magnesia, applied at the rate of about 4 ozs. to the square yard. Splendid crops of Grapes have also been supported by 2 ozs. of mineral superphosphate, with 1 oz. each of muriate of potash and muriate of ammonia per square yard three times during the season. An important point is to have abundance of fibrous roots for appropriating the food supplied, or it can do little good.

Plants for Letters on Dog's Grave (*Magda*).—We have seen some very pretty work done in both Crocuses and Snowdrops, also Scilla sibirica. These are only good in the spring. Another pretty letter-work arrangement was in double Primroses, a second in Gentiana verna, and a third Phlox verna. The prettiest of all was Arenaria purpurascens, and Saxifraga Camposi. All these have to be planted. In annuals the dwarfest of all is Ionopsidium acaule. Virginian Stock, Silene pendula compacta var. alba are also neat in growth, but do not last long. Only low and not spreading plants are suitable for lettering. The most long-lasting lettering is dwarf Dutch Box kept neatly clipped.

Loam and Manure for Vines (*Cross*).—Heavy top-dressings of loam and manure are not good. The most important point is to get roots and then feed. Of course, roots cannot be had without medium to grow in, and that is one great reason for the usual annual top-dressing of turfy loam. In no case, however, should the thickness be more than 3 inches, and not that unless the old loose surface soil is removed so as to get roots in the fresh material. It is better to use a moderate amount of manure with the turf, one-third being a maximum of sweetened stable manure freed of the straw, or as much as may be effected by shaking out the litter. It is easy to add sweet manure from time to time during growth, and by that means supply nourishment without burying the roots deeply or giving more than they are likely to occupy. In addition to the loam and manure, you may now supply (on the top of the top-dressing) a mixture of five parts steamed bonemeal and three parts double sulphate of potash and magnesia, with two parts sulphate of lime, well mixed together, using ¼ to ½ lb. per square yard, working in moderately into the top-dressing. There is nothing in the mixture to "run away," and with the phosphate, potash, and magnesia thus supplied nitrogenous matter of a quickly acting nature can be given in the spring or early summer; but too much nitrogen does not answer for the Grapes you name—Gros Colman and Black Alicante; they do better with steady supplies of slowly decaying matter, or what this gives—ammonia passing into nitrite and nitrate in about right amount if given as advised.

R.H.S. Fruit Committee and Medals (*Critic*). — Referring to an exhibit of fruit at one of the meetings you say "The Fruit Committee is a stingy body at times, and a few heaps of Onions and Turnips would have got a bigger medal." Our interpretation of the apparent anomaly is this, and the pithy comment thereon is that, in your opinion, "Onion and Turnip" medals (though that is, perhaps, not a happy way of putting it) are voted too freely. We have certainly heard it said that if some medal hunters could have their way there would soon be no medals left, as the species would become extinct.

Daisy Roots on a Lawn (*Daisy*).—There are two ways of destroying the Daisies without serious disfigurement:—1, Extracting the roots or plants by what is known as a Daisy fork or grubber—a short-handled implement with a forked end and priser on the back for uprooting the plants. This does excellent work during moist weather. The holes are filled, after clearing off the grubbed up plants, with rich soil, which encourages the growth of the grass. 2, Dress the lawn with "lawn sand," sold by nurserymen, applying it according to the instructions. This causes the lawn to become rather brown for a time, but the effects soon pass off, and the grass grows all the better with considerably fewer Daisies.

Hollies Casting Their Leaves (*R. S.*).—Some thirty-six years ago we had a similar experience of Hollies casting their leaves to an extent rendering them almost completely leafless. This we attributed to the prevalence of fog during the latter part of October and early in November, with the sulphurous smoke and vapour from some factory chimneys. The prickly-leaved species and varieties suffered the most, and the smooth-leaved the least. In the country we also once experienced a similar downfall of Holly leaves in the autumn, this also after a period of foggy weather. The trees became so bare as to necessitate cutting back, which proved a decided advantage both as regards form and subsequent growth and foliage. These are the only two instances in our experience of Hollies casting their leaves in the manner you describe. We can offer no suggestion as to prevention.

Apple Trees in a Dell (*W. W.*).—We have been compelled to grow hardy fruits in a garden in land liable to be flooded by water two or three times during the winter. Apples did very well, Keswick Codlin supplying fruit for use during August and September into October. Golden Noble seldom failed, continuing the supply from October to Christmas, when Northern Greening followed, and with it Bramley's Seedling, one of the very best Apples for damp situations. For eating, Devonshire Quarrenden, King of the Pippins, Blenheim Pippin, and Golden Russet proved the best, supplying fruit from September till March. Black Currants were grown in the spaces between the Apple trees in the garden and gave bountiful crops. Land that is water-logged for two or three months is most inimical to fruits. Temporary flooding does no harm; it is the stagnation and souring of the land that does the mischief to the roots.

Collapse of Cucumber Plants (*S. W. G.*).—The leaves were coated almost all over with soil, possibly owing to movement in passing through the post; but from whatever cause the occurrence is a serious drawback in examining them, the grit making sad work of microscopic apparatus. The mould on the leaves is Aspergillus glaucus, the conidial condition of Eurotium herbariorum, the fruits being, also the sclerotia, present in great abundance. The fungus, however, has no connection, only as a consequence of decay, with the collapse of the plants. This has been caused by the root-stem eelworm, Tylenchus obtusus, which swarmed in the destroyed tissues. There was also present a white worm, Enchytræus Buckholzi, which attacks the roots and stems of Clovers, Vegetable Marrows, and other plants outdoors; and we have found it in the same parts of Cucumbers, Melons, Bamboos, and many other plants indoors. We regard it, however, only as a semi-parasite, and very easily killed. For instance, it only lived a few seconds in water containing a little silico-fluoride of ammonia, while the eelworms were not killed for several minutes, yet there is no question of its destroying the pests—root-stem eelworm. The only thing to be done is to clear out the plants and soil, commencing afresh with clean plants and compost. This, however, will only result in the same disaster unless the precaution be taken to disinfect the soil before using, for unquestionably the pest (eelworm) is introduced in it. Treating the soil with boiling water thoroughly destroys them, only reach every part. The old soil should be scalded, so as to kill the pests therein, for they lead a free life as well as parasitic one, living on decaying organic vegetable matter, and even in water containing organic substances.

Ascertaining the Height of Trees (*Junior*). — Though the measuring of trees is not understood so widely as it ought to be, it is, as a matter of fact, very easy to learn. An excellent and thoroughly reliable system is that adopted by Mr. A. Harding, Orton Hall, Peterborough. This capable gardener devised the contrivance shown in fig. 73, by which the heights of any trees may be accurately determined. The tree measurer on the right of the figure consists of a staff 6 feet long pointed for pressing into the ground. To the centre of the staff a piece of half-inch board 12 inches wide and exactly square is affixed with screws. The diagonal cross lath is 3 feet long and perfectly straight. It may be fixed or moveable; if the latter, a small batten being screwed on the board for it to rest on when in use. The plumb line is indispensable, as no correct measurement could be had without it. The plumb-bob may be about the size of a small Walnut, the string passing through its centre, then knotted to make all secure. In measuring the tree the staff is placed at a distance from it so that with the plumb exactly perpendicular, the cross lath points to the top of the tree, the person taking the "sight" resting on one knee or reclining to bring the eye to the bottom of the lath. The lath is then drawn to the ground, where the end rests at C in the figure, or if the lath is fixed a string will answer the purpose of extending the sight line to the ground. From this point C to the centre of the trunk, not the face of it nearest the point, but the middle, will represent the actual height of the tree; or to put the matter concisely, the horizontal line, A C is equal to the vertical A B; and if the tree were blown or cut down its top would follow the course shown by the curved line and rest at C. If a tree has several leaders, as Pinus excelsa and some others often have, the sight should be taken of the most central one, or nearest in perpendicular with the roof of the tree, not a side branch that may happen to be a little taller, as the base line would then not give the true height of the specimen. On level ground it is easy to perceive that altitudes of a number of trees can be quickly ascertained. When the ground is irregular provision must be made for having the line level from the root of the tree, or A in the figure to C. The central board, it may be repeated, must be a true square, the perfectly straight sighting lath

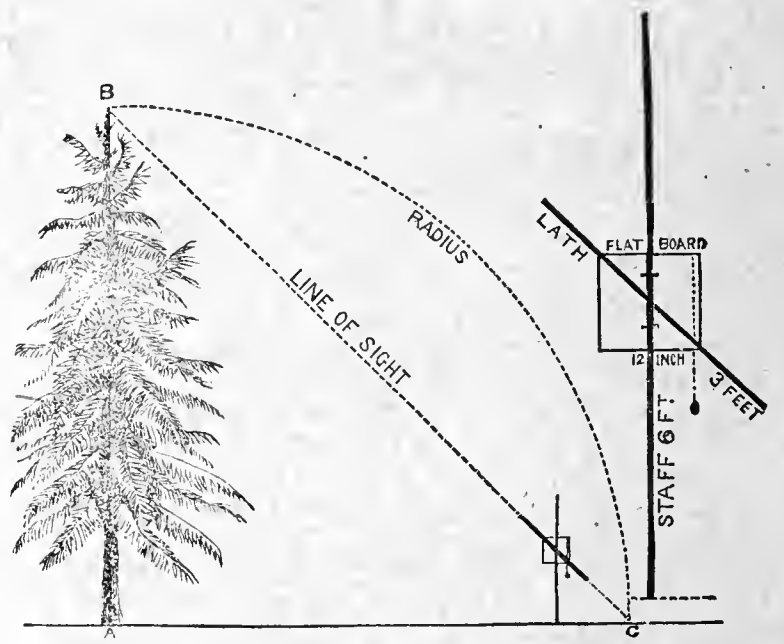

FIG. 73.

resting across it exactly from corner to corner, as the least deviation will lead to error, and the weight must hang positively plumb, as not otherwise can the measurement be accurate. Any handy man can make an appliance of this kind.

Names of Fruits. — *Notice.* — We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. *In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing.* The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. *They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state.* (*H. H.*).—Your specimen was quite rotten. (*A. McC.*).—1, Golden Winter Pearmain; 2, Court of Wick; 3, Winter Quoining. (*D. C. F.*).—1, Golden Reinette; 2, Hollandbury; 3, Dutch Codlin; 4, Minchull Crab. (*M. E. B.*).—1, Winter Nelis; 2, Doyenné du Comice; 3, Nouveau Poiteau; 4, Beurré Superfin; 5, Beurré Capiaumont; 6, Durondeau. (*G. A. Y.*).—1, Alfriston; 2, Cox's Orange Pippin; 3, Blenheim Pippin; 4, unknown, worthless; 5, Ribston Pippin. (*J. D.*).—1, Court Pendu Plat; 2, Cox's Orange Pippin. (*W. T.*).—1, not recognised; 2, Ecklinville Seedling; 3, Hollandbury; 4, Winter Hawthornden.

Names of Plants.—We only undertake to name *species* of plants, not varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*C. W. P.*).—1, Euonymus europæus; 2, Diplacus glutinosus; 3, Panicum variegatum. (*K. J.*).—1, Nertera depressa; 2, dead; 3, a form of Adiantum cuneatum; 4, A. gracillimum; 5, Asplenium bulbiferum. (*L. G.*).—1, Maranta zebrina; 2, Kentia Belmoreana; 3, K. Canterburyana; 4, specimen insufficient, send when in flower.

EDITORIAL NOTICE.—It is particularly desired that all communications, parcels, catalogues, and newspapers intended for the EDITOR, be sent direct to 8, ROSE HILL ROAD, WANDSWORTH, S.W.

COVENT GARDEN MARKET.—Nov. 17th.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	1 0	to 3 0	Grapes, lb....	0 8	to 2 0
Cobs	22 6	24 0	Lemons, case	11 0	14 0
Filberts, 100 lbs.	0 0	0 0	St. Michael's Pines, each	3 0	8 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, ½ sieve	0 0	0 0	Onions, bushel	3 6	4 0
Beet, Red, doz.	1 0	0 0	Parsley, doz. bnchs.... ...	2 0	3 0
Carrots, bunch	0 3	0 4	Parsnips, doz.	1 0	0 0
Cauliflowers, doz.	2 0	3 0	Potatoes, cwt.	2 0	4 0
Celery, bundle	1 0	0 0	Salsafy, bundle...	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Seakale, basket	1 6	1 9
Cucumbers	0 4	0 8	Scorzonera, bundle	1 6	0 0
Endive, doz.	1 3	1 6	Shallots, lb.	0 3	0 4
Herbs, bunch	0 3	0 0	Spinach, pad	0 0	0 0
Leeks, bunch	0 2	0 0	Sprouts, ½ sieve...	1 6	1 9
Lettuce, doz.	1 3	0 0	Tomatoes, lb.	0 4	0 0
Mushrooms, lb.	0 6	0 8	Turnips, bunch	0 3	0 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6 0	to 36 0	Ferns, var., doz.	4 0	to 18 0
Aspidistra, doz.	18 0	36 0	Ferns, small, 100	4 0	6 0
Aspidistra, specimen ...	5 0	10 6	Ficus elastica, each... ...	1 0	7 0
Chrysanthemums, doz. ...	4 0	9 0	Foliage plants, var., each	1 0	5 0
,, ,, single plants	1 6	2 0	Lilium Harrisi, doz.... ...	12 0	18 0
Dracæna, var., doz.... ...	12 0	30 0	Lycopodiums, doz.	3 0	4 0
Dracæna viridis, doz. ...	9 0	18 0	Marguerite Daisy, doz. ...	4 0	9 0
Euonymus, var., doz. ...	6 0	18 0	Mignonette, doz.	4 0	6 0
Evergreeens, var., doz. ...	4 0	18 0	Myrtles, doz.	6 0	9 0
Erica hymalis, per doz....	9 0	15 0	Palms, in var., each... ...	1 0	15 0
,, gracilis, per doz. ...	6 0	9 0	,, specimens	21 0	63 0
,, various, per doz. ...	8 0	12 0	Pelargoniums, scarlet, doz.	2 0	4 0

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d
Arum Lilies, 12 blooms ...	3 0	to 5 0	Maidenhair Fern, doz. bnchs.	4 0	to 8 0
Asparagus Fern, bunch ...	1 0	2 6	Mignonette, doz. bnchs. ...	2 0	4 0
Bouvardias, bunch	0 6	0 8	Narciss, white (French) dozen bunches	2 6	4 0
Carnations, 12 blooms ...	1 0	3 0	Orchids, var., doz. blooms	1 6	12 0
Chrysanthemums, 12 bnchs.	2 0	6 0	Pelargoniums, doz. bnchs.	4 0	6 0
,, ,, 12 blooms	0 6	2 6	Roses (indoor), doz.... ...	0 6	1 0
Eucharis, doz.	4 0	6 0	,, Tea, white, doz. ...	1 0	2 0
Gardenias, doz.	2 0	3 0	,, Yellow, doz. (Niels)	1 6	4 0
Geranium, scarlet, doz. bnchs.	4 0	6 0	,, Red, doz. blooms ...	1 0	1 6
Lilac (French), bunch ...	3 0	5 0	,, Safrano (English) doz.	1 0	2 0
Lilium lancifolium, short, per 12 blooms	1 0	1 6	,, Pink, doz.	1 0	2 6
Lilium longiflorum, 12 blooms	4 0	6 0	,, outdoor, doz. bnchs.	4 0	6 0
Lily of the Valley, 12 sprays	1 0	2 0	Smilax, bunch	1 6	2 6
Marguerites, doz. bnchs....	2 0	3 0	Tuberoses, 12 blooms ...	0 3	0 4
			Violets, doz. bnchs.	1 6	2 0
			,, Parme (French), bch.	2 6	3 6

WORKING AT HIGH PRESSURE.

This does not include an eight-hours day—high pressure does not admit of this. At any rate, garden or farm cannot afford it; they are always at high pressure. There is always work enough to occupy all hands, and work that calls imperatively for the doing. If the actual crops do not need attention (and we find we are never long off the land), there is extensive work at our door with the live stock of all sorts, in which the farm abounds, or ought to abound. The preparation of the different foods, the feeding hours, the cleansing of boxes and sheds, is work that demands constant and careful attention. Nothing slipshod here, if you please. Regularity and punctuality must be ever to the fore.

Here we find the difference that constitutes first or second-class farming. An extra man costs money, but an extra man often insures much more than his wage by the care and assiduity exercised towards those animals under his charge. Mind, we always are keeping a sharp look out on the labour bill, yet still, at the same time, we know that one man cannot do the work of two, and it is the falsest economy to have yards full of badly fed, badly bedded cattle. It is the same on the land. Good farming is ever exacting. The land is ready to do its share, and it repays the worker for thorough cultivation. We fancy we do things fairly well in England—that is, we fancy we get a fair return for our labour, but just now, after reading an account of a Mr. Hallock and his farm (78 acres) in the State of New York, we begin to think we have much yet to learn. True, the circumstances are different, soil different, but we suppose that he, too, like us, is subject to great variations of climatic influences. We speak of our year as one of changing seasons, and truly it is so, for in no two years are any two given seasons alike. Nothing is more certain than the uncertainty of our weather. All this adds to our difficulty, and our summer seasons are generally but short.

We have not the advantage, too (or at least only a few of us), of being so near such a market as New York, and the American, as a rule, is a greater consumer of fruit and vegetables than the average Englishman. Apparently Mr. Hallock is his own carrier—that is, by means of water—so that must reduce the freight bill considerably. We have water carriage here, but most of our canals are only adapted for the slow-going barge or keel. We do not utilise steam power except on our rivers. We trust mainly to railways, and they generally contrive to make their own terms, which are very advantageous to themselves.

We confess we are a good deal puzzled to know where market gardening ends and farming begins. The produce of this States farm savours so of market gardening, of course on a large scale. We rather wish we could see some particulars of English market gardens —*i.e.*, their size and so forth. Most market gardens have a certain amount of glass. This farm appears to have none, or at least no mention is made of it, and we presume the climate is such that the Cucumbers and Squashes grown need no protection against the weather.

The produce of this farm runs something like this:—Potatoes, 4500 bushels, early; Potatoes, 1800 bushels, late; early Cabbages, 4260 barrels*; corn cobs (Green Maize), 1000 bushels; Strawberries, 9000 quarts; Onions, 8350 bushels. Of these 2300 bushels were grown from sets. Then there is other produce not distinctly specified, or with no note of quantity, such as Carrots, Cucumbers, Squashes, hay, Onion seed, and Carrot seed. The ground never lies idle here. The early Potato crop, which was dug the first week in July, yielded 300 bushels per acre. The ground was at once planted with Cucumbers, Carrots, Squashes, or Maize, the head or cob of which is eaten green as a vegetable.

Mr. Hallock finds it pays to set new Potato seed; he, like us, finds the varieties so soon deteriorate, and he grows what used to be a favourite here, Early Rose. We have improved upon that. We believe some of our good "earlies" are of American birth. To lose no time the Potatoes are well sprouted before being set. The Onion crop seems to be most prolific. We ask, Can it be there is no Onion maggot in New York State? The Onions are placed in lines 14 inches apart, and between the rows we find Carrot; the Onions are lifted first, and then the Carrot has the ground to itself. Carrots are sown as late as July; well, that may do in New York State, but we fear it would not answer here. Here, again, all Carrot seed is sprouted before being drilled, which it is through a special contrivance which prevents the breaking off of the sprouts.

Cabbages fluctuate; we should fancy a season too cold for tenderer vegetables would help to raise the value of the Cabbage. It is said that if the English working man can get plenty of (coarse) greens, he prefers fat, rough mutton, as the grease of the mutton and the "greenery" form a diet that his soul loves. There is no doubt of it that few dishes are more delicious to the unspoiled palate than a bit of bacon boiled in the pot with Cabbage or Spinach.

Mr. Hallock does not forget to feed his land, as it so well feeds him. Not forgetting the home manure, he will purchase as much as 1000 two-horse cartloads of stable manure. Now we are not quite sure about this stable manure. Sometimes the term "stable" is

* We are not told weight of these.

applied to cow houses. We had a feeling that horse manure proper was *not* of the highest value; we are quite ready to be corrected on this point, but we think we are right. Added to this doubtful manure is something really good—viz., 70 tons of ground fish manure and complete fertiliser. What must be the smell of this 70 tons in the aggregate we leave our readers to imagine. We trust it is speedily ploughed in.

No wonder with all this tillage early Potatoes yield 11 tons per acre. It is stupendous. We could not afford to do so much tillage here except in very rare cases; the carriage would kill everything, let alone the original price of the fertiliser. The hands, too, call for a word of acknowledgment. No stinted labour here; that is, if the men are up to anything at all. In the busy season forty men are kept in constant employment. They are fed and lodged on the premises, and this in itself must entail a good deal of thought, let alone work. There is another point where Mr. Hallock is much in advance of his neighbours. When an article is out of season it is usually dear, so Mr. Hallock contrives by means of cold storage to keep certain articles till the ordinary market is clear of them. Then he comes in and reaps the reward of his forethought.

In reading this account for the first time we were somewhat puzzled by the expression "Onion sets." Have we solved the difficulty when we suggest Eschalots?* In no other way, we think, could Onions be grown from sets; at least, there is no method known to us, and we are perfectly sure that a man of Mr. Hallock's acumen will grow pickling Onions of some sort, and certainly Eschalots are most prolific and easily managed.

WORK ON THE HOME FARM.

Weather conditions are still dry and free from frost. We have had a little drizzling rain, but not enough to stop thrashing or interfere with any farm work; indeed, Wheat has gone into a much drier seed bed in November than it did in mid-October. The plant is now growing so fast that there may be danger of its getting too forward. There are many complaints of dry wells and springs, and of difficulty as to water supply for cattle in the yards. To-day a neighbour has been carting water a mile and a half for threshing purposes.

We are delivering Potatoes from the pie, and find much more disease than appeared when they were covered up. There are many complaints of such being the case, and especially does this apply to Reading Giants, which are seriously affected. Much alarm is thus being caused, and we fear many Potatoes will be forced on the market in order to get rid of diseased tubers at a good price. The effect, however, will be to temporarily ruin the market, and growers would be much wiser to turn the Potatoes over, picking out all tainted ones, and carefully pie them down again; and whilst writing on this subject, we must strongly advise growers to sell their Potatoes at home to the highest bidder, not to send them to be sold on commission. There never was a better opportunity of striking a blow at the commission trade, which has done very serious harm in all markets. Hedges and ditches call for attention when there are hands to spare. It is a good plan to get on with this kind of work, for little or nothing can be done during a frost period, and we may have a severe one in store. A mild autumn usually precedes a severe winter.

Basic slag should be ploughed in any time between now and Christmas; it will be much more available for either grain or roots if sown now than sown in spring or summer with the crop.

WEBB & SONS' ROOT COMPETITION.

THIS competition covers nearly the whole of Great Britain, and is restricted to crops grown from Webbs' seeds, and with the aid of the firm's special manures. The judges were Mr. E. Doolittle, High Habberley, Kidderminster; Mr. H. Sankey, Fulfin, Lichfield; Mr. J. R. Butler, Churchill, Kidderminster, and the following is a list of their awards:—

Five acres of Webbs' Swede, open to the counties of Salop, Stafford, Montgomery, Warwick, and Leicester.—First prize, £15 15s., Mr. S. Timmis, Charnes Old Hall, Eccleshall, 50 tons 18 cwt. per acre. Second prize, £10 10s., Mr. W. Humphreys, Evenall, Oswestry, 41 tons 2 cwt. per acre. Third prize, £5 5s., Mr. R. Preece, Cressage House, Shrewsbury, 40 tons 1 cwt. per acre. Three acres of Webbs' Mangold.—Prize, £5 5s., Mr. Roger Gittens, Alberbury, Shrewsbury, 52 tons 6 cwt. per acre.

Five acres of Webbs' Swede, open to the counties of Hereford, Monmouth, Brecon, Glamorgan, Radnor, and Pembroke.—First prize, £15 15s., Mr. R. Thomas, Rowston, Pembroke, 41 tons 16 cwt. per acre. Second prize, £5 5s., Mr. J. Thomas, Tile House, Boverton, Cowbridge, 39 tons 12 cwt. per acre. Three acres of Webbs' Mangold.—Prize, £5 5s., S. H. Wood, Esq., Norden Farm, Leominster, 53 tons 18 cwt. per acre.

Five acres of Webbs' Swede, open to the counties of Oxon, Bucks, Berks, Wilts, Hants, Surrey, Worcester, and Gloucester.—First prize, £15 15s., Mr. W. M. Harvey, Allington Manor, Bishopstoke, 38 tons per acre. Second prize, £5 5s., Mr. L. Pullin, Severn House Farm, Berkeley, 37 tons 2 cwt. per acre. Three acres of Webbs' Mangold.—Prize £5 5s., Mr. G. Dodge, Cannon Court Farm, Fetcham, Leatherhead, 54 tons per acre.

Five acres of Webbs' Swede, open to the county of York.—First prize, £10 10s., Mr. W. Scorer, Givendale Grange, Borobridge, 40 tons 3 cwt. per acre. Second prize, £5 5s., Mr. T. Bradshaw, Amotherby, Malton, 34 tons 13 cwt. per acre.

Five acres of Webbs' Swede, open to the counties of Bedford, Cambridge, Cornwall, Cumberland, Cheshire, Devon, Derby, Dorset, Durham, Essex, Hertford, Huntingdon, Kent, Lancaster, Lincoln, Middlesex, Norfolk, Nottingham, Northampton, Northumberland, Rutland, Somerset, Suffolk, Sussex, Westmoreland, Carmarthen, Carnarvon, Cardigan, Denbigh, Flint, and Merioneth.—First prize, £15 15s., Mr. J. Hayton, Beck Farm, Wigton, 56 tons 8 cwt. per acre. Second prize, £5 5s., Mr. E. H. Jones, Penarth, Four Crosses, Chwilog, R.S.O., 40 tons 3 cwt. per acre.

Five acres of Webbs' Swede, open to the counties of Roxburgh, Haddington, and Berwick.—Prize, £10 10s., Mr. W. Gemmill, Greendykes, Macmerry, 24 tons 11 cwt. per acre. Five acres of Webbs' Swede, open to the county of Perth.—First prize, £10 10s., Messrs. J. & D. Morton, North Muirton, Perth, 33 tons 1 cwt. per acre. Second prize, £5 5s., Sir R. D. Moncrieff, Bart., Bridge-of-Earn, 31 tons 10 cwt. per acre. Five acres of Webbs' Swede, open to the counties of Forfar, Fife, and Kinross.—Prize, £10 10s., Mr. Geo. Reid, Ladywell, Kirriemuir, 25 tons 11 cwt. per acre.

Five acres of Webbs' Swede, open to the counties of Aberdeen, Banff, Kincardine, and Elgin.—Prize, £10 10s., Colonel Leith Hay, C.B., Kennethmont, 23 tons 10 cwt. per acre. Five acres of Webbs' Swede, open to the counties of Stirling, Dumbarton, and Clackmannan.—Prize, £5 5s., Colonel Murray, Polnaise Castle, Stirling, 25 tons 10 cwt. per acre. Five acres of Webbs' Swede, open to the county of Ayr.—Prize, £10 10s., Mr. John Allan, Holmston, Ayr, 37 tons per acre.

[* No. If Onion bulbs the size of hazel nuts are obtained by late sowing—the end of May or early in June—taken up in October, stored, and planted in March, they will develop into large bulbs, at least those will that do not produce flower stems, and the larger the bulbs are when planted the more likely is bolting to follow. Try the plan.]

THIS YEAR'S WORLD'S WHEAT CROP.—Mr. Broomhall, F.S., Corn Trade statistician, has issued his annual statement, showing the world's Wheat crop raised this autumn. The total production in Europe, reckoning the British crop at practically the same quantity as the last, is 140 million quarters, compared with 185 millions in the previous year, which was the average crop. Compared with the so-called famine year of 1891, the deficiency amounts to 10 million quarters. North and South America he reckons as having produced 93 million quarters, of which the state raised 74, compared with 59 last year. The total production of the Americans in 1891 was 101 millions. Asia, Africa, and Australia are reckoned as having produced somewhat in excess of the preceding year, but fully 11 millions less than in 1891. The world's total production is given at 278 million quarters, compared with 298 millions in 1896, 309 millions in 1895, 320 millions in 1894, 314 millions in 1893, 305 millions in 1892, and 308 millions in 1891.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

DATE.	9 A.M.					IN THE DAY.				
1897. November.	Barometer at 32°, and Sea Level.	Hygrometer.		Direction of Wind.	Temp of soil at 1 foot.	Shade Temperature.		Radiation Temperature.		Rain.
		Dry.	Wet.			Max.	Min.	In Sun.	On Grass.	
	Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Inchs.
Sunday 7	30·143	42·4	41·8	N.	45·4	49·3	40·6	53·2	33·9	0·046
Monday 8	30·159	49·4	49·0	N.E.	46·0	53·9	42·5	53·9	36·3	0·119
Tuesday 9	30·318	52·2	52 2	N.E.	47·9	54·1	49·1	55·1	48·2	0·010
Wednesday.. 10	30·252	46·9	44·2	E.	48·8	49·6	45·4	58·6	41·1	—
Thursday.... 11	30·221	34·1	34·1	W.	46·1	53·6	23·4	56·1	29·2	—
Friday 12	30·007	53·5	52·2	S.W.	45·4	56·9	34·3	58·9	35·1	—
Saturday .. 13	29·713	56·9	54·4	S.W.	48·1	59·0	53·3	62·9	50·8	—
	30·123	47·9	46·8		46·9	53·8	42·7	57·0	39·2	0·175

REMARKS.

7th.—Sun through slight fog in morning; dull after noon.
8th.—Dull and foggy throughout, with frequent rain.
9th.—Dull and damp, with more or less fog almost throughout.
10th.—Fair early, with occasional spots of rain; a little sun after 11 a.m.; overcast evening.
11th.—More or less fog almost throughout.
12th.—Fair, with a gleam of sun about 10.40 a.m., but occasional spots of rain.
13th.—Fair day, but slight rain between 8 and 9 a.m.; clear evening, halo at midnight.
Temperature not remarkable, rain still small.—G. J. SYMONS.

Journal of Horticulture.

THURSDAY, NOVEMBER 25, 1897.

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ONIONS AND SUCCESSIVE CROPS.

THOSE who are desirous of making a little money out of the land might advantageously think seriously of Onions. I have noticed that not only in our neighbouring town, but also others, foreign Onions find their way into shops where "home-grown" bulbs are never offered for sale. I am told that buyers prefer the Spanish Onion on account of its mild flavour, but this I think might be overcome by growing varieties of the Excelsior type, treating them similarly to those grown for exhibition.

By way of experiment I sowed a packet of Ailsa Craig thinly in boxes in the middle of February, standing them in the vinery. The seedlings were planted out at the end of April in two rows 26 yards long, 1 foot apart in the rows, and 6 inches from plant to plant. When taken up they weighed 184 lbs., and were disposed of at once for 5s. per cwt. We have no difficulty with our Onion crops. The seeds are sown thinly in drills 1 foot apart, when the ground is in good working order from the end of February to the end of March. Previously it has been trenched 2 feet deep, or to the hard subsoil, which is broken up with a fork or pick, and a layer of manure is thrown into the bottom of the trench. Burnt earth and lime are well worked into the surface, and a good dusting of basic slag is given before the ground is raked over ready for the drills. No thinning is done except as required for cooking. We sprinkle soot between the rows when the plants are growing freely, and again when they can conveniently be got between without materially disturbing the tops.

This year our crop is not so good as usual, and we did not expect it would be, as the land had not been trenched for two years, and then only a moderate amount of manure both in quantity and quality was worked in. We had the two rows next to those that were planted out of the boxes weighed and found 164 lbs., but an unusual quantity had been pulled from the unthinned rows during the season. We usually grow a ton over our requirements, and these are disposed of wholesale in our local market for £6. The variety we grow is Sutton's A1. We sow 13s. worth of seed.

About the middle of September the bulbs are lifted and laid in a shed, and the ground is then raked over and planted at once with spring Cabbage. Seed of Ellam's Early is sown thinly in an open place about the middle of August, the young plants being placed direct from the seed bed, 1 foot apart each way. A little soil is drawn up to stems in October to steady them, and in the spring the ground is sprinkled with soot, and liquid manure run between the rows. We commence cutting about the middle of April, and these are sold wholesale at 8d. a dozen.

From the middle to the end of June the Cabbage are cleared off, and Celery trenches are thrown out, 2 feet wide and 12 inches deep, a space of 4 feet being left between the rows for earthing. By this time the Mushroom beds are exhausted, when a good dressing of this manure is wheeled and dug-in. The trenches are then thoroughly soaked with clear water, and the following day with manure water; and when the soil has dried a little the plants are put out two rows in a trench 9 inches by a foot. They are well watered after planting, and for several evenings are damped over with a coarse rose watering pot. Earthing-up is done at two or three times, commencing at the middle of September. We grow Sulham's Prize Pink, of which the seeds are sown from the end of March to the middle of April. The seedlings are pricked out on a temporary hotbed, and from which a crop of Lettuce has been cut. The price we get is from 1s. 6d. to 2s. per dozen sticks. To this must be added a crop of Lettuce, that is taken from the spaces between the rows, and sold for 6d. per dozen. Before sowing the Lettuce seed, drills are drawn and soaked with liquid manure.

I have stated what we are in the habit of doing, because we think people in their own neighbourhood should supply the local market instead of sending to other towns and other lands for what is required. We have little encouragement to grow for market, and the only unpleasantness is in having too much for our requirements. It has been for some years the custom to sell a little, allowing 10 per cent. commission. I find £10 useful for my own pocket, and, besides, believe it is the duty of those who have anything to do with land to get as much out of it as possible. What land by a few years' judicious working can be made to produce but too few have any conception.—S. B. O.

HINTS ON JUDGING GROUPS AND PLANTS.

Much has been written about the methods practised in judging cut blooms. Little, however, has been said with regard to the adjudicating of plants, either singly or collectively. There are many persons who do not grow Chrysanthemums for the purpose of exhibiting them in a cut state, yet do much toward the embellishment of an exhibition by contributing plants in some form or other. Such growers, then, are entitled to as much consideration as those who compete in the cut bloom section. I do not say that plant growers do not have their products thoroughly and well estimated, but there exists some confusion as to the manner in which the relative merit of individual exhibits are pronounced.

Chrysanthemums in groups occupy at many exhibitions a strong feature, indeed they add as much, if not more, to the general beauty of a show, than all the cut blooms. As in judging the latter there is a want of unanimity amongst exhibitors and visitors as to the position in which certain exhibits are placed. Judges have to consider the wording of the schedule, where they learn the requirements of the committee as to the points of excellence that a certain group should contain. At one show where I assisted in judging, my colleagues and myself incurred the displeasure of certain members of the committee for awarding the first prize in a group class contrary to their wishes, but quite in accordance with the specification laid down in the schedule. Briefly, the wording was thus: "Group of Chrysanthemums and green foliage plants arranged for effect." The plants in the first prize exhibit were arranged in an undulated manner, without the slightest sign of crowding; every bloom could be distinctly seen, the plants being nicely interspersed with Palms, the whole presenting a pleasing appearance. We had no hesitation in placing this group first. The second prize exhibit was a sloping bank-like arrangement, not lightly arranged, but the individual quality of the blooms was superior to those in the first prize group. At six o'clock I was told that we had made a mistake; it was quality, pure and simple, in the Chrysanthemum blooms that they intended to encourage. Here was an instance, then, of wrongly wording the class in the schedule.

As a rule the prizes are offered for a "group of Chrysanthemums, quality and general effect to be the leading features." In nine cases out of ten the idea is to encourage quality of bloom and a sensible method of disposing without recourse to the "packing" method of arrangement. It is not possible to lay down a hard-and-fast rule of the points of excellence to be found or required in groups of Chrysanthemums as compared in judging cut blooms. So many points go to render one particular group better than its neighbour. Every judge of my acquaintance prefers dwarf plants to tall ones, but at times a 4-foot plant will have superior blooms to that 1 foot less. The dwarf one may not have good foliage, or the plants may be huddled together so as to render each variety almost unrecognisable. This particular dwarf plant has but one point of excellence, whereas the taller has others also.

Groups of Chrysanthemums alone must be judged upon combination principles. First the plants should be dwarf, well clothed with foliage, especially the front row. Each should carry large fully developed blooms of good colour and be quite fresh. Above all they must not be so crowded together as to lose individuality. The situation the group occupies must be considered a little, but a smooth, flat, sloping form of arrangement is objectionable. A little variation in the manner of disposing of the plants is well, and it is surprising how a few good blooms elevated above their neighbours enhance the appearance of a group. The greater the variety of form the blooms contain the more distinctly is it a representative group of Chrysanthemums. In no case, however, should this latter point be allowed to carry weight if the individual blooms are not of good quality, but simply placed there to include all sections. What we want to see is excellence of bloom, not mediocrity.

Some exhibitors so arrange their plants that the front row, although dwarf, stand upon pots 8 or 10 inches high, simply with the idea of preserving the sloping face consequent upon the plants being too tall at the back. Such instances as this need condemnation. The front row of plants should in all cases stand on the floor. If the regulations allow of the pots being hidden by foliage plants or other device, all well and good, but a clean one containing a plant clothed with healthy leaves down to the soil cannot be very objectionable. Some groups are a mere forest of white stakes, so plentifully is this method of supporting the plants and blooms persisted in. This is a most objectionable practice, and one that should receive the most pronounced condemnation. The reasonable exhibitor who supports his plants with stakes of an invisible colour, and his blooms by the aid of thin wire, should surely reap some advantage.

I have dealt rather lengthily with Chrysanthemums in groups only, and I will now make a few remarks about what I will term the combination group classes—viz., the inclusion of foliage and other flowering plants; to show the Chrysanthemum in its utilitarian point of view when combined with other decorative plants. Committees of Chrysanthemum societies have, almost without exception, recognised the fact that a combination of Chrysanthemums and other plants creates a more pleasing and valuable effect than do Chrysanthemums alone. The visitor wearies of such a glare of colour year after year; and besides, combination groups have a greater educational value.

Perhaps the most effective groups are those where the addition to Chrysanthemums is confined wholly to foliage plants. It is somewhat difficult to obtain the right kind of flowering plants to associate harmoniously with the Chrysanthemums in possession. Not so, however, with foliage plants, as Palms, Crotons, Eulalias, and Bamboos lend themselves so effectively to the relief of the highly coloured Chrysanthemum blossoms. The point of first consideration is the individual quality of the latter; in this case the Japanese varieties are the most effective. Not only should the plants be dwarf, but thoroughly well clothed with healthy leaves, and displayed in such a manner that the plant itself, irrespective of the blooms, is a feature of the group. Crotons grown on single stems, not more than a yard high, with drooping distinctly coloured leaves, are unsurpassed for this form of decoration, and such should have due weight accorded them by the judges. In a group of this kind pots ought not to be visible, as so many opportunities present themselves of hiding them. The rule must be strictly enforced that all plants are growing in pots and not merely limbs cut off and inserted in pots for the time being. An exhibitor who does this secures an undue advantage over his opponent who cultivates his plants successfully. The better the quality of the moss employed for covering the pots the greater the advantage an exhibitor would obtain.

A summary of points, then, in judging combination groups would be quality of individual portions of the material employed, and lightness in arrangement with harmony of colouring. For instance, the base of a mound from which a highly coloured Croton Warreni rises, should not be composed of Cullingfordi Chrysanthemums, or again, Eulalia japonica marginata must not rise above a group of Elsie or Elaine Chrysanthemums.

In judging plants there are fewer points to observe. The schedule of prizes generally stipulates for a given number—say, six or nine. The point to determine is the plants which have the best blooms, accompanied with a due share of leaves. There are two classes of specimen trained plants. Some cultivators grow the plants to a large size—say, 5 feet in diameter, with 200 blooms or more upon each plant, and such plants as these may, from a training point of view, be meritorious examples; but they are not useful in a decorative sense, as they occupy so much space. Plants that are limited in size to, say, 3 feet in diameter, each carrying from thirty to fifty blooms of high-class merit, are much more desirable than those grown for size alone. Those having a large number of blooms, but of small size, cannot compete with those of less dimensions, but carrying finer blooms and good foliage. Of course, bush plants ought to be well clothed with leaves and be freely flowered. The quantity of blossom produced, along with perfect foliage, is the main point of consideration. —E. Molyneux.

BROAD VIEWS OF GARDENING.

How beautiful at all seasons are those demesnes where the spirit of gardening has been permitted to roam untrammelled through their length and breadth! Possibly it is only given to the higher and keener criticism, forming its judgment by analysis, to appreciate the true value of that taste, energy, and forethought which provides unqualified and unlimited gratification to the cultivated eye. The development of natural beauty is an art, and at comparatively small expense some of the happiest and most pleasing effects have been obtained.

I have lately visited a noble family, on whose estate so much quiet work is being done, that it seems strange so little is done in others offering as fine a field, and possibly even greater facilities for it. With the happy example in my mind it is easy to state a case illustrative of the question. We have here an example of the British gardener in the higher ranks of his calling, who has certainly ample to do, to think of, and to think for, in the general economy of garden management, the plots of his garden being measured by acres, the walks by miles, and the glass by thousands of feet; who, nevertheless, is steadily, in some instances perhaps stealthily, insinuating the higher doctrine of picturesque gardening beyond his immediate sphere.

In more than one quiet corner of the garden is to be found unobtrusive preparation of various plants destined to ornament some particular place or create particular features as opportunity occurs. On sunny bank or in shady nook bold patches of appropriate plants, as are perfectly in keeping with their surroundings, give to them additional interest and charm, and if one were unaware of the quiet work always in progress the superficial conclusion might be arrived at that here Nature was bountiful in her gifts and happy in her methods of distribution. Who could not enjoy that mossy dell in which hundreds of Osmunda regalis are luxuriating *au naturel?* Yet is there just the possibility remaining that the ministering hand which transferred them from a distinct part of the estate to their present happy home would not be recognised? Then, again, in a ravine, where damp rocks on the shady side are clothed far up with the burnished fronds of the common Hartstongue, what secret is there in a sense so natural? That this was not a part and parcel of the local flora is obvious to those who can bring past observation in context with the present, and what secret there is is vested in a visit when a newspaperful of fertile fronds was gathered at the right time, brought home, and lightly dried, to be afterwards as lightly shaken over the face of the moist rocks.

Near at hand is an old Ash tree springing into twin stems some 20 feet up, and cradled in the fork is a flourishing plant of the common Polypody, with rhizomes creeping slowly but surely up the limbs on either side. This is one of those little freaks that Nature delights in, and who shall gainsay her methods of adornment? There are, however, so many felicitous expositions continually cropping up in but a brief tour of inspection through this particular estate, that he who would not on the whole be gratified by the good work done is indeed hard to please. It is only on returning to the garden that the missing link 'twixt Nature and Art is discoverable in the large provision of Virginian Creepers, whose crimson flecked streamers depend from many an old tree trunk through the woods on an autumn day. There is no training of our hands to such things. It is the magic spell woven by the spirit of Nature around the disciples of gardening, whose lives are softened and even beautified by it.

In another patriarchal demesne where some few instances occur of certain plants being naturalised by the acre, one would like to trace through silent generations the connection between cause and effect. Just without the boundary wall is an ancient graveyard, and there the curious-minded may discover among the quaintly worded memorial stones one massive prostrate slab placed by a certain earl 150 years ago to the memory of his head gardener for faithful service to him and his father before him. I like to link, rightly or wrongly, this grand old gardener with those picturesque sheets of Omphalodes verna, covering an acre at least, and other things which, in a similar manner, adorn the banks and braes around this ancestral home; and it is pleasant to see and to know that in this severely practical age the mantle has descended upon men who, as gardeners, find time, and ways, and means to open out or contribute fresh fields of delight in the unlimited possibilities of picturesque gardening.—The Squire.

INTELLIGENCE IN PLANTS.

(*Continued from page* 429.)

The spreading Dogbane is also a fly-catcher. It has five traps inside it, all capable of catching and holding flies, and for no purpose, so far as can be ascertained. The innocent-looking little "Sundew," Drosera rotundifolia, however, captures flies on business principles. The leaf is fitted with long and short hairs, and round the base of these is a sticky secretion in which the unhappy fly or ant is detained till the short hairs can bend inwards towards it and hold it till the long hairs can do the same. Then to make sure the leaf folds itself back till the point of it touches the stem, and after a time opens out, showing the dry skeleton of its victim, and with the usual innocent look asks for more. Why do the five pollen-bearing stamens of Saxifrage Parnassia palustris bend back over the stigma of its own flower so as to cover it and prevent its fertilisation? and why do not the whole five ripen together as usual, instead of one by one? The method prevents self-fertilisation in a very clever and pretty way. If all five were ripe at once it could not be prevented. The pods of the Broom, Vetch, and Bird's-foot Trefoil cease to grow and begin to dry at a certain point, and their contents do not, and when the crisis arrives the pods burst and send the seeds out pell-mell. Each half of the pod twists itself into a sort of ringlet. The Dog Violet has three boat-shaped valves, each with two rows of seed, and on a hot day the valves dry and crowd the seeds so that the least touch explodes the lot, and they shoot up into the air. The capsules of the Mesembryanthemum, and that of the Veronica, only discharge their cargoes of seed in wet weather.

The capsule of the Dead Nettle, as if to show a new idea, divides itself into four compartments. In the Prunella these small prisons and the seeds inside stay on the calyx or outside wrapping of the flowers till the sepals, opening up with the rain, push them overboard. The Cranesbill has five seeds each in its shell, and these when ready all split at the same moment, and take a flying leap of some feet. The Erodium seed, wrapped in a modified leaf called a carpel, springs away from its parent, and has in some way possessed itself of a long thread-like filament, which curls into a sort of vegetable corkscrew. When it begins to rain this corkscrew commences to straighten itself out until it gets the loose end of the corkscrew against something firm, and thus in straightening itself out forces the seed down towards or into the soil; then it dries, winds itself up into a spiral again, and by the next shower comes has found some other firm object against which to place its free end, and down goes the seed a bit further. Several of the seeds of the Anemone and Clematis tribe and the Feather Grass (Stipa pennata) screw themselves into the ground in this way. The grains of the Barren Oat and other Grasses have these corkscrew arrangements, and in damp weather a heap of them will begin moving off hither and thither, as if alive.

The Common Wood Sorrel has an elastic outer coat, which when touched fires the seed off quite a distance. So does the Hairy Cress and the "Touch-me-not." The Anastatica hierochuntica has an entirely different method. It does not cast its seed off to seek its own living, but just takes it about till it finds a proper place for it. It then dries into a ball, keeping the seed in the centre, steps down from its pedestal and lets itself be blown about the desert till it finds a moist place, when it opens out and lets the seed go. An Australian Grass and a Brazilian Club Moss have similar habits. So has the Bupthalmum maritimum. Mesembryanthemum trifolium of the Cape, when closed up, might be mistaken for a coat button, but put into water it suddenly bursts into something like a star-fish with a dozen rays. Then we have the Sand Box Tree, the fruit of which, like a flat large Orange, is divided into a dozen lobes or more, each containing a seed. When ready these lobes go off like a gun and send the seed out an immense distance, and to make fully sure that the seed cannot be retained the pod or lobe divides into two. But Nature has ten thousand ways of achieving her ends, and makes use of all sorts of media.

The seeds of the Mangrove germinate on the tree, and drop with ready-made roots into the swamp below. Here let us think a bit. The Mangrove tree grows in a deep horrible swamp, and if the seeds dropped in the usual way they would sink too deeply and be smothered, or be liable to frequent disturbance, but dropping with a ready-made root, and already germinating, there is something to keep them afloat and prevent their entire submersion. When we take into consideration the further fact that plants change their habit with changing

habitat, there seems to be something very, very like reason and intelligence at work.

Of the Nicaraguan Acacia every thorn is tenanted by ants, and if the plant is shaken they swarm out and attack the aggressor, and so protect the tree from browsing animals, and more especially from the leaf-cutting ants, which are otherwise terribly destructive. The plant secretes honey for its guests, and fruit-like bodies grown on the leaflets and the whole contents of the spines are evidently meant for their support. These ants are not known to exist anywhere else, and whenever Mr. Bell sowed the seeds of this Acacia where none of its friendly ants existed the seedlings were promptly devoured by the leaf-cutting ants.

The Harebell and the Daisy seem to have nothing in common, or at least very little; yet it is evident that they mark the opposite extremes of one and the same series. A common ancestor for both is evident. "These transition forms," says Oswald, "Harebell, Rampion, Sheep's-bit, Hemp, Agrimony, and Daisy have deviated, each more or less, from the direct line by reason of adaptation to climate and surroundings, as well as to the severe competition to secure a place in Nature." How, without conscious intelligence, are we to explain these gradual adaptations?—(*Paper read by* Mr. W. PICKARD *at a meeting of the Sheffield Chrysanthemum Society.*)

(To be concluded.)

COLOURED BARK FOR WINTER EFFECT.

DURING winter, when deciduous trees and shrubs are destitute of leaves, it is interesting to notice the great variation of colour produced by the young stems of various genera and species. In some cases the bark is so highly coloured as to make it worth while to grow groups of those things on purpose for the winter effect.

It is also interesting to notice the difference in the colour of the stems of different species of one genus. In the genus Rubus, for instance, we have a wide variation of colour. In Salix the same thing occurs, and in some species a wide difference occurs also in the varieties. In other genera one colour appears to prevail in the whole of the species, differing only in shade. The genera which are most productive of coloured stemmed species are Rosa, Rubus, Cornus, Salix, Acer, Spiræa, Philadelphus, Betula, Berberis, and Tamarix, with odd species from other genera.

Among species of Roses, some of the best coloured are R. carolina, R. lucida, R. nutkana, R. ferruginea, R. pomifera, R. acicularis, and R. blanda with red stems, R. rugosa with light-coloured bark thickly covered with brown spines, and R. alpina with red stems thinly coated with purplish bloom, the latter being the most conspicuous of all.

Many of the species of Rubus, such as R. villosus, R. corylifolius, and R. laciniatus, have red stems, but more conspicuous are those which have their stems coated more or less thickly with white bloom. The best of these are cæsius, lasiostylis, biflorus, leucodermis, neglectus, and racemosus. Cæsius has red stems coated with grey bloom, the bloom not being too thick to hide the red beneath. Lasiostylis is a Chinese species, resembling in habit our common Raspberry. The stems are thickly covered with white bloom and short purple spines. Biflorus is, perhaps, the most conspicuous of the whole group. It is a temperate Himalayan plant of vigorous habit. The stems are so thickly coated with white bloom that people often imagine that they have been painted. It is, without doubt, one of the most remarkable of our coloured stemmed shrubs. Next to this the most striking is neglectus. In this case the stems are bright red, and thinly covered with white bloom, with occasional thicker patches of bloom which, in some lights, has a violet tinge. Leucodermis has red stems thickly coated with bloom. Added to these there are deliciosus, spectabilis, and odoratus with light brown stems, and phæniculasius with green and red stems thickly covered with reddish brown hairs, and a few strong spines of the same colour.

Of Salix we have the red, yellow, and purple barked forms of S. vitellina, the yellow stems of lucida, daphnoides with the young shoots coated with white bloom, and fragilis var. basfordiana, a tree of considerable size, with the young growths red and yellow.

The genus Cornus adds considerably to our list, as some of the very best coloured stemmed plants belong to this family. The most conspicuous are alba and its varieties, Baileyi, Nuttalli, amomum, sanguinea, and stolonifera with red stems, and alternifolia with dark purple stems; also a yellow stemmed variety stolonifera.

Several Acers have ornamental stems, the most noticeable being Ginnala, which has the old wood brown and the young red, japonicum and varieties, and palmatum with stems varying in the different varieties from grey to dark red, and argutum with bright red stems.

In Spiræa and Philadelphus the stems of most of the species are bright brown, the colour being more marked throughout the latter than the former genus. Of Spiræas the brightest are S. salicifolia, canescens, japonica var. glabrata, bracteata, media, arguta, and Menziesi. Several of the Berberis have red or brown bark, the most noticeable species being virescens with red, and integerrima with dark brown stems.

Among other genera which have one or more species with bright-coloured bark there is Tamarix, with very dark purple, almost black stems. Ribes, with the species sanguineum, with reddish-brown stems; aureum, with brown; alpinum, with grey stems; and speciosum, with the young wood light and the old wood dark. Neillia opulifolia var. lutea has bright brown bark, as also has Stephanandra flexuosa and Nevinsia alabamensis. Added to these we have the bright green of Kerria japonica, and the numerous species of Cytisus and Genista; also the greenish-brown young wood of Staphylea trifolia, and the red stems of several of the species of Ceanothus. Although not exactly beautiful, the winged stems of Euonymus alatus are interesting. The stems are four cornered, the angles being formed of cork, which extends along the whole of the growth.

Among trees we have the bright brown of Taxodium distichum, the silvery trunks of Beech, and the golden bark of Fraxinus excelsior var. aurea, together with a great variation among the species of Birch. Of the latter the common Birch, Betula alba, is well known, its white trunk and dark pendulous branches being very conspicuous among other trees. Besides this there are papyrifera and ulmifolia var. costata, both with white bark; Ermanni, with the old bark dark brown, which during winter peels off, leaving the young bark beneath white; and lutea and nigra, with dark brown bark. The manner in which large strips of the outer bark of nigra peel off is very interesting. A plant of this should be found in all collections.

Many more plants could be mentioned which are more or less useful and interesting from a gardener's point of view, but these will be sufficient to show what a wide variation of colour exists in the bark of hardy trees and shrubs. The colour is always best in well-grown first year's wood, so it is necessary to aim at good wood each year if an effect is wanted. In large gardens or parks a few masses of these coloured stemmed plants will be found an acceptable addition, especially as some will grow where really good flowering shrubs would be a failure. By the side of a pond or lake, or on a marshy piece of land, the varieties of Salix vitellina would be at home. (It may be mentioned, in passing, that to obtain the best colour from these the wood should be cut hard back each spring, so that long young shoots are made.)

In drier places masses of Cornus would look well, particularly if planted thinly and the ground beneath carpeted with Winter Aconites, Snowdrops, Chionodoxas, or kindred plants. The white Rubus looks well when grown near masses of evergreen shrubs. Masses of Cornus sanguinea, species of Roses, and Spiræas might be made in parks and plantations, where, besides being bright in winter, they would be useful as cover for birds. Most of the plants mentioned are of the easiest cultivation. Many grow well in inferior soil, but it is better to give a little good soil to last the plants for the first year or two; after they have once become well established they will take care of themselves.—W. D.

CULTIVATION OF PERENNIALS.

PERENNIALS are becoming very fashionable, and deservedly so, as they are better suited to our climate and give a greater display for a longer period than many of our tender bedding-out plants that require housing nearly eight months in the twelve. What is more beautiful in the autumn months than a carefully selected border of perennials, planted in large patches, coming into flower just as the tender bedding-out plants are almost past their best?

Many of the tall-growing sorts are suitable for room or table decoration, as they can be cut with a good length of stem; in fact some are quite as suitable for that purpose as many of our "stove" or "greenhouse" flowers, and when arranged with taste the effect is all that can be desired.

Perennials require good cultivation, as they soon exhaust the soil of nourishment; and on that account we make a practice of lifting all plants every third year, and give the border a good manuring, putting in plenty of leaf mould and wood ashes along with the manure.

Although perennials can be planted almost any period in the winter and spring months, I consider November the best time to lift and re-arrange them, provided the weather prove suitable for the operation, as the plants will then make fresh roots and establish themselves before the shortest day. Our soil being rather light and of a sandy nature here, I make a practice of putting the manure next to the subsoil, thereby inducing the roots downwards, so that should the summer be very hot and dry, they are then able to withstand the drought with impunity.

Perennials require as much attention in their culture as any other plants if good results are expected, and when well arranged, according to height, in a long border they are very effective indeed.

Calceolarias give a poor return for the labour bestowed on them, especially in a very dry season, as we have discarded them altogether and found an excellent substitute in Viola Ardwell Gem. This Viola is very sweet scented, the colour very pleasing to the eye, being of a bright lemon, and is greatly admired by all classes. I have not seen any Viola that can surpass it in constitution, and for standing the drought. It also flowers longer than any I know of, throwing the flowers well above the foliage.

Before ending this note on perennials I may here remark that if successful results are anticipated the plants must be lifted regularly as advised above, or they will soon overgrow themselves, and then look very unsightly; instead of throwing up good spikes of flower they will degenerate. On the other hand, if done as recommended, they will give satisfaction to employer and employed alike. Such has been my experience in different localities. I think there is a great future for herbaceous perennials, as they make a grand display when carefully selected, surpassing our tender bedding-out plants, and are also more useful for cutting and decorative purposes. There is an endless variety of perennials, and tastes differ so much, that I defer giving a list of any specially.—W. K. PETTIGREW, *Hewell Grange Gardens.*

ORCHIDS

Cattleya Fabia.

At this season of the year, when every show is almost wholly taken up by Chrysanthemums, it is pleasant to turn to the Orchids in search of change. This is not the time of year when Orchids are seen in their best dress, but the Royal Horticultural Society rarely fails to secure a few choice specimens at its Drill Hall exhibitions. On November 9th there were several charming plants shown, and amongst the most prominent was Cattleya Fabia, staged by Mr. J. Smith, Orchid grower to the Right Hon. Joseph Chamberlain, Highbury, Birmingham. It is a hybrid resulting from a cross between C. labiata and C. aurea. The sepals and petals are rich rose and the lip is velvety crimson, paling slightly towards the margins. A flower is depicted in the woodcut (fig. 74), from which an idea of the handsome form of the flower may easily be had. The Orchid Committee awarded a first-class certificate to C. Fabia.

Dendrobium bigibbum.

When seen in good cultural condition there are few more beautiful or brighter Dendrobiums than this North Australian species. Not only are the individual blossoms very fine and richly tinted, but they are produced in considerable number upon the spikes, the latter occurring both on the apex of the new pseudo-bulbs, and also from the sides of the older ones. It grows from a foot to 18 inches in height, the blossoms being about 2 inches across, of a rich deep magenta in the type, the lip being a deep purple shade in front. The variety superbum is larger and brighter in colour, while album or candidum has the sepals and petals pure white, the lip having a deep purple blotch on either side.

Like most of the Australian kinds, D. bigibbum requires rather different treatment from that of the deciduous and the ordinary evergreen kinds. As often as not the growth commences just at the worst time of the year—that is, in autumn. In summer it is easy enough to keep up a warm and moist temperature, combined with a brisk and buoyant atmosphere, but as the season goes on and the sun gets lower it becomes increasingly difficult to do so. But the plants must be kept gently moving when once they have started; if they can be kept dormant until the spring by all means keep them so, but do not force them to rest by withholding moisture when it is apparent that the plants are becoming active.

I have had good results by placing the plants in a house with Phalænopsis or other East Indian kinds of Orchid, but in many places nowadays a separate compartment is kept for these Australian kinds; anyway, what they need is a nice genial growing temperature, with not sufficient moisture on the one hand to cause a weak spindly growth, or too little, which brings insect pests in galore and checks the growth. It is imperative that every ray of light obtainable reach the plant, and for this reason they should be suspended as near the glass as possible.

Keep up this nursing treatment until the new year is getting advanced, when with the increasing light much less care is necessary. They may then be grouped with the Wardianum, crassinode, and similar kinds, and will thrive admirably together. A strict resting season is not required—in fact, would be harmful; but it is easily seen when growth is at its lowest ebb, and at this time a little reduction should be made in the water supply, and an airy, comparatively dry atmosphere is advisable. While the plants are in flower too much moisture is not to be advised, for the blooms, though of good texture and lasting quality, are easily damaged by damping. They may not be actually wetted from the syringe, but the moisture gathers upon them, more especially at night, and when the sun shines on them in the morning the mischief is done.

The flowers over and growth on the wane, it becomes necessary to give new compost either in the form of top-dressing, or a new pot or basket. Personally I have not much faith in top-dressing this class of Orchid. Their roots are small, and they run near the surface, and it is almost impossible to remove old material or to dibble in the new without disturbing some at least of these. Then many beginners in Orchid culture, instead of mixing crocks and charcoal with the peat and moss for top-dressing, use the latter by itself, and gradually thicken the compost until it holds far too much moisture.

In such cases it would be safer to leave the plants alone for another year, and then repot, turning the plants carefully out of the old material and removing all old decayed compost and dead roots. This species may be planted in pots, in pans for suspending, or in wood baskets according to the fancy or convenience of the individual grower, only be careful not to place too much compost about the roots, and owing to their dislike of this, I prefer the small pans for suspending. These may be filled two-thirds of their depth with clean crocks, about an inch of compost being ample for any except very large specimens. Cover the crocks with a layer of rough sphagnum, and place the plants so that the leading pseudo-bulbs just rest on the top of the compost, the latter being neatly trimmed off to a cone-shaped mound.

Fig. 74.—Cattleya Fabia.

For compost use equal parts of the best fibrous peat and moss, the latter being used in a fresh and living state. Add small crocks and charcoal in plenty, either beforehand or when placing the compost. This must be firmly placed, as the roots, though disliking anything sour or close, are partial to a firm and fairly solid medium. There are not many insects that trouble well-grown Dendrobiums, but should red spider or thrips put in an appearance at any stage of growth, they should be at once removed by sponging or the vapourising fumigator. D. bigibbum, as noted above, is a North Australian species, and although it has been in cultivation since 1824, it appears to have been lost to sight for a long time, and was subsequently rediscovered by Dr. Thomson in 1855.—H. R. R.

ROSES

Mildness of November.

At the Bristol Chrysanthemum Show, on the 17th and 18th, three silver cups (as special prizes) were offered by Mr. W. Kemp, Bristol, for the best stand of twelve Tea-scented Roses, not less than six varieties. For these prizes seven stands were staged, the first prize awarded to that veteran amateur, Mr. Thos. Hobbs, with a clean, fresh, and beautiful stand, consisting of Niphetos (2), Maman Cochet, Madame Willermoz (2), The Bride, Caroline Testout, Madame Lambard, Catherine Mermet, Marie Van Houtte, and Corinna, cut from his Rose ground (except Niphetos), one of the highest points in Gloucestershire.—Exhibitor.

Rose Crimson Rambler.

Mr. Chapman's interesting letter on page 474 will be very welcome to those of your readers who are curious as to the introduction of this popular Rose to Europe. As a connecting link between the early days spoken of by Mr. Chapman, when it bore the name of "The Engineer," and the present time, we may say that it was exhibited at the Edinburgh Rose Show in 1887 under the name of Paniculata. Through the kindness of friends in Scotland we obtained buds of it, and we had it growing in our nursery here under the name of Paniculata for some time before it was exhibited and sold under the name of Crimson Rambler.—Wm. Paul and Son, *Waltham Cross.*

The Propagation of Roses from Seeds.

In the issue of November 18th Mr. W. H. Divers asks for information on the above subject. At Kew many species of Roses are raised from seeds yearly, and on the whole germinate fairly well. At various times different methods have been tried, of which the following is considered the best.

When home grown seeds are sown, they are sown thinly as soon as gathered. Well-drained pots or pans (according to the quantity required) are filled with a mixture of two parts loam, one part leaf soil, and one part sand. They are covered to the depth of a quarter of an inch with fine soil, and the receptacles are plunged outside in a bed of ashes for the winter. About the beginning of March they are taken into a slightly heated house, stood on a warm bed of fibre, and kept shaded night and day. During the spring some germinate.

Seeds which are received from abroad during the autumn are treated in the same manner, but seeds which arrive in spring are placed straight in the house. Any seeds which have not germinated by the beginning of September are picked out of the soil and resown. They are afterwards stood outside and left until the following spring, then almost all germinate. They are put outside so that the winter weather shall act on the hard shells of the seeds. They are taken inside in March for various reasons. The extra warmth makes them germinate quicker; they can be kept during spring and summer in a more equal state of moisture, and the tiny plants when they first appear are not so likely to be eaten off by slugs as when outside.

Occasionally seeds germinate in a month from the time of sowing; more often, though, they are from six to twelve months, and often two years, so that it is not wise to throw away any as worthless under two years from the time of sowing.—W. D., *Kew.*

ROYAL HORTICULTURAL SOCIETY.

DRILL HALL.—November 23rd.

The exhibition in the Drill Hall on Tuesday was a very good one, the display of Chrysanthemums being particularly interesting. Orchids and Onions were well shown. Unfortunately there was a heavy fog the whole of the day, which rendered it impossible for the colours to be properly seen.

Fruit Committee.—Present: P. Crowley, Esq. (in the chair); with Messrs. J. Cheal, A. F. Barron, A. H. Pearson, P. C. M. Veitch, A. Dean, W. Bates, G. T. Miles, C. Herrin, G. Reynolds, F. Q. Lane, J. Smith, G. Norman, J. Willard, and R. Fife.

Messrs. T. Rivers & Son, Sawbridgeworth, exhibited six baskets of Apples, comprising splendid examples of Ribston Pippin, Bijou, Buckingham, King of Tompkin's County, Peasgood's Nonesuch, and Cox's Orange Pippin, with Grapes Gradiska and Directeur Tisserand (silver Banksian medal). Mr. Bayford, gardener to C. Lee Campbell, Esq., Glewston Court, Ross, exhibited thirty-two dishes of Apples of distinct varieties. The specimens were clean, and so far as could be seen, splendidly coloured. Perhaps the most prominent were Lane's Prince Albert, Tyler's Kernel, Dumelow's Seedling, Maltster, Cox's Pomona, Queen Caroline, Golden Noble, King of the Pippins, Bess Pool, Peasgood's Nonesuch, Bramley's Seedling, Alfriston, Bismarck, Warner's King, and Emperor Alexander (silver Banksian medal).

Mr. E. Beckett, gardener to Lord Aldenham, Aldenham House, Elstree, sent seven heaps of magnificent Onions. The varieties were Barnet Hero, Sutton's A1, Cocoa Nut, Ailsa Craig, Anglo-Spanish, Green's Prizetaker, and Cranston's Excelsior (silver Banksian medal).

Prizes for Flavour.—Mr. G. Woodward secured the premier prize in the Apple class with Cockle's Pippin in fine condition, and was followed by Mr. Bayford with Cox's Orange Pippin. In the Pear class the first prize went to Mr. J. Crook with Winter Nelis, and the third to Mr. G. Woodward for Nouvelle Fulvie.

Floral Committee.—Present: W. Marshall, Esq. (in the chair); with Messrs. C. T. Druery, H. B. May, R. Dean, G. Stevens, J. Hudson, T. Peed, R. B. Lowe, H. J. Cutbush, J. D. Pawle, J. Walker, C. E. Shea, C. Blick, H. Turner, R. M. Hogg, and C. Jeffries.

Mr. F. Cubberley, gardener to J. W. Temple, Esq., Leyswood, Groombridge, staged a grand group of Begonia Gloire de Lorraine. The plants were in 48 and 32 pots, and were simply a mass of flowers. The value of this plant for winter flowering was never better exemplified than by this exhibit (silver-gilt Banksian medal). Messrs. Cripps & Son, Tunbridge Wells, arranged a group of Poinsettia pulcherrima, margined with dwarf Palms. The plants were dwarf, and carrying finely coloured bracts of good size (silver Banksian medal). Messrs. J. Veitch & Sons, Ltd., Chelsea, sent a few plants of the beautiful hybrid Begonia Mrs. Heal, of which the colour could not be properly seen in the bad light.

Messrs. H. Low & Co., Upper Clapton, sent a number of plants of Carnation Winter Scarlet, a free-flowering fragrant variety. From the same source also came small plants of Begonia Gloire de Lorraine. Messrs. W. Cutbush & Son, Highgate, staged a collection of Pernettya mucronata. The plants were fruiting splendidly, but the various colours could not possibly be properly seen (silver Banksian medal). Mr. W. J. Godfrey, Exmouth, sent some charming Carnations, together with Chrysanthemums F. F. Domoto, Mrs. Maling Grant, Lady Northcote, and Mrs. Peabody.

Mr. W. L. Calcutt, Stoke Newington, exhibited a table of vases of Chrysanthemums, with other flowers and foliage (silver Flora medal). Mr. A. H. Rickwood, gardener to the Dowager Lady Freake, Fulwell Park, Twickenham, staged a number of Chrysanthemums in variety, mostly grown for decorative purposes, as cut blooms (silver Banksian medal). Mr. R. Owen, Maidenhead, arranged five boxes of Chrysanthemum blooms, amongst which several of the leading varieties were noticed, as well as a new incurved named Mrs. W. C. Egan (bronze Banksian medal). Messrs. Vilmorin, Andrieux, & Co., Paris, sent a few plants of Primula obconica.

Mr. W. Wells, Earlswood Nurseries, Redhill, was represented by a large collection of Chrysanthemums, comprising single, Pompon, and decorative varieties, as well as many excellent large Japanese blooms. These were of very fine form, with only here and there any suspicion of coarseness. Prominent amongst the many were Julia Scaramanga, G. J. Warren, Mdlle Laurence Zédé, Georgina Pitcher, Madame Carnot, Ma Perfection, C. W. Richardson, Gertrude Salter, Mrs. F. A. Bevan, Mons. Panckoucke, Snowdon, Madame Ferlat, Sunstone, Australie, Western King, Julian Hilpert, Graphic, and Madame X. Rey Jouvin (silver-gilt Banksian medal).

Undoubtedly the most conspicuous exhibit in the show was the table of Chrysanthemums arranged by Mr. H. J. Jones, Ryecroft Nursery, Lewisham. Besides the cut blooms shown in boxes in the orthodox manner, there were singles and small flowered varieties shown on long stems, and some large vases containing about a dozen blooms each. These latter were very imposing, and produced an excellent effect. Interspersed amongst the flowers were Palms and Ferns. Very conspicuous were Edith Tabor, Miss E. Addison, Western King, Mons. Desblanc, Duchess of Fife, Graphic, Yellow Madame Carnot, Mrs. R. Jones, Australie, A. H. Wood, Master H. Tucker, W. Wright, Mdlle. Thérèse Rey, Ma Perfection, Ernest Cannell, The Egyptian, Madame Ferlat, Bonnie Dundee, Kahma, Nyanza, and Hairy Wonder (silver-gilt Flora medal).

Orchid Committee.—Present: H. J. Veitch, Esq. (in the chair); with Messrs. J. O'Brien, De B. Crawshay, H. Ballantine, F. Sanders, H. M. Pollett, A. H. Smee, W. H. Young, H. J. Chapman, E. Hill, and S. Courtauld.

Messrs. H. Low & Co. were represented in the Orchid section by a small collection, comprising Cattleya labiata in variety, C. Bowringeana lilacina, Vanda cœrulea, Oncidium Forbesi, with Cypripediums Leeanum superbum, L. giganteum, L. compactum, Sallieri Hyeanum, enfieldense and œnanthum superbum (silver Flora medal). Messrs. Sander & Co., St. Albans, staged a number of Orchids of good quality, and in fair variety. The fog unfortunately marred the effect very considerably. We noticed Cypripediums Leeanum villosum, L. superbum, L. excellens, L. giganteum, and L. delicatum, Phaius Ashworthianus, Calanthes Bella and Florence, Dendrobiums Johnsoniæ, and Habernaria carnea, besides several others (silver Banksian medal).

The little group of Orchids effectively arranged by Messrs. J. Veitch and Sons, Ltd., was exceedingly interesting. The bulk of the group was taken up by Cypripediums, of which there were Aeson, Leonidas, Actæus, Sallieri, Leeanum, Prospero, Euryades, Roberti, Io grande, Pheres, Œone, Chamberlainianum, Tityus, Niobe, and œnanthum superbum. In addition to these, we observed Lælio-Cattleya Pallas, L.-C. Decia, L.-C. Tiresias, L.-C. Semiramis, L.-C. Statteriana, Cattleya Mantini, Zygopetalum Mackayi, and Oncidium Forbesi (silver Flora medal). Mr. J. Smith, Orchid grower to the Right Hon. Joseph Chamberlain, Highbury, Birmingham, staged Cattleya Miss Williams and Lælio-Cattleyas Ophelia, Clive, Gottoiana, corbeillense, and albanense (silver Banksian medal). Mr. H. Ballantine, gardener to Baron Schröder, The Dell, Egham, sent Odontoglossum Dayanum.

Certificates and Awards of Merit.

Apple Lady Falmouth (G. Chambers).—A small dessert Apple resembling Court Pendu Plat. The fruit is somewhat flattened, and has an open eye set in a broad, shapely basin. The stalk is short and deeply

inserted in a russety cavity. The crimson colour spreads over almost the whole surface (award of merit).

Begonia Julius (J. Veitch & Sons).—Another hybrid resulting from a cross between B. socotrana and a tuberous-rooted variety. The profusely borne flowers are double and of a salmon pink colour. The plant is about 12 inches high (award of merit).

Cypripedium Beckmani (L. Linden).—The large dorsal sepal is bright green with large brown blotches. The petals are very broad and of a shining chocolate hue, the pouch being a lighter shade of the same colour (award of merit).

Cattleya Empress Frederic var. Leonata (J. Veitch & Sons).—This is a grand flower. The broad sepals and narrow petals are rich rose. The lip has a velvety crimson central blotch and rose hued margins. The side lobes are yellow veined with crimson (award of merit).

Cattleya labiata White Queen (J. Barker).—Save for a suspicion of yellow on the lip this is a pure white form (award of merit).

Chrysanthemum Georgina Pitcher (W. Wells). — A grandly shaped incurved Japanese, with very broad florets. The colour is pale yellow (award of merit).

Chrysanthemum Julia Scaramanga (W. Wells).—Raised by Mr. Silsbury. This is a long floretted Japanese that builds up a fine flower. The colour is deep terra cotta (award of merit).

Chrysanthemum Mary Molyneux (N. Molyneux).—An immense incurved Japanese with twisted lower florets. The colour is pale pink with a silvery reverse (award of merit).

Chrysanthemum Mrs. H. Folkes (H. Folkes).—Another addition to the many white Chrysanthemums. The flower as shown was somewhat flat (award of merit).

Chrysanthemum Mrs. F. A. Bevan (W. Wells).—A fine reflexed Japanese of a clear pink shade (award of merit).

Grape Directeur Tisserand (T. Rivers & Son).—A black late Grape of much promise. The skin is thick, and the flesh is very sweet and juicy (award of merit).

Lælia Olivia (J. Veitch & Sons).—A lovely hybrid, resulting from a cross between L. xanthina and L. crispa. The sepals and petals are pure yellow, and the charming lip is yellow with purplish crimson veins, and a blotch of a similar shade in the centre. The margin pales off slightly (award of merit).

Odontoglossom Dayanum (H. Ballantine).—The narrow sepals, petals, and lip of this Orchid have a ground colour of green. The numerous spots are brown, of which colour there is a large blotch on the lip (award of merit).

GRAPES AT BYFLEET, SURREY.

I COULD but remember with some amused feeling the little burst of anger made evident so recently over a R.H.S. medal award to a few bunches of Grapes, when visiting Mr. G. Bury's vineries at Byfleet, and seeing the splendid crop he has, and the excellent samples he has also; and this fine result obtained from a sheer bed of sand, and from Vines that have been—not three years, but ten years planting, having during that time borne huge crops. The houses are two, 336 feet long, spans of 25 feet wide, and they are planted in equal portions of Black Hamburgh and Muscat of Alexandria in one, and Black Alicante and Gros Colman in the other. It was when looking at these latter, noting the handsome bunches and their grand berries, so well coloured and finished, that I was reminded specially of the little outbreak referred to.

It is just possible that at the January meeting, when Grapes are getting scarcer, Mr. Bury may send up some samples of his Grapes for the Committee to judge of the fruit products of a deep bed of sand. Inside the houses this much resembles walking in a sandpit, it is so deep and loose. Probably there is not a grower of Grapes in the kingdom but, asked for an opinion as to the merits of the soil here for Grape culture, would have condemned it. If so, certainly a look through these long vineries now would alter that opinion, for the crop has been again this season so great a one, that it is really marvellous how the Vines can, year after year, go on producing them.

Mr. Bury, like the general run of market growers, is a very modest, unassuming man, and makes no fuss over his crop. The loss of a thousand medals or prizes would not disturb his equanimity. No one knows better than he that he has had a first-rate Grape crop, and if prices now do not rule very high, at least he, in common with other growers, strives to make up that deficiency by heavy crops. Generally these market men go on year after year producing fully double the weight that private gardeners get, and they have fine samples and quality also.

The Vines in both houses are planted on each side at about 4 feet apart, and on each of the four sides there are eighty-four, or a total of 336. The rods reach to an average length of 11 feet, and as there are many supernumerary or additional rods to Vines, the actual number is about 400, which multiplied by eleven, gives a total length of 4400 feet run of rod, and taking a further average of twelve bunches to a rod, a very low estimate, that would give for the season some 4800, and doubtless double that quantity in pounds. Of course these vineries are only small ones amidst the vast area of glass devoted to Grape culture in this country, but they serve to show how immense the produce must annually be over the entire area.

Gardeners may often do well to visit one of these market places and note the process of culture. Mr. Bury feeds chiefly with superphosphate, sulphate of potash, and gypsum, occasionally flooding the inside border with water. Probably we should hear of fewer Grape failures were more sand employed in forming Vine borders.—A. D.

Notes & Gleanings

EVENTS OF THE WEEK.—We may now consider ourselves at the end of the Chrysanthemum season, for there are only a few late shows to be held. Horticulturists will doubtless welcome the little rest that follows the season of the autumn queen. So far as we are aware there are no events of particular interest fixed for the forthcoming week within the metropolitan area.

—— WEATHER IN LONDON.—Since our last impression went to the machines we have had some beautiful weather, the sun shining brilliantly on several days. Almost every morning and evening has been more or less foggy, Sunday evening and Monday morning being very dense and unpleasant. It was almost dark throughout Tuesday, and the same conditions prevailed on Wednesday.

—— VICTORIA MEDALLISTS OF HONOUR.—With the issue of the *Gardeners' Magazine*, dated November 20th, was presented a large plate, comprising portraits of the sixty medallists. We congratulate our contemporary on the admirable manner in which it has carried out what must have been a tedious and extremely difficult operation.

—— THE POSTAL AUTHORITIES SCORE.—In the way of curious addresses this probably deserves a place :—

Dobies Seedsman and
Florist
Scotland
i know no other
Address kindly
find them.

The communication came from Nuneaton, and was successfully delivered in Rothesay without delay.

—— ORIGIN OF CAMPANULA ISOPHYLLA ALBA.—Mr. L. Castle, in his notes on the Cambridge Botanic Garden, in your issue of November 4th, refers to this plant in connection with my name, and since practically nothing about it is known it may be useful if I place on record the origin of so very popular a plant. In the year 1870 I took charge of the herbaceous department at Kew, and soon after raised this as a chance seedling from the type. The type itself was then new, having been introduced to Kew by Mr. J. T. Moggridge, and the white variation was obviously at once choice and good for distribution. For this purpose, therefore, I got up a stock, and by about 1872 or 1873 it was in the hands of the leading nurserymen who were interested in herbaceous plants. Personally there is a good deal of interest in having been instrumental in preserving so useful a variation, and there is also a great deal of interest in the fact that so popular a plant originated at Kew.—R. IRWIN LYNCH.

—— NATIONAL AMATEUR GARDENERS' ASSOCIATION (LIVERPOOL BRANCH).—On Thursday evening a large attendance of members met at the monthly meeting held in the Common Hall, Hackins Hey, Liverpool, the President (Isaac C. Glover, Esq.) in the chair. The exhibits consisted of Chrysanthemums, the quality of which was decidedly improved in every way. For twelve cut blooms Japanese Messrs. Cangley and Geo. Chappell, jun., were so close as to warrant the first and second prizes being divided. The blooms were fresh and well coloured. Mr. Baddeley was awarded third prize. Mr. Ardran was given first prize for six very pretty Japs. Mr. A. Cooper took second for six incurved, Mr. Hoskyn full points for a charming basket, and Mr. Robins for a hand bouquet in yellow-and-white. Other flowers were put up for points, the exhibits altogether being very much admired, and the interest taken by all present being sufficient guarantee of much good work in the near future. The paper of the evening was by Mr. Cliffe, head gardener to H. Lawson, Esq., of Blundellsands. Mr. Cliffe is well qualified to speak on the culture of Chrysanthemums, having at the late show at Blundellsands carried off both the silver cups for his exhibit of this popular flower. His remarks were listened to with great attention, and a large number of questions as to pinching and bud-taking were put to the lecturer. The paper was generally pronounced to be one of the most practical and useful of those read before the branch. A very cordial vote of thanks terminated the proceedings.

—— Indian Appointment.—We learn from the "Aberdeen Journal" that Mr. James Simpson, lately of the Royal Horticultural Gardens, Chiswick, London, and formerly residing at Cults, Aberdeen, has received from Mr. Thomas M'Meekin, Falkland Park, South Norwood Hill, London, an appointment on his Tea estates in Assam, India. Mr. Simpson entered the service of Messrs. James Cocker and Sons, nurserymen, Aberdeen, as an apprentice, and during his apprenticeship he (in 1893) received the Royal Horticultural Society's certificate for examination in horticulture. Thereafter, in April, 1894, he went to the Society's gardens at Chiswick, going through the various departments, where he had ample opportunity for study, of which he took full advantage. He was for over two years Hon. Secretary and Treasurer of the Chiswick Gardeners' Mutual Improvement Association, and held the South Kensington science and art certificates in mathematics, drawing, and botany. Mr. Simpson left for Assam by the British India Steam Navigation Company's ss. "Manora" on Friday last.

—— Mr. W. W. Astor's Round Table.—The section of a Californian Redwood tree, with which Mr. W. W. Astor wins his wager, has been safely brought to Cliveden. The wager was the result of some statements made by Mr. Astor at a dinner party, concerning the size of the Californian Redwoods, the owner of Cliveden staking a considerable sum on his ability to produce a cross-section of one of the trees capable of accommodating forty guests when used as a dinner table. The section shipped from San Francisco, is 2 feet in thickness, with an average diameter of 15 feet 6 inches, and a maximum diameter of 16 feet 6 inches. Considerable difficulty was experienced in bringing the slab of timber by road from London to Cliveden, sixteen horses being employed to draw the trolley on which it was placed. At Cliveden it was taken down the grass drive, and owing to the splintering of the planks beneath the wheels the latter frequently sunk deep into the turf.

—— Prunus Pseudo-Cerasus.—The "Garden and Forest" says: "Of the exotic trees recently introduced into American gardens one of the most promising is the Japanese Prunus Pseudo-Cerasus, which has for several years proved hardy in the Arnold Arboretum, where it is growing rapidly and has not yet been attacked by insects or fungal diseases. Forms of this tree or of some allied species with double flowers are now rather common garden plants in the United States and Europe, but these are less hardy and of much slower growth than the wild type, which appears to be rare in American collections. It is the largest tree of the Rose family in Japan, and, next to the Apricot, more cultivated for its flowers by the Japanese than any other tree. In the forests of Yezo, where it is very common and sometimes 80 feet high, with a trunk 3 feet in diameter, it resembles in the appearance of the bark and in habit the wild type of Prunus Cerasus, the Cherry tree of our gardens. In autumn it is particularly beautiful, as the leaves turn deep scarlet and light up the forest before the Maples assume their brightest colours.

—— Royal Meteorological Society.—The opening meeting of the session was held on Wednesday evening at the Institute of Civil Engineers, Mr. E. Mawley, F.R.H.S., President, in the chair. Mr. R. H. Curtis gave the results of a comparison between the sunshine records obtained simultaneously from a Campbell-Stokes burning recorder and from a Jordan photographic recorder. These simultaneous observations were carried out by Mr. E. T. Dowson at Geldeston, near Beccles, and extended over a period of twelve months. The records were sent to Mr. Curtis for tabulation, who gave the results of his examination in this paper. After describing the methods adopted for the measurement of the records, Mr. Curtis drew the following conclusions from the figures:—(1) In the case of the Campbell-Stokes instrument, the records are capable of being measured with a very fair degree of accuracy. (2) The records of the Jordan instrument afford room for much greater difference of opinion as to what ought to be tabulated, and consequently measurements of the Jordan curves are open to considerably more doubt than are measurements of the Campbell-Stokes curves. (3) When the whole of the photographic trace which can be distinctly seen, but including portions of it which are decidedly faint, has been carefully measured, the amount will approximate sufficiently to that of the Campbell-Stokes instrument to allow of records obtained from both forms of instruments being compared *inter se*. From an examination of the records at other stations, it appears that on some occasions the instruments have begun to record within thirteen minutes after sunrise, and has continued up to ten minutes before sunset. Mr. Curtis concluded his paper by calling attention to various defects in the adjustment and working of the instruments, and pointed out how these might be overcome. After the paper had been read, an interesting discussion ensued as to the merits of the respective sunshine recorders.

—— The Naming of Plants—When naming a plant in honour of some great man liberties are frequently taken in the orthography, and very often the person chosen is more honoured in the name than by anything special that he did to deserve it. The celebrated French botanist, Baillon, had the naming of a plant, from the island of Juan Fernandez, that had never before been named or described. From that island he had naturally the story of Robinson Crusoe in mind, and he thought, to honour Crusoe's man Friday, he would give this plant his name; but he did not call it Fridaya, but translated it into the French name for Friday—that is to say, the sixth day of the week, *Vendredi*, and the plant became described in the books as *Vendredia*. No one would ever suspect from this name that it was intended to honour Robinson Crusoe's sole companion on the desolate island.—("Meehan's Monthly.")

—— Lachenalias as Basket Plants.—Lachenalias, when grown as basket plants for hanging in the greenhouse or conservatory, thrive wonderfully well, and are worthy of more extended cultivation, as they are seen to much better advantage than when grown in pots. The baskets should be prepared at any time from July to September, well lining them with live moss and then filling with a good compost, which should consist of equal parts of loam, leaf soil, and well-decomposed manure, with sand added. The bulbs must be dibbled in the moss at equal distances apart, this operation being performed annually. Abundance of water is necessary after the plants commence to grow. This can best be supplied by immersing the baskets in a bucket or other vessel, care being taken to gradually withhold the supply as the foliage shows signs of decay, after which they should be stored in a cool dry place until time to rebasket them again. At no time should the Lachenalias be subjected to a high temperature, for they will not bear it. I have found L. pendula the most useful and attractive variety to grow for this purpose.—H. T. M.

A RARE NOVEMBER.

Walking through a garden on the 14th of November, with the thermometer standing at 55° in the shade, I was struck with the beauty of the flowers in the beds and borders. True, it was in a favoured district, not far from the south coast, but even there in November one does not expect to find Henry Jacoby Pelagoniums in full bloom. Yet so it was, and plants that had been denuded of their young flowering parts in September in order to make cuttings, had broken out into fresh growth, followed by a wealth of blossom, such as is often looked for in vain during the whole of a wet cold summer. There were also tall specimens of Fuchsias; white and yellow Marguerites were blooming as freely as in summer, while the air was fragrant with the breath of Mignonette and Violets.

And Roses, too; has there ever been such a time for late blooms? Enthusiasts have this year enjoyed a double season. Maréchal Niels and Gloire de Dijons are carrying a profusion of superb flowers—not half-opened, scentless specimens, such as we are apt to picture the last blooms of summer, but fully expanded perfect flowers, that would have borne fair comparison with the ideal Rose of June. Nor were these all, for on dwarf plants were noticed Catherine Mermet, Hon. Edith Gifford, and others, as well as rich red blooms of Hybrid Perpetuals. All these, we must remember, in the middle of November, when under ordinary circumstances we have long since bidden adieu to the queen of flowers.

Rarely have we seen such a wealth of Dahlias and Chrysanthemums as this season. They are autumn flowers, and as such we expect them; but how often there comes that early biting frost, that turns the brilliancy of the former into a blackened mass, and cuts too short the existence of the latter by nipping the buds before they have had an opportunity of opening. Our Indian summer has this year suited them exactly.

Gardeners generally, and particularly those who have much autumn decorative work, will appreciate the late outdoor flowers, as it is needless to say what a difference it makes when severe early frost cuts off the outdoor blooms early, and nothing remains but those under glass. Gardeners feel the loss in such cases severely, as there is not much to fill up the breach before the forced flowers come along. This season, however, there has been no such trouble, as the garden even now is supplying ample outdoor flowers to meet the requirements of most, and here again we feel another benefit derived from the Indian summer of 1897.

Is there no voice also from the kitchen garden telling of double seasons and crops extraordinary? Only the other day I saw a superb dish of Peas gathered and in preparation for the dinner table. The variety was Sutton's Late Queen; and on another row of the old and justly popular Ne Plus Ultra were hanging excellent well-filled pods ready for gathering. Scarlet Runners and French Beans have recently been gathered from late sowings.

Just another remark, and this time—ripened wood. Surely all fruit wood must be thoroughly matured this season, and many are looking forward to a good fruit year in 1898. If the wood were all we might hope with confidence, as it is brown and hard with buds and spurs, plump and showing well; but there is the blossoming time to come, when the flowers have to run the gauntlet of frost and cold wind. However, that is for the future, and my notes have only to do with the present. Never have we had a finer autumn, and the prospects in gardens, orchards, and farms are more than usually cheering at this late period of the year.—G. H. H.

CHRYSANTHEMUMS

Chrysanthemum George Foster.

The season of 1897 has seen the introduction of many splendid new varieties, more especially in the Japanese section. Almost the whole of these have had brief descriptive notes in these pages from time to time, and amongst them was a variety named George Foster. As being of more than ordinary merit we now give an illustration (fig. 75, page 507) of this, reproduced from a photograph kindly sent by Mr. W. J. Godfrey, who is the raiser of the variety. As may be seen, it is a grandly built incurved Japanese with broad very substantial florets of a rich yellow colour. Taking all things into consideration it is more than probable that George Foster will become a valuable Japanese for exhibition purposes. We understand the plant is an excellent grower, and the flowers come good from any bud.

N.C.S. Floral Committee.

A meeting of the Floral Committee of this Society was held on Monday last at the Royal Aquarium, Mr. T. Bevan presiding. First-class certificates were awarded as under :—

J. Chamberlain.—A large spreading flower with long broad florets, curling and incurving at the tips; colour bright crimson with old gold reverse. Shown by Mr. H. Weeks.

Madame Ferlat.—A very large incurved; massive and globular in build, with medium sized florets; white. From Mr. W. Wells.

Julia Scaramanga.—A large, closely built Japanese with long narrow curling florets, twisting and intermingling; colour pale rosy bronze. Also from Mr. Wells.

From M. Anatole Cordonnier of Bailleul, France, came some fairly well-grown blooms, one of which, called Don de la Madone, a white Japanese, was commended. The Committee wished to see again M. A. E. Feaver, a bronzy yellow-and-crimson incurved. A vote of thanks was awarded to Mr. C. Gibson for six blooms of white incurved Japanese called Mustapha. Other good novelties of promise were Madame J. Chauré, M. J. J. Glessner, Lucien Rôiny, and Surpasse Amiral.

N.C.S. General Committee.

The General Committee of this Society held a meeting at Anderton's Hotel, Fleet Street, on Monday evening last, when the chair was occupied by Mr. T. W. Sanders. Minutes and correspondence took up some little time, and then a discussion upon the light in the west gallery of the Aquarium on the occasion of the last show, which was generally considered to be bad. A model of the Society's new small gold medal was submitted for approval. It was proposed and carried that the Classification Committee be again called together towards the end of the present or beginning of next year to take into consideration several new varieties of doubtful types. Mr. Higgs was elected on this Committee in the place of Mr. Owen, deceased.

The dates of the General Committee and Floral Committee meetings for next season were then decided upon, and are as follows :—General Committee—August 29th, September 26th, October 24th, November 28th, December 19th, 1898; and January 16th, 1899. Floral Committee—September 6th and 26th, October 11th, 24th, 31st, November 14th, 21st, 28th, December 6th and 12th. There was a good deal of discussion upon other subjects, mostly connected with the shows, and of a formal nature.

The National Chrysanthemum Society.

Seeing that the exhibitions of this great Society have for some time ranked amongst the finest and most representative in the kingdom, and seeing, further, what wonderful success have attended upon the great exhibitions of Chrysanthemums held at Birmingham, Hull, Edinburgh, Belfast, and in other large provincial towns—shows held entirely on the responsibility of the local societies, and in buildings for the time their own, and apart from all objectionable surroundings, I venture to suggest that what can be done with such splendid results elsewhere, may be carried out with equal success in London. Why should visitors to the N.C.S. show, who want to see and enjoy the Chrysanthemum, be debarred that capacity for enjoyment in London which other towns furnish?

There is no exhibition, and such a grand exhibition too, that suffers so in being cut up and distributed all over the place, the grand exhibits being stuck here and there to suit the requirements of the Aquarium manager, as does the one of the National Chrysanthemum Society. Out of the many thousands of persons who crowd the place on the show days two-thirds at least are attracted there to see the show. Is it not time that the executive resolved to break away from the thraldom which makes the Society the slave of the Aquarium authorities? In no other place in the kingdom is this state of things existing. I am sure there are thousands of the patrons of Chrysanthemum kept away because they do not like the place, and thousands who go there would prefer to see the show anywhere else. I hope the executive will face this matter boldly.—A. D.

Robert Owen.

This fine Chrysanthemum is not so often seen at shows as it ought to be. Perhaps some growers think it too near the incurved class for Japanese. I have here six plants in 8-inch pots—each carrying three blooms—one of which I send as a specimen. Some experience a difficulty in growing it, but I am glad to say it comes good here every year without any special treatment. The bloom sent is 4½ inches deep, and 17 inches in circumference.—A. J. Long, *Wyfold Court, Oxon.*

[The specimen was a good one, and showed that Mr. Long's treatment was appreciated.]

Staging Chrysanthemums at Exhibitions.

As each season goes by there is always some new feature of beauty to note in the Chrysanthemum world. It may be that a colour Nature has so long denied comes upon us in full glory in the shape of a "sport" or seedling; or perhaps some bold and artistic grower hits upon a novel idea for arranging his plants to form an effective group. Such departures both gardeners and the public in general hail as a welcome change.

In regard to cut blooms in the big classes, we still adhere to the style which has been so long in vogue, although at many shows classes are provided for blooms staged with long stems and arranged among plants or other foliage, as well as for blooms shown in large vases. These are welcome departures from the beaten track which make a distinct feature and invariably command much admiration. At present, however, there is not the slightest sign that the long practised style of staging will be superseded, because of the great difficulty experienced in packing securely for travelling blooms on long stems. As the size of blooms continues to increase, this difficulty is not likely to be diminished in the future. Should any society, therefore, be bold enough to offer all its prizes in the cut bloom section for flowers on long stems it would have to depend on local growers for exhibits. This would not be likely to lead to any great advance in culture, as there is nothing like open competition to raise the standard of excellence at shows in general.

Seeing that the old and well tried method of staging is likely to continue, every effort ought to be made by exhibitors to render that system as effective as possible. One would naturally suppose that in their own interests they would do this; but strange as it may appear, there are many exhibitors whose stands of blooms show a great lack of taste and judgment in their arrangement. It is not the men new to the work that are the greatest offenders in this respect, as I am acquainted with several old exhibitors who grow grand flowers, and often win at important shows, yet they do not seem to have acquired the "knack" (perhaps they have not the inclination) of displaying their blooms to the best advantage. One may find them staging grand deep Japanese blooms in such a way that the tops of the flowers in each row are almost level with each other, or, at the most, the slope from back to front is not more pronounced than the slope of the stands on which they are shown.

On the other hand, some seem to think that the back row cannot well be placed too high, and aim at forming as sharp an angle as possible. I have an idea that matters might be considerably improved if societies stated in their schedules the height at which the back row of blooms should be arranged, measuring, of course, from the tops of the flowers. In order to prevent disqualification through any slight mistakes exhibitors might make in their measurements, margin of an inch could be allowed. Under an arrangement of the above description uniformity in the appearance of the various exhibits would be obtained at shows where the opposite state of affairs has long prevailed. Judges, too, would find their work slightly simplified, as when flowers are competing stands are fixed at greatly different elevations it is difficult for the eye to catch their relative depth.

The arrangement of colours is also a matter which might with advantage have more attention paid to it than it often receives. The light coloured blooms ought to be so placed as to give the whole stand a well balanced appearance. It is not often that we find such glaring errors made as that of placing two blooms side by side whose colours absolutely clash; but a trained eye in colour blending knows that something more than the mere avoidance of glaring errors is necessary to secure the most finished effect.

When we turn to the classes provided for incurved blooms, the absence of very rough examples is perhaps more noticeable than formerly, but for this the dressers can scarcely be given credit. It is rather because many of the new varieties grow into good form with little artificial aid. To dress blooms thoroughly well a long time is required, and I fancy the percentage of those who take that necessary amount of trouble is less than it was ten or fifteen years ago. There is not generally so much difference between the heights at which various exhibitors set up their incurved blooms as may be observed in the Japanese classes, although I have seen some stands set up far too high to produce the best effect. On the other hand, it is no unusual occurrence to note stands of good blooms which are not set up at all. This season, at an important show, I saw a flagrant error of this description for which the exhibitor apparently paid dearly, as I could—after examining the blooms closely—see no other reason why he failed to obtain a much-coveted prize. In this instance some of the back row blooms were even lower than those in the second one, and the whole exhibit failed entirely in showing the high quality of the blooms until a close inspection had been made. Such unfortunate affairs are, no doubt, exceedingly annoying to the victims, but the judges must, in the case of close competition, give due weight to good staging, and after a grower has worked hard for a whole year to grow fine blooms, he must be singularly deficient in shrewdness if he does not find out and practise the way to stage them to the best advantage.

Sometimes this loose staging is perhaps caused by the narrow margin of time the exhibitor allows himself for staging, but even this can be remedied, as it is far better to reach the scene of conflict the night previous to the show, and have an early start next morning, than to leave home by the first morning train on the show day, and have a "rush" to be ready for the judges.—OLD EXHIBITOR.

CHRYSANTHEMUMS FOR GENERAL PURPOSES.

THE adaptation of the Chrysanthemum for all classes of growers renders their cultivation extremely popular and interesting. Varieties are now so numerous that it is not difficult to find what are best adapted to cultivate under the conditions and convenience obtaining. The Japanese section supplies the bulk of the best varieties. There may be had medium sized and large blooms in plenty of every shade of colour common to Chrysanthemums in general. Many good varieties are found in the reflexed section, which only, as a rule, produce medium sized flowers. Among the Japanese there are varieties with gracefully drooping flowers, others with florets short and stiff, and some with incurving petals, which do so in such a regular manner that we are almost inclined to class them at first sight as abnormally large examples of the true incurved section.

However, this illusion is soon dispelled; for on examination it may be noticed that the florets are longer, broader, and less closely arranged. The size of the flower, too, attains beyond the dimensions of the majority of the true incurved forms. For perfection in the latter, large size as well as quality may not be absolutely essential in every case. When quality, regularity in form, freshness, and good colour are present in blooms of fair size, the lack of extraordinary size is not so conspicuous, nor is it essential, except for the exhibition board. Depth is regarded as of more importance than diameter. For general purposes Mrs. G. Rundle, G. Glenny, and Mrs. Dixon occupy high positions as perfect flowers, but being usually small in size they are not frequently included with varieties of the same class for exhibition. In some instances special classes are arranged for these varieties forming interesting exhibits. I have seen in former years houses of these varieties alone proving attractive and profitable to their owners.

Some incurved varieties may be had in flower very early: for instance, Mons. R. Bahuaut and Baron Hirsch. A few more useful varieties in this class are Jardin des Plantes, a rich golden yellow; Empress of India, white; Madame Darier, nankeen yellow, striped purple; D. B. Crane, bronzy buff and red; Golden Queen, canary yellow; J. Agate, white; Lord Alcester, pale primrose; Nil Desperandum, orange red; Pink Venus; Princess of Wales, pearly white; Refulgens, purple maroon; Sir Titus, silvery rose; Violet Tomlin, purple violet.

Coming now to the Japanese section, I can recommend a selection which includes a number of the older varieties, as well as those of more recent introduction. Nearly everyone, exhibitors and ordinary growers, including beginners in Chrysanthemum cultivation, grows Viviand Morel. As a rule it is a clean, healthy, free-growing variety, with smooth foliage and a dwarf habit of growth, producing the best coloured flowers on second crown or terminal buds. The colour is a blush mauve, the petals long and drooping. If buds are taken on early crowns the flowers are much lighter in colour and not so effective. Similar in growth and habit, time of blooming, but different in colour, is Chas. Davis. It is a sport from V. Morel, and is of a rosy bronze. Like its parent, the colour is better on the second crown or terminal buds. The habit of plant, colour and shape of foliage is similar to V. Morel. There has recently appeared another sport from V. Morel named Lady Hanham, of a golden rosy cerise colour, originating in Yorkshire. It is an attractive variety.

Mr. H. Broomhead is a medium grower, producing flowers of a clear nankeen yellow. Source d'Or does not rank as a show flower, but is one of the leading decorative and market varieties in its particular colour, orange shaded gold. When well grown and not disbudded some excellent sprays of bloom may be secured on long stems. Mdlle. Lacroix, a pure white variety with drooping petals, is still most useful, though it has long been in cultivation, but as a show flower is now superseded by larger. It is wonderfully free-blooming and dwarf in habit of growth. The blooms last well. Mrs. Cox is of a dark amaranth colour. Good blooms of this variety are very effective in a group or mixed collection of flowers, whether the blooms are of medium or large size.

Miss Watson, a Japanese reflexed of a pale or canary yellow, is very free. It does well as a cut-back plant, and the blooms last so well that tinges of pink colour appear on the petals. Pelican is a late December blooming variety of a creamy white. Its colour and late development render it extremely useful. Wm. Seward, a rich and attractive crimson, is one of the best of the dark varieties, and a few plants, having three or four flowers each, effectively brighten up a group. H. Shoesmith may be had very dwarf by cutting low down in May, and the flowers produced will be medium in size, light, and graceful, the colour being a light buff. Good white varieties are always welcome, so even a small collection may well include Princess May. It is of robust habit.

Niveus is a remarkably good pure white variety, either for exhibition or cutting. Plants may be grown dwarf or allowed to grow naturally, as it is not a tall variety. Margot is an excellent decorative variety, either grown as single blooms or when only slightly disbudded. The colour is rosy chamois. W. H. Lincoln holds tenaciously its prominent position as a late yellow. This variety gives good blooms from almost any bud, but to obtain them of large size the number must be limited. Ryecroft Glory is a mid-October variety, doing well without disbudding. The plant is of dwarf bushy growth and the flowers a bright yellow. It is indispensable for an early display. John Shrimpton occupies a foremost place among the dark varieties. The colour is a rich crimson scarlet, and blooms which do not attain to a large size are attractive and useful.

Madame Octavie Mirbeau produces fine, large, and shapely flowers on dwarf stems, the colour being white and rose with a faint edge of amaranth. In a well-grown flower the petals are gracefully drooping. Mdlle. Thérèse Rey is an excellent white with a cream centre, fairly dwarf and easy to grow. Julian Hilpert is one of the newer Japanese varieties. The colour is deep primrose and blooms are rather late, but of an immense size. It is one of the strongest growers, and will attain to the height of 6 feet even when cut down in May. The petals are long and spreading, and as the flower opens there is quite a distinct green hue visible among the young florets. The first bud which appears after cutting down should be taken.

Golden Gate is dwarf in habit, and produces large spreading yellow flowers the latter part of November, and is a decided acquisition both for decoration and cutting. Silver King produces the best flowers allowed to grow naturally and taking second crown buds. The colour of the blooms is rosy mauve. They are slow in developing, but remain in a fresh condition a considerable time. Beauty of Exmouth ranks as a very useful white variety of dwarf habit, which we can hardly afford to exclude. Madame Chas. Molin is another pure white; good blooms are obtainable on second crowns and terminals. Etoile de Lyon may be grown naturally, and allowed to form terminal buds, which give the latest but best coloured flowers. On crown buds the blooms are lighter in colour, and usually larger. Cut-down plants also give good flowers on the crowns. The plants are vigorous growers, producing clean, healthy dark coloured foliage. One of the oldest twisted-petalled varieties is Gloriosum, colour pale yellow.

Col. Chase, a pale blush and yellow variety, has exceptionally neat and gracefully drooping flowers, the colours of which are very pleasing and chaste. It is a variety admirably adapted for formal training, good specimens being this year exhibited at the Aquarium and other shows. Though good yellows among the Japanese are now plentiful, Sir E. T. Smith is worthy of mention, the shade of yellow being a rich golden, the petals broad and flat, tips incurved; a tall and rather slender grower, coming in useful as a late bloomer. Rose Wynne, a delicate blush approaching to a pure white. This is excellent as a large flowering variety for a mixed collection, good flowers being produced from any bud. The petals are regularly arranged, long, and incurving to the centre, which gives the flower a most compact appearance. It is a fine representative of the Japanese incurved section. Lord Brooke also belongs to the last named class, and has good incurved characteristics; the petals are broad and stiff, the colour a bright bronze yellow, shaded red.

Mdlle. Marie Hoste, a dwarf grower, gives attractive flowers of a creamy white, very faintly flushed with claret. Cecil Wray is a gem among yellows; the colour is so deep and bright. The habit of the plant is dwarf, but the growths are rather slender compared with many other varieties. Souvenir de Petite Amie represents one of the best dwarf bushy varieties. Flowers are pure white, and may be grown to a large size with special culture to that end, but the prettiest and best formed flowers are to be had on those of medium size. High culture builds up high deep flowers without adding much to the length of the petals. Thos. Wilkins is an excellent bronze, or deep chrome yellow; succeeds well without extraordinary culture, rendering it well adapted for a mixed collection. Chas. Blick comes rather late, but it has attractive rich yellow blooms, the petals curling and incurving.

Dwarf primrose coloured varieties are rather scarce, but Lady E. Saunders fills up a gap in that respect, and produces excellent blooms. Madame Ad. Chatin is a superb white, the flowers produced being lovely, large, and excellently formed. This variety may be grown dwarf by rooting cuttings secured from the tops of plants after they have made the first break in May or June. Pot into 6-inch pots and secure one flower to each plant.

Elsie, a sulphur white reflexed variety, formerly was much grown for decoration. Though the flowers were small, they nevertheless were useful and attractive. A sport from this variety has now been obtained similar in size, but of a yellow colour. Sprays of this are exceedingly useful for various purposes, and I would recommend its inclusion as a decided acquisition to the decorative class.

Chrysanthemums which bloom in December are specially welcome. Tuxedo is a beautiful addition. The flowers, though not large, are of a nice form and rich colour, a deep orange. Plants grow tall, and the best flowers appear on terminal buds. E. G. Hill may be had, too, at this time. The flowers are orange yellow, shaded red, not large but rich and pleasing. —E. D. S.

SHOWS.

GRASSENDALE AND AIGBURTH.—NOVEMBER 13TH.

THIS increasingly popular show, one of the best in the Liverpool neighbourhood, was held in the Parish Room on the above date, and proved to be even more interesting than on former occasions.

The topic amongst growers has been the destination of the handsome challenge cup, valued at 20 guineas, which was last year presented by Alfred L. Jones, Esq., for twelve incurved and twelve Japanese, the cup to be won two years in succession. Last year's winner was Mr. J. Heaton, gardener to R. P. Houston, Esq., M.P.; but this year the valuable trophy was taken by Mr. Whittle, gardener to R. G. Allen, Esq., Aigburth, who had a splendid stand. Mr. Heaton was a fine second, and was not at all disgraced.

The latter took the prizes in the three other leading classes, also taking many prizes in the miscellaneous classes, other winners in this section, all of which were of exceptional merit, being Messrs. Randall, gardener to A. L. Jones, Esq.; F. Keightley, gardener to Mrs. Duncan; Leadbeater, gardener to W. J. Davey, Esq.; Kelly, gardener to R. Singlehurst, Esq.; and E. Taylor, gardener to E. Pryor, Esq. The latter won with a fine group of plants and a charming basket, 3 feet 6 inches in diameter, arranged for effect.

Grapes were excellent, as was also hardy fruit. Messrs. Jones, gardener to T. H. Bingham, Esq.; Leadbetter; Dickenson, gardener to H. A. Saunderson, Esq.; Taylor; and Maiden, gardener to W. H. Taylor, Esq. Other fine plants, not for competition, were sent by Mr. J. Harrison, gardener to Mrs. Bateson, and Mr. Randall. The chief officials, Messrs. Evans, Fawkes, and Madeley, with a competent Committee, worked assiduously to make the show a success.

BELFAST.—NOVEMBER 16TH AND 17TH.

THE Ulster Horticultural Society has every reason to plume itself on the successful autumn exhibition which was opened on Tuesday in St. George's Markets by the Lady Mayoress. It undoubtedly marks a big stride ahead of anything hitherto accomplished by this progressive and enterprising organisation. The presence of a number of leading cross-Channel Chrysanthemum culturists imparted to the show a truly national aspect, and, while there may naturally enough have been some heart-burning amongst Irish exhibitors on the score of some of the heavy prizes being carried off by the friendly "stranger," the Society gave proof of a comprehensive and liberal enterprise in throwing wide open the doors of competition. This is a policy which is bound to substantially increase both the popularity and the prosperity of the exhibition as the years roll by. It will also tell beneficially upon horticulture on this side the Channel, and already results of an encouraging character are to be noted in this direction.

With the entries increased by about eighty, and a notable improvement in many of the sections, this year's exhibition stands pre-eminently higher in the scale of merit than any of its predecessors. Encouraged in a considerable degree by the favourable anticipations of a record display, the members of Committee eclipsed themselves in their efforts to make it, so far at least as they were concerned, worthy of Jubilee year, and visitors to the show premises had not far to seek for practical and prominent evidence of the success attained. A Victoria Jubilee championship of £100 and three medals, presented by the Lady Mayoress and ladies of Ulster, was one of the most interesting features of the exhibition, and brought out a really magnificent exhibition of Chrysanthemum blooms. In this competition the Judges awarded the first prize of £40 and a gold medal to Mr. F. A. Bevan, Trent Park, New Barnet, whose collection of blooms was an object of general admiration. Mr. Alfred Tate, of Surrey, was second, and the Hon. W. F. D. Smith, M.P., Henley-on-Thames, third; Captain G. Nicholson, Glenmore, Drogheda, fourth; Lord Ashbrook, Durrow, fifth; the Countess of Pembroke, sixth; and Mr. J. H. Torrens, J.P., Edenmore, Whiteabbey, seventh. Mr. Bevan also took first prize in the cut-flower section with a handsome exhibit of twenty-four incurved. Messrs. Alexander Dickson & Sons had about two hundred specimens of fruit in baskets and on plates, embracing all the leading varieties of Apples and Pears, both for cooking and dessert. These eminent nurserymen also showed a number of ingenious devices and designs, such as an anchor, a cross, a star, and crescent, in addition to bouquets, and a tasteful arrangement of wreaths, a lyre and harps, ladies' sprays, buttonholes, and a collection of Hyacinths, Tuberoses, Violets, and some very choice flowers, Asparagus, and Crotons. Mr. Hugh Dickson, Belmont, showed 150 dishes of Apples, all home-grown, decorated with Oranges and berries.

Passing reference may be made to a table of cones and autumn-berried plants exhibited by Mr. D. Crombie, gardener to Lord Powerscourt, which were all grown in Powerscourt demesne. William Robertson, Esq., J.P., Strandtown, was given a first prize for a magnificent group of decorative Chrysanthemums; the Countess of Pembroke got a similar award for a fine collection of yellow Japanese blooms, as did also C. H. Brown, Esq., Helen's Bay, for twelve Japanese blooms of distinct varieties. Other leading exhibitors of blooms were Messrs. David Ingammells, Covent Garden, London; W. Clibran & Sons, Manchester; and H. Cannell & Sons, Kent. Mr. John Forbes, Hawick, exhibited his new Perpetual Carnation. Mr. Robert Jameson, Park Avenue Nurseries, Sandymount, had some very pretty shower bouquets, and A. D. Lemon, Esq., J.P., Strandtown, was represented by four pots of Japanese and incurved Chrysanthemums. The exhibition of fruit and vegetables was distinctly superior in all sections.

The staging of the plants and flowers, and indeed everything connected with the arrangement of the various sections of the show, could hardly have been improved upon. Every possible advantage was taken of the space available, while the decorative side of the exhibition was by no means overlooked. On the contrary, the taste and skill displayed in this connection were worthy of all praise, and showed clearly that those who carried out the work were both earnest and capable. We append the names of the prizewinners in a few of the chief Chrysanthemum classes.

For a group of Chrysanthemums, twenty pots.—First, Wm. Robertson, Esq., J.P., Netherleigh (gardener, Mr. P. M'Haffie). Second, R. Tennant, Esq., J.P., Rushpark (gardener, Mr. J. M'Ilveen). Groups of Chrysanthemums, twelve pots.—First, A. D. Lemon, Esq., J.P., Edgecumbe (gardener, Mr. H. Kirkpatrick). Second, J. D. Barbour, Esq., D.L., Conway, Dunmurry (gardener, Mr. R. Draper). Third, J. Lepper, Esq., Fairacre (gardener, Mr. T M'Donald). Groups of Chrysanthemums.—First, William Robertson, Esq., J.P., Netherleigh (gardener, Mr. P. M'Haffie). Second, J. Lepper, Esq. (gardener, Mr. T. M'Donald). Third, A. D. Lemon, Esq., J.P., Edgecumbe (gardener, Mr. H. Kirkpatrick). Six pots Chrysanthemums, three incurved and three Japanese.—Wm. Robertson, Esq., J.P., Netherleigh (gardener, Mr. H. Kirkpatrick). Four pots Chrysanthemums, two Japanese and two incurved.—First, A. D. Lemon, Esq., J.P., Edgecumbe (gardener, Mr. H. Kirkpatrick). Second, J. Lepper, Esq. Four pots Chrysanthemums, Japanese and incurved excluded.—First, W. Robertson, Esq., J.P. (gardener, Mr. P. M'Haffie). Second, J. Lepper, Esq. (gardener, Mr. T. M'Donald). Best specimen Chrysanthemum, incurved.—First, A. D. Lemon, Esq., J.P., Edgecumbe (gardener, Mr. H. Kirkpatrick). Second, W. Robertson, Esq., J.P. (gardener, Mr. P. M'Haffie). Best specimen Chrysanthemum, Japanese.—First, A. D. Lemon, Esq., J.P., Edgecumbe (gardener, Mr. H. Kirkpatrick). Second, Wm. Robertson, Esq., J.P. (gardener, Mr. P. M'Haffie). Groups of stove and greenhouse plants.—First, R. Tennent, Esq., J.P., Rushpark (gardener, Mr. J. M'Ilveen). Second, J. Lepper, Esq. (gardener, Mr. T. M'Donald).

In the cut bloom section for twenty-four Japanese, distinct varieties.—First, Lady Emily H. Bury, Charleville Forest, Tullamore (gardener, Mr. R. M'Kenna). Second, Colonel the Honourable C. F. Crichton, Mullaboden, Ballymore (gardener, Mr. W. G. Michison). Third, W. Robertson, Esq., J.P., Netherleigh (gardener, Mr. P. M'Haffie). Twelve Japanese, distinct varieties.—G. H. Brown, Esq., Fordevra, Helen's Bay (gardener, Mr. James Reid). Six Japanese, distinct varieties.—G. H. Brown, Esq. (gardener, Mr. James Reid). Twelve Japanese, white, two varieties.—First, Countess of Pembroke, Mount Merrion, Booterstown (gardener, Mr. H. Crawford). Second, Lady E. Bury, Charleville Forest (gardener, Mr. R. M'Kenna). Third, John M'Stay, Esq., Moyaro, Hannahstown (gardener, Mr. James Little). Twelve Japanese, yellow, two varieties.—First, Countess of Pembroke (gardener, Mr. H. Crawford). Second, John Torrens, Esq., Rostulla, Whiteabbey (gardener, Mr. William Hodgins). Third, Marquis of Downshire, Hillsborough Castle (gardener, Mr. Thomas Bradshaw). Twelve Japanese, any other colours, two varieties.—First, William Robertson, Esq., J.P., Strandtown (gardener, Mr. P. M'Haffie). Second, Countess of Pembroke (gardener, Mr. H. Crawford). Third, T. H. Torrens, Esq., Edenmore, Whiteabbey (gardener, Mr. James Robinson). Twenty-four incurved, eighteen varieties.—First, F. A. Bevan, Esq., Trent Park, New Barnet (gardener, Mr. W. H. Lees). Second, Alfred Tate, Esq., Downside, Leatherhead, Surrey (gardener, Mr. W. Mease). Third, T. H. Torrens, Esq., Edenmore (gardener, Mr. James Robinson). Twelve incurved, distinct varieties.—First, John Torrens, Esq., Rostulla (gardener, Mr. W. Hodgins). Second, Lady Emily H. Bury, Tullamore (gardener, Mr. R. M'Kenna). Six incurved, white, one variety.—John M'Stay, Esq., Hannahstown (gardener, Mr. Jas. Lyttle). Second, Lord Ashbrooke, The Castle, Durrow (gardener, Mr. James M'Kellar). Third, T. H. Torrens, Esq. (gardener, Mr. J. H. Robinson). Six incurved, yellow, one variety.—First, Lord Ashbrook, Durrow Castle (gardener, Mr. James M'Kellar). Second, William Robertson, Esq., J.P. (gardener, Mr. P. M'Haffie). Third, Countess of Pembroke, Booterstown (gardener, Mr. H. Crawford). Six incurved, any other colour, one variety.—First, T. H. Torrens, Esq. (gardener, Mr. J. H. Robinson). Second, John Torrens, Esq. (gardener, Mr. William Hodgins). Third, Lord Ashbrook, Durrow Castle (gardener, Mr. James M'Kellar). Twelve Anemone-flowered, six varieties.—First, John Torrens, Esq. (gardener, Mr. Wm. Hodgins). Second, Lady Emily H. Bury, Tullamore (gardener, Mr. R. M'Kenna). Third, T. H. Torrens, Esq., Edenmore (gardener, Mr. J. H. Robinson). Thirty-six blooms, twelve varieties, shown in glasses.—W. Robertson, Esq., J.P., Netherleigh (gardener, Mr. P. M'Haffie). Best incurved bloom.—F. A. Bevan, Esq., New Barnet (gardener, Mr. W. H. Lees). Best Japanese bloom.—Hon. W. F. D. Smith, M.P., Henley-on-Thames (gardener, Mr. H. Perkins).

Basket of Chrysanthemum blooms, artistic arrangement.—First, John S. Smallman, Esq., Shamrock Lodge, Dalkey (gardener, Mr. W. Whelan). Second, J. D. Barbour, Esq., Conway House, Dunmurry (gardener, Mr. R. Draper). Third, A. D. Lemon, Esq., J.P., Edgecumbe, Strandtown (gardener, Mr. H. Kirkpatrick).

Forty-eight Japanese blooms, thirty-six varieties.—First, F. A. Bevan, Esq., Trent Park, New Barnet (gardener, Mr. W. H. Lees). Second, Alfred Tate, Esq., Downside, Leatherhead, Surrey (gardener, Mr. Wm. Mease). Third, Hon. W. F. D. Smith, M.P., Greenlands, Henley-on-Thames (gardener, Mr. H. Perkins). Fourth, Captain G. Nicholson, Glenmore, Drogheda (gardener, Mr. Peter Brock). Fifth, Lord Ashbrook, The Castle, Durrow (gardener, Mr. James M'Kellar). Sixth, Countess of Pembroke, Mount Merrion, Booterstown (gardener, Mr. H. Crawford). Seventh, T. H. Torrens, Esq., J.P., Edenmore, Whiteabbey (gardener, Mr. James H. Robinson).—("The Northern Whig.")

CHIPPENHAM.—November 17th.

This, the first Chrysanthemum show held at Chippenham, was a complete success. It clashed with Bristol and another Wiltshire exhibition, otherwise many more flowers and fruit would have been staged, in which case the Committee, with their excellent Honorary Secretaries, Messrs. L. H. Marshall and G. A. H. White, would have had more exhibits than they would been able to find good room for.

Groups of Chrysanthemums were fairly numerous, and in some instances considerably above mediocrity. In the open class Mr. Passmore, gardener to E. H. Clutterbuck, Esq., was well first, the second prize going to Mr. G. Humphries (of Dahlia fame), Kington Langley. L. H. Marshall, Esq., Mayor of Chippenham, was easily first with a smaller group, and also had a first prize for a collection of twelve admirably flowered untrained plants. For a group of miscellaneous plants Mr. G. Humphries was first, and Mr. Huff second. Various other plant classes were provided, and these were well filled.

In the open class for twenty-four cut blooms of Japanese Chrysanthemums, the Bromham Fruit Company, near Calne, was a good first, their stands containing grand fresh blooms of Madame Carnot, M. M. Ricoud, W. H. Lees, Mons. Meg, Mrs. H. Chiesman, Madame C. Capitant, Golden Gate, Herman Kloss, Australian Gold, Phœbus, Mutual Friend, Madame C. Molin, Mons. Chenon de Leché, Western King, and Julia Scaramanga. Mr. F. Perry, gardener to Captain Spicer, Spye Park, Chippenham, was second, Mdlle. M. A. Galbert and Mutual Friend being among his best. For eighteen incurved varieties Mr. Perry was first with good blooms of C. H. Curtis, Lucy Kendall, J. Agate, M. Bonnaffon, and other popular varieties.

The best twelve varieties were shown by the Bromham Fruit Co., Mr. F. Perry taking the second prize. In the local class for twelve Japanese varieties the Bromham Fruit Co. again took the lead, with Mr. Perry second. The first named had fine blooms of Silver King, Mutual Friend, E. Foregate, Madame Carnot, and Golden Gate. Mr. W. Spink, gardener to T. Harris, Esq., Calne, was well first for six varieties, showing good blooms of T. Wilkins, C. Davis, Viviand Morel, E. J. Whittle, and G. C. Schwabe. L. H. Marshall, Esq., was second, and an extra prize was awarded Mr. Passmore. The class for six blooms of any one variety proved very attractive. L. H. Marshall, Esq., was first with Good Graeious, and Mr. Perry a close second with Phœbus. Amateurs also acquitted themselves admirably, Mr. G. A. White taking a good lead among these.

Fruit and vegetables were plentiful, and good in point of quality. In these classes Messrs. F. Perry; Pitts, gardener to Sir A. W. Neeld, Bart.; Passmore, and the Bromham Fruit Co., were the most successful. A fine non-competitive group of Chrysanthemums and other plants was arranged by Mr. Welch, gardener to Sir J. Dixon-Poynder, Bart., M.P., Corsham, and another equally attractive group was lent by Messrs. G. Cooling and Sons, Bath.

CHISLEHURST.—November 17th.

What can be accomplished in organising and carrying out a Chrysanthemum show at a short notice by a body of men determined to do their best for the cause of charity was exemplified on Wednesday last by the members of the Chislehurst Gardeners' Association. Less than three weeks since it was suggested that the members should have a show amongst themselves and make a small charge for admission, the proceeds to go to the Gardeners' Orphan Fund. The idea was taken up by the members, who one and all determined to do their best to make it a success; the gardeners were, however, powerless without the consent of employers, but in every case when asked, permission to exhibit produce was freely given, and the result obtained was beyond the most sanguine expectations. St. Mary's Hall, West Chislehurst, was placed at the disposal of the Association by the Rev. H. L. Russell.

Groups of Chrysanthemums and miscellaneous plants, cut blooms of Mums, fruit, and vegetables, with plants for table decoration, were pressed into service, and made a very fine display when arranged by the Staging Committee. As the show was non-competitive, no classes were specified, but one gentleman very generously offered three prizes for a collection of vegetables, six varieties, to be competed for by allotment holders, and no less than nine exhibitors staged produce that would have done credit to shows of greater pretensions.

In cut blooms Mr. Lyne, gardener to H. F. Tiarks, Esq., Foxbury, staged twenty-four Japanese and twenty-four incurved, as also did Mr. W. Harvey, gardener to R. B. Martin, Esq.; Mr. R. Leadbetter, gardener to A. G. Hubbuck, Esq.; and Mr. G. B. Lees, gardener to R. de Quincey, Esq.; whilst Mr. J. Blackburn, gardener to J. Scott, jun., Esq., staged thirty-six Japanese. The whole of the blooms in these exhibits were fine, and secured much admiration from the visitors. Cut blooms were also contributed by Mr. W. Hopgood, gardener to Mrs. Parr; Mr. Evans, and Mr. Green.

Mr. Wood, gardener to H. James, Esq., arranged a capital group of Chrysanthemums, as also did Messrs. Pinyon & Son, Chislehurst; while groups of miscellaneous plants were staged by Mr. Lyne, Mr. Last, gardener to R. Foster, Esq.; Mr. Hatto, gardener to J. Dun, Esq.; and Mr. Grevatt, gardener to J. Stoneham, Esq. Fruit was staged by Mr. Boniface, gardener to J. T. Firbank, Esq., twenty-four dishes of Apples and Pears; Mr. Lyne, eight dishes of Apples and two bunches of Grapes; Mr. Filkins, gardener to R. B. Berens, Esq., twenty-five dishes of Apples and Pears; Mr. Last, twelve dishes; and Mr. Lawson, six dishes. Table plants were contributed by Mr. Lyne and Mr. Lees. Mr. J. Heard, gardener to Mrs. Redpath, staged a good collection of Cyclamens, well grown and flowered, as was to be expected from so good a grower of this useful winter flowering plant. Mr. Gutteridge, gardener to Canon Allen, staged three baskets of very fine Mushrooms, and Mr. Woodger exhibited a floral bell formed of Chrysanthemum blooms, and having the initials of the Association on it. This was suspended in a conspicuous place, and was humourously dubbed the belle of the show.

The show was well patronised during the afternoon and evening—in fact, one might say it was crowded, which was very satisfactory, and it is to be hoped that a good balance will be left over after paying the few expenses incurred. During the evening the Rev. H. L. Russell presented the prizes to the successful allotment holders, and in doing so said that thanks were due to the members of the Gardeners' Association for the very great pleasure they had afforded them.

READING.—November 17th.

The annual exhibition of the above Society was held in the Town Hall on the above date. The entries were much more numerous than in former years, and consequently the competition was keener. The chief feature was the groups, but these were arranged in too stiff and formal a style. The cut bloom classes were well filled, and some excellent stands were staged. A word of praise is due to the Secretary, Mr. W. L. Walker, for the able manner in which the several details of the show were carried out.

For a circular group, 10 feet in diameter, there were four competitors, each of whom staged in a very creditable manner. The premier prize was taken by Mr. Perkins, gardener to the Hon. W. F. D. Smith, M.P., Greenlands, Henley, with a splendid arrangement. Amongst the conspicuous varieties were Mrs. H. Weeks, Chas. H. Curtis, Viviand Morel, Etoile de Lyon, Madame Carnot, and Chas. Davis. The second prize group consisted chiefly of bush plants, and was shown by Mr. T. Turton, gardener to the executors of John Hargreaves, Esq., Maiden Erlegh, Reading. Mr. R. Bassil, gardener to D. H. Evans, Esq., Pangbourne, was third.

In the class for a group of Chrysanthemums in pots, not disbudded, to occupy a space of 6 feet by 4 feet, there were three exhibitors, one of whom was disqualified. Mr. M. Booker, gardener to W. Berkley, Esq., Reading, was a decided first, followed by Mr. Chamberlain, gardener to F. M. Lonergan, Esq., Cressingham. For three trained specimens, distinct, Mr. Booker was again first with well grown plants of Phœbus, Viviand Morel, and Souvenir de Petite Amie. Mr. Wilson, gardener to Mrs. Garland, Lower Redlands, was second; and Mr. Mayne, gardener to Miss Wallis, Bath Road, Reading, third.

Undoubtedly, the most charming and interesting class in the whole show was that for a group of cut Chrysanthemum blooms arranged with Ferns and small foliage plants, to occupy a space of 4 feet by 3 feet, to illustrate the decorative value of the Chrysanthemum. Seven exhibitors competed, and the first prize stand was of great beauty, the flowers and plants being arranged with the most excellent taste. This was from Mrs. Walker. Mr. F. Bright, gardener to J. P. B. Karslake, Esq., Whitenights, Reading, was second with a heavier arrangement; and Mr. Chamberlain a very good third.

The cut bloom section comprised many classes, in several of which the competition was very close. Some of the blooms were of high quality, though others staged were decidedly past their best. The principal class for incurved was for twenty-four distinct varieties, and Mr. Higgs, gardener to J. B. Hankey, Esq., Fetcham Park, Leatherhead, was awarded the first prize. His best blooms were Duchess of Fife, C. B. Whitnall, George Haigh, Princess of Wales, Robert Cannell, Bonnie Dundee, Brookleigh Gem, Empress of India, and Mrs. C. Colcman. The second position was taken by Mr. Paddon, gardener to Col. H. Ricardo, Bramley Park, Guildford, who had good blooms of Mr. R. King, Mrs. R. C. Kingston, W. Tunnington, C. B. Whitnall, Violet Tomlin, Major Bonnaffon, and Duchess of Fife. Mr. Neville, gardener to F. Flight, Esq., Twyford, was a good third.

In the class for twenty four Japanese, distinct, seven fine stands were staged, and the competition was very keen. Mr. Higgs again proved successful with a superb stand, comprised of Madame Carnot, Australie, Hairy Wonder, Mdlle. Thérèse Rey, Bellem, Viviand Morel, Mons. Chenon de Leché, Oceana, Madame Gustave Henri, Phœbus, Etoile de Lyon, Charles Davis, and others. Mr. Paddon was an exceedingly close second; he had fine blooms of Australian Gold, Etoile de Lyon, Phœbus, W. H. Lees, Mrs. C. Blick, and Mons. Panckoucke. Third, Mr. A. Maxim, gardener to Col. H. Walpole, Heckfield. For twelve Japanese, distinct, Mr. Cole, gardener to Sir Geo. Russell, Bart., M.P., Swallowfield Park, was an easy first, his best blooms being Phœbus, Niveus, Mrs. W. H. Lees, Charles Davis, and Mrs. J. Lewis. Mr. Galt, gardener to Chas. E. Keyser, Esq., Aldermaston Court, was a good second; and Mr. Fagents, gardener to F. Wellesley, Esq., Woking, third.

Mr. Maxim took the lead in the class for twelve incurved with a good stand, which included Bonnie Dundee, Lucy Kendall, Duchess of Fife, and Alfred Salter. Mr. Price, gardener to F. P. Bulley, Esq., Fairford, was second, and Messrs. Blair & Shackle, Ascot, third. For twelve reflexed Mr. Price was an easy first. For six Japanese, one variety, nine stands were staged. Mr. Galt was first with a superb stand of Mrs. H. Weeks, Mr. Cole second with Phœbus, and Mr. Fagents third with Australie. For six incurved Mr. Neville was an easy first with Chas. H. Curtis, Mr. Galt second with the same variety, Mr. Paddon third with Mrs. R. C. Kingston. There were five exhibitors of a single epergne, Miss Phillips being first, and Mrs. Wadmore second.

Non-competitive exhibits were not particularly numerous, neither were some of them of any great merit. The most conspicuous was an arrangement of floral designs from Messrs. Phippen & Sons, Reading. This was exceptionally beautiful, and elicited an unusual amount of interest.

Messrs. G. Bunyard & Co., Maidstone, staged a grand collection of Apples. The exhibit comprised sixty dishes, and all the best varieties were represented. Fruits of several kinds were splendidly shown in competitive class, but space is not sufficient to give detailed notice of this section of the exhibition.

CARLISLE.—NOVEMBER 17TH AND 18TH.

THE Carlisle and Cumberland Horticultural Society held its second annual show of Chrysanthemums and other flowers, fruit, vegetables, and honey, in the Drill Hall, Carlisle, on Wednesday and Thursday. The Society is making good progress, and as Mr. Crowder, at the opening, said, it fills a want which has existed in the city for many years, a want which suburban places like Stanwix and Wetheral have tried in vain to fill. The first show proved most encouraging to the Society, Mr. J. W. Watt, the Hon. Treasurer, having a balance of £35 to the good after all expenses were met. The work of preparation for the show now held was therefore undertaken by the Hon. Secretary, Mr. A. R. Sale, and the Committee with hopeful anticipations of an equally satisfactory result; and it was pleasing to find, says a local contemporary, that the exhibition turned out to be both larger and better than the first.

The prize list was similar to that of last year, but the entries numbered ninety more, being spread over all sections. There were some classes in which competition was wanting, but there was a hearty feeling generally in the show, and it was evident that the Society is doing good work in arousing fresh interest in the beautiful autumn flowers, which are this season so exceptionally abundant. The display of Chrysanthemums was luxuriant, and some of the blooms, so richly varied in colourings, seemed to be even larger than were shown last year. There would appear to be no end to the development of the size of Japan's national flower, and certainly no limit to the varieties, new examples constantly occurring. There were numerous classes for the large specimens, and where they

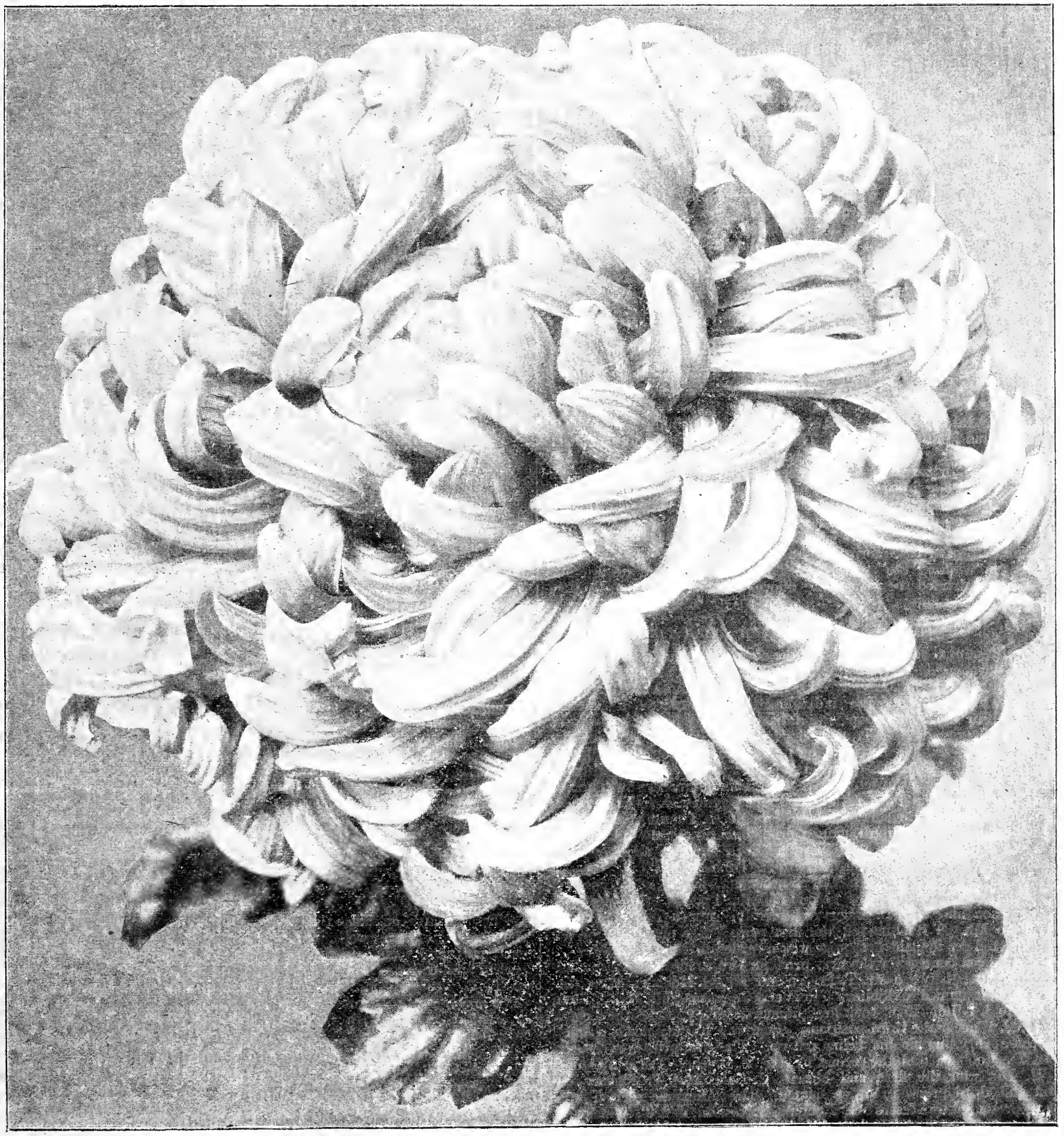

FIG. 75.—CHRYSANTHEMUM GEORGE FOSTER. (*See page* 503.)

were collected visitors were at once attracted by the blaze of bloom. The smaller kinds, however, were not neglected, and there was variety in other directions to add interest to the show. There was a splendid display of fruit and vegetables. There were classes for amateurs and private gardeners combined, for amateurs alone, and open classes. There were large stands for exhibition purposes from Messrs. Little & Ballantyne, who never compete at local shows. One formed a magnificent semicircle on the floor in front of the platform, and consisted of decorative flowers and plants, among which Chrysanthemums were conspicuous, affording a striking contrast against the foliage plants. Its highly artistic arrangement was only what one is accustomed to see in work carried out by the firm. There was also a large stand of vegetables on exhibition by the same firm.

In the open competitions Messrs. Fairbairn & Son's group of Chrysanthemums and other plants was properly awarded first place. It included large Chrysanthemums, Eulalias, Palms, Dracænas, and Ferns. The second prize went to Messrs. McMillan & Son with a stand not quite so well filled, but very bright and tasty. Mr. R. Hall, Botcherby, was first for four Japanese Chrysanthemum plants with fine specimens of W. H. Lincoln, Viviand Morel, John Seward, and Charles Davis. Messrs. Fairbairn & Son were second. Mr. Hall won for a specimen Chrysanthemum plant with a Charles Davis full of fine bloom. In cut blooms Mr. James Hay of Houghton Hall was first for twelve incurved Chrysanthemums with specimens which were rather smaller than the second, but better finished. Mr. Horne, Netherhall, who was second, showed scarcely so many varieties, but they included a very fine C. H. Curtis. Messrs. Fairbairn & Son won in the class for twenty-fours, and Mr. Potter, Whitehall, was second with larger but rougher blooms. In the class for six blooms, one variety, Mr. Hay was again first with half a dozen blooms of Mdlle. M. Hoste. The second and third, from Mr. Horne and Messrs. Fairbairn & Son, were both Edwin Molyneux.

The competition for bouquets was open, and was won by Messrs. Fairbairn & Son. There was a good entry, and all were shower bouquets, the winning exhibit being a tasteful arrangement of Lilies of the Valley. Messrs. Fairbairn also won for basket of Chrysanthemums, with a simple and elegant arrangement of white, yellow, and bronze Japanese flowers and grass. The first prize ladies' spray was made by Mr. Hall, Botcherby, and consisted of bronze and white Chrysanthemums and Maidenhair Fern. The second prize went to a very neat spray of white single flowers, from Messrs. J. Hammond & Son, St. Ann's Hill. Messrs. Fairbairn also won for epergnes, in which the competition was very keen. The first prize epergne was a trifle faulty at the bottom, and the second, from Messrs. Hammond, was wanting in decoration of the middle, but on the points, after a very close contest, Messrs. Fairbairn won. In the class for epergnes of cut flowers, ladies being the competitors, a high standard of artistic merit was shown. Miss Fairbairn, Botcherby, succeeded in winning the first prize. The prizes in the several other classes were divided between the above named and many other competitors.

SOLIHULL.—November 17th and 18th.

The fifth annual show was held on the above dates, and proved to be a distinct advance on any of its predecessors. The seven groups of plants made a very imposing effect, and in the main were tastefully arranged, whilst some of the individual blooms were of a superior character. For the best group with foliage plants admissible the first prize and a silver medal (the latter given by W. A. Upton, Esq., for the most meritorious exhibit in the show) was awarded to Mr. D. Bagg, gardener to W. E. Perks, Esq., Ashley, and was deservedly bestowed. The second prize was awarded to Mr. G. Robbins, gardener to Thomas Hewitt, Esq.; and the third to Mr. T. Preece, gardener to S. Leitner, Esq., Alderbrook. In the smaller group class Mr. T. Leeson, gardener to H. H. Chattock, Esq., Solihull, gained first honours, closely followed by Mr. T. Warner, gardener to W. A. Upton, Esq., and the third position was secured by Mr. J. Dixon, gardener to L. Grinsell, Esq.

For one trained Japanese Chrysanthemum, Mr. G. Robbins led with a good Viviand Morel, the second and third prizes being accorded Mr. T. Leeson and Mr. D. Bagg respectively. For a single plant of incurved to Mr. G. Robbins fell the first prize. For one plant of the single flowered section, the first prize was awarded to Mr. G. Robbins.

It was a keen contest for the first prize for twelve blooms of Japanese Chrysanthemums between Mr. T. Preece and Mr. G. Robbins, the victor being the first named exhibitor. For six Japanese, Mr. G. Milton, gardener to J. Gillot, Esq., took first honours, Mr. J. Eales the second, and Mr. T. Warner the third positions. Incurved blooms made a good class, some very fine blooms being put up. The first prize was secured by Mr. G. Robbins, and the second by Mr. T. Preece. For six blooms Mr. H. Dix won the first, and Messrs. J. Eales and T. Warner the second and third prizes in order named. The Anemone section was nicely represented by Messrs G. Robbins, T. Leeson, and T. Warner in their respective order. The class for six Japanese cut blooms, any one variety, was worthily represented by Mr. G. Milton, with fine examples of Niveus, Mr. T. Preece, with very good Modesto, and Mr. T. Leeson by another variety, the prizes being awarded according to their order named. For six plants for table decoration Messrs. J. Eales, D. Bagg, and H. Dix were the respective winners.

SOUTH SHIELDS.—November 17th and 18th.

The spacious and beautifully decorated hall, known as the Assembly Rooms, was resplendent with a very fine display of Chrysanthemums—groups, table decorations, bouquets, and cut blooms—on the above dates. This is the sixteenth annual exhibition, and it speaks well for its management that this is the only Society in the county that has survived so long. The present was without doubt a great advance of any previous exhibition. The groups were good, the bouquets and epergnes of an exceptionally high order of merit, the Orchids and other choice flowers employed in them being quite an exhibition in themselves. The cut blooms, Japanese, incurved, and Anemones, very bright, clean, and of excellent quality, there being as many as ten entries in the twelve Japanese, and the other classes being also well filled.

The leading prize was for twenty-four Japanese, in not less than twelve varieties, for which a silver cup and £6 in money were offered as the first prize. For this Mr. J. Corbett, gardener to the Marquis of Normanby, Mulgrave Castle, Whitby, was a good first with the following:—Viviand Morel (2), Mutual Friend (2), Mons. Panckoucke, Etoile de Lyon, Waban, Mrs. W. H. Lees (2), Golden Gate (2), Silver King (2), Eva Knowles, Duchess of Wellington (2), Florence Davis (2), Chas. Davis, International, Phœbus, Thérèse Rey, and Duke of York. Messrs. Fairbairn & Son, Carlisle, were a good second; and Mr. P. Blair, gardener to the Duke of Sutherland, Trentham, third, with large flowers, but many somewhat past their best.

In the class for twenty-four incurved, in not less than twelve varieties, the prize was the same as in the Japanese—a Jubilee silver cup and £6 in money. The first was taken by Mr. J. Coultess, gardener to Alderman Harding, Hollyhurst, Darlington, with J. Agate (2), M. Bahuant (2), Chas. Curtis (2), Empress of India (2), Robert Petfield (2), Queen of England (2), Emily Dale (2), Lord Alcester (2), George Haigh (2), Madame Darier (2), Alfred Salter, Miss M. A. Haggas, Refulgens, and Baron Hirsch. The second was taken by Mr. P. Blair; the third by Mr. G. Shotton, gardener to H. Andrews, Esq., Swarland Hall, Northumberland.

For eighteen Japanese, in not less than twelve varieties, the first prize was awarded to Mr. P. Blair, for an excellent stand. Second, Mr. Corbett. Third, Messrs. Fairbairn & Son. In the corresponding class for eighteen incurved Mr. P. Blair was again to the front, the second being taken by Mr. John McIntyre, gardener to Mrs. Gurney Pease, Woodside, Darlington. Third, Mr. G. Shotton. In the class for twelve Japanese, distinct, Messrs. G. Fairbairn & Son were first; Mr. P. Blair second; Mr. McDongal, gardener to H. Pease, Esq., Arcot Hall, Dudley, Northumberland, third. For twelve incurved, distinct, Mr. J. Coultess was again first with a neat stand of the leading varieties; Mr. P. Blair second; and Mr. Shotton third.

The Anemone classes were well contested with some of the finest stands that have been exhibited this year. The first prize for twelve was awarded to Mr. George Shotton, with a fine fresh stand, with well-developed cushions; second, Mr. G. Smith, Floral Cottage, Hull; and Mr. McDougal close up third. For twelve reflexed Mr. Shotton was first; and Mr. McIntyre, Darlington, second. The prizes for Pompons were won by Mr. T. Chalmers, gardener to S. P. Austin, Esq., Cocken Hall, Durham; Mr. Methersol, gardener to H. Wilson, Esq., Westoe; and Mr. J. Fairlee, gardener to T. T. Maberne, Esq., Westoe, in the order of their names.

In competition for the medal and £5, offered as first prize for a group of Chrysanthemums and foliage plants arranged for effect, Mr. John McIntyre, Darlington, was a good first with a very artistic arrangement of Kentias and Cocos Palms, Crotons, and Pandanus, surmounting pinnacles formed of cork, and interspersed with good Chrysanthemums; Calanthes and Anthurium Andreanum being employed with pretty effect in the dells. The second was taken by Mr. McDougal; third by Mr. Gilchrist.

Messrs. Clibran exhibited a very good group of Celosias and Chrysanthemums (not for competition). Messrs. C. Wood and R. Robson, as Staging Committee, arranged everything for the Judges in methodical order, and Messrs. H. Hinde, A. Purvis, Dr Turnbull, and others assisted Mr. Bernard Cowan (the Hon. Secretary) to carry out the arrangements and work in connection with this very successful exhibition.

SUTTON COLDFIELD.—November 17th and 18th.

The twelfth annual exhibition was held in the Town Hall on the above dates, and was well up to the standard of previous occasions. The chief feature was undoubtedly the splendid half-circular bank of Chrysanthemums, arranged for effect, exhibited by Mr. A. Thorpe, gardener to T. E. Pears, Esq., Elsmore, Manor Hill, and to whom the N.C.S.'s silver-gilt medal was awarded. The second prize was awarded to Mr. A. Jenkins, gardener to W. A. Wills, Esq., Wylde Green; the third prize being given to Mr. T. Padbury, Erdington.

Cut blooms were grandly shown, and the stand of twenty-four Japanese exhibited by Mr. A. Jenkins contained several superb examples. The second prize was awarded to Mr. A. Hughes, gardener to W. L. Hodgkinson, Esq., for also an excellent stand, and the third prize to Mr. W. Pearce, gardener to Mrs. Jerome, Holland House.

For twelve blooms, Mr. T. E. Pears was awarded the first prize with a very good stand, the best blooms being Simplicity, Niveus, Etoile de Lyon, M. Hoste, and Mrs. Lees, the second and third prizes falling to Mr. A. Hughes and Mr. A. Jenkins. For twelve incurved, the premier prize was awarded to Mr. A. Jenkins for beautiful blooms of such as C. H. Curtis, J. Agate, R. G. Kingston, Baron Hirsch, T. Musten, and Miss Simkins. The second prize went to Mr. A. Hughes with also a meritorious lot.

For a basket of dwarf Chrysanthemums with foliage plants, arranged for effect, the first prize was awarded to Mr. A. Hughes, the second to Mr. A. Jenkins, and the third to Mr. A. Jeffs, all with effective contributions.

YORK.—November 17th, 18th, and 19th.

For the purpose of a Chrysanthemum show few societies have at their disposal so suitable and grand a building as the Fine Art Exhibition Building in this city, and the Ancient Society of York Florists has again sustained its reputation in promoting one of the best shows in the north of England. The prizes here scheduled for Chrysanthemums are on the most liberal scale, and are supplemented by others equally tempting for fruits and vegetables. To those important factors to success is to be added the business abilities of the Committee, so well represented in the able Secretary, Mr. Lazenby, whose duties in carrying out the arrangement were most courteously performed, and all the work in connection therewith smoothly and expeditiously got through without a hitch of any description. The receipts on the three days amounted to £320, an increase of £60 on the previous year.

In the open cut bloom classes for eighteen incurved and eighteen Japanese, Mr. J. Folkard, gardener to Sir Jas. Walker, Bart., was first, showing fine examples of incurved: (2) C. H. Curtis, (2) Lord Alcester, (2) Queen of England, (2) Golden Empress, (2) G. Haigh, (2) Robt. Petfield, Wm. Tunnington, Mrs. R. C. Kingston, J. Doughty, Empress of India, C. B. Whitnall; Japs: Mrs. W. H. Lees, Edith Tabor, Australie, General Roberts, Thos. Wilkins, Mons. Andre, Australian Gold, Etoile de Lyon, Louise, (2) Mrs. H. Payne, (2) Ed. Molyneux, (2) Madame Carnot, and (2) Mons. Chenon de Leché. Mr. Goodacre, gardener to the Earl of Harrington, was second; and Mr. Hotham, gardener to J. E. Wade, Esq., Brantingham Thorpe, third.

For eighteen incurved, Mr. Folkard was again first with meritorious blooms of C. B. Whitnall, J. Agate, Mrs. R. C. Kingston, Lord Alcester, Geo. Haigh, Mrs. J. Kearne, Mrs. Robinson King, Violet Tomlin, Mrs. S. Coleman. Robt. Petfield, Miss M. A. Haggas, (2) C. H. Curtis, (2) Empress of India, (2) Queen of England. Second, Mr. G. Anderson, gardener to A. Milnthorpe, Esq., Tower Hill, Whixley; third, Mr. Goodacre. Mr. Folkard again secured first place for twelve incurved; Mr. Hotham second; Mr. Picker, gardener to F. R. Pease, Esq., Hesslewood, near Hull, third.

For six incurved, Mr. Hotham was first, and Mr. Folkard second. For six incurved, one variety, Mr. Picker was first with fine blooms of C. H. Curtis.

For eighteen Japanese Mr. D. Williams, gardener to the Earl of Feversham, Duncombe Park, was first with Chenon de Leché, Phœbus, Good Gracious, Niveus, Eva Knowles, Thérèse Rey, Chas. Davis, M. A. de Galbert, Mrs. H. Payne, Edith Tabor, G. C. Schwabe, Florence Davis, Ed. Molyneux, Thos. Wilkins, Viviand Morel, Australian Gold, Mons. Panckoucke. Second, Mr. Picker. Third, Mr. Hotham.

For twelve Japanese Mr. Williams was first with Mrs. C. H. Payne, Chenon de Leché, Mons. Panckoucke, Eva Knowles, Thérèse Rey, Col. B. Smith, Edith Tabor, Ed. Molyneux, M. A. de Galbert, Viviand Morel, and C. Davis. Second, Mr. Picker. Third, Mr. Folkard. The citizens' challenge prize, value £10, and £3 added, for eighteen distinct varieties, was won by Mr. C. H. Dobson, gardener to R. Lawson, Esq., Ousecliffe, Mr. Everard, gardener to Mrs. Gutch, second, and Mr. D. Dickinson, gardener to W. B. Richardson, Esq., Elm, third.

Groups of Chrysanthemums, interspersed with foliage plants, arranged for effect on a space of 120 square feet. Two of the groups in this class placed the judges in a tight corner; whilst three of them gave their verdict in favour of one group, the other three Judges were in favour of the other, and as neither side could give way an umpire was called in, who again was unable to decide as to the relative merits of the two groups so as to bring the balance in favour of one over the other. It was decided to bracket the awards as equal first, one falling to Mr. McIntosh, gardener to J. T. Hingston, Esq., and the other to Mr. Geo. Cottam, Alma Gardens, Cottingham; the other group, receiving a fourth prize, belonged to Mr. J. Wragge, Burton Lane, York.

In the group of Chrysanthemums arranged for effect, of 100 square feet, the competition was again very close; four groups competed. The prize was won by Mr. Dickinson; the second by Mr. Everard; third, Mr. Pettinger, Strawberry Vale Nurseries, Harrogate; fourth, Mr. Jarvis, gardener to Mrs. Whitaker, Hessle Cliffe. The Chrysanthemum plant classes are always well filled at York, and the specimens reflect the highest credit upon the cultivators. For four plants of incurved Mr. Dickinson was first; Mr. Everard second; Mr. T. Smith third. Four Japanese, Mr. Everard was first; Mr. Dickinson second; Mr. T. Smith third.

The trade exhibits by Messrs. W. Wells, Earlswood, and W. Bousal, Harrogate, deservedly received certificates of merit. The same distinction was awarded to a fine representative collection of Apples exhibited by Messrs. Jas. Backhouse & Son, York. Fruit and vegetables were of the highest quality, and made an imposing show.

BARNSLEY.—November 18th and 19th.

This show was held in the large Concert Hall of the Harvey Institute, and was highly successful, the local classes showing decided and steady progress from year to year. This improvement was especially noticeable in the plant and group classes, and the open cut bloom classes were of a high standard of merit.

The first for eighteen incurved was awarded to Mr. Vaughan, Birkenhead, for grand flowers of Wm. Tunnington, C. H. Curtis, Dorothy Foster, J. Agate, Ma Perfection, Mrs. R. King, Lord Rosebery, Mrs. J. Gardener, Robt. Petfield, Bonnie Dundee, Robt. Cannell, Mrs. R. C. Kingston, George Haigh. Second, Mr. A. Alderman, Worksop; third, Mr. Ketchil, Ackworth.

For eighteen Japanese Mr. Vaughan was again first with good blooms of Mrs. H. Payne (2), Phœbus (2), Chas. Davis, Ed. Tabor, Hairy Wonder, Mutual Friend (2), Miss M. Blenkiron, grand; Mr. C. H. Payne, Mrs. H. Weeks, Duke of York, Oceana, Lady Ridgway, G. C. Schwabe, and Australie. Second, Mr. Alderman; third, Mr. Findlay, gardener to H. J. Jones, Esq., Badsworth. For twelve Japanese Mr. Vaughan was first, Mr. Aldermau second, Mr. Ketchil third.

For the challenge cup for twenty-four cut blooms, open to exhibitors residing within a radius of eight miles from Barnsley, Mr. Dunn for the second time in succession was placed first for neat flowers—incurved, C. H. Curtis (2), Mrs. R. C. Kingston, Princess of Wales, Golden Empress (2), Robt. Petfield, Empress of India, Bonnie Dundee (2), J. Agate; Japanese, Lady Hanham, Madame Carnot, Etoile de Lyon, Rose Wynne, Chas. Davis, Duchess of Wellington, Van den Heede, Florence Davis, and Mrs. Harman Payne. Second, Mr. F. Weatherall, Barnsley.

In the Chrysanthemum group class Mr. Weatherall was first with a neat and effective arrangement. Mr. E. Wilson, gardener to Guy Senior, Esq., second. Mr. Winter third. For a group of miscellaneous plants Mr. S. Ballanger, gardener to — Fox, Esq., was first. Mr. Shaw, Barnsley, second.

BOLTON.—November 18th and 19th.

The Committee of the above Society is to be congratulated on the excellent show opened in the Town Hall—a show fit to rank for quality with anything seen this year. Messrs. Smith, Hicks and Hughes have striven hard for many years to make their work known, and Bolton people have a treat which cannot fail to please the most exacting.

The first class was for twelve incurved and twelve Japanese, distinct. A silver challenge cup, value 10 guineas, to be won two years in succession, with good money contribution, was the first prize, and here a comparatively recent exhibitor, Mr. W. Whittle, gardener to R. G. Allen, Esq., Aigburth, Liverpool, who, on the previous Saturday, won the 20-guinea cup at Grassendale, was awarded the coveted honour with a fine stand, the Japs being really excellent. The varieties were Mons. Panckoucke, Graphic, Phœbus, Chas. Davis, Silver King, Duke of York, Mdlle. Thérèse Rey, R. Dean, Lady Ridgway, Mdlle. M. A. de Galbert, G. C. Schwabe, Edith Tabor, Queen of England, F. W. Flight, Lord Alcester, W. Tunnington, J. Agate, Major Bonnaffon, Mr. J. Kearn, C. H. Curtis, Mrs. R. C. Kingston, R. Petfield, Harold Wells, and Lucy Kendall. The second went to Mr. Bellis, gardener to Sir C. H. Rouse, Ludlow, with a very bright stand. Mr. Bible, gardener to Lord Trevor, Ruabon, was a close third, Japs being splendid, and Mr. Kirkman, gardener to J. Stanning, Esq., Leyland, received an extra prize.

Mr. Bellis won for twenty-four Japs with a capital stand of International, Van den Heede, Edith Tabor, G. C. Schwabe, V. Morel, J. Seward, Ad. Chatin, Rd. Dean, Mrs. C. Blick, Phœbus, Mrs. Dr. Ward, C. W. Richardson, M. Panckoucke, Jules Ferry, Miss Rita Schroeter, Sunstone, A. G. Hubbuck, Madame Carnot, Australian Gold, Mrs. G. Carpenter, Bellem, Mons. C. Molin, Duchess of York, and Mrs. F. A. Bevan. Mr. P. Blair, gardener to the Duke of Sutherland, Trentham, was placed second; and Mr. Bible third. Mr. Bellis won for twelve incurved, grand being W. Tunnington, Major Bonnaffon, and Perle Dauphonoise.

In the class for six incurved and six Japanese, none of the exhibitors complied with the schedule; but the Committee was generous enough to award extra prizes. The prizes for nine incurved and nine Japanese went to Mr. Eastwood, gardener to Mrs. Chas. Taylor; and Mr. Callow, gardener to Jno. Harwood, Esq., both exhibits being somewhat below the average as regards quality.

The local classes showed a very great improvement in quality, Mr. Eastwood winning the silver cup for twelve incurved and twelve Japanese with good blooms of M. Chenon de Leché, Mutual Friend, Mons. C. Molin, Mdlle. Thérèse Rey, C. H. Curtis, J. Agate, Mrs. R. C. Kingston, and Violet Tomlin. Mr. J. Wainwright, gardener to Miss Cross, was a capital second. Mr. J. Callow won with a very creditable twelve incurved, and Mr. Eastwood for twelve Japanese. Other smaller classes were won by Messrs. T. Hindle, W. Crawshaw, W. Eckersley, H. Shone, and Howarth.

The miscellaneous groups arranged for effect were particularly striking and handsome, Mr. H. Shone, gardener to J. W. Makant, Esq., Bolton, being awarded chief honours. The second prize went to Messrs. L. & G. Bury, Darwen, with a bold and novel idea worthy of much consideration. For a group of Chrysanthemums with Ferns for effect Mr. J. Abbatt, gardener to James Musgrave, Esq., took first; and Mr. Geo. Pawson, gardener to Jno. Heywood, Esq., second.

Plants were a very great advance, and were represented by many classes to suit all growers. The principal prizewinners were Mr. H. Shone; Mr. Hicks, gardener to Mrs. Haslam; Mr. James Callow; Mr. J. Barclay, gardener to Thomas Walker, Esq., J.P.; and Mr. W. Eckersley, and for a basket for effect Mr. Abbatt.

BURY ST. EDMUNDS.—November 18th and 19th.

The annual show, held in the Corn Exchange, Bury St. Edmunds, on the above dates, was a decided success, thanks in a great measure to the efforts of the courteous and energetic Hon. Secretary, Mr. G. A. Manning, who, we regret to learn, is severing his connection with the Society. A better or more popular Secretary will be difficult to find, and the best wishes of everyone connected with the show will be with Mr. Manning in his new sphere of action, for we hear he is leaving the neighbourhood of the fine old Suffolk town.

Groups were of excellent material, well arranged as to colour, but of

hard and circular outline as usual. Mr. Burrell of Westley Hall (gardener, Mr. A. Bishop) led both in the Chrysanthemum group and that of miscellaneous plants, being followed in the former by Mr. G. A. Partridge and Mr. Gibson Cullum, in the latter by Mr. Johnstone and Mr. Partridge in the order named.

The class for thirty-six Japanese, distinct, was closely competed for Mr. Berners, Woolverstone Park, Ipswich, repeating his success of last year by taking first position with a very even stand of medium sized, well-finished flowers. Mr. Notcutt of Ipswich was an extremely close second. In the winning stand the varieties shown were Australie, H. H. Spencer, Mrs. C. Blick, Phœbus, Violetta, Thos. Wilkins, International, Niveus, Eda Prass, Simplicity, Mrs. Ormstead, Snowdon, Graphic, Amiral Avellan, M. de la Rochetiere, Mons. Panckoucke, Duke of York, Madda, M. de Guilbert, Etoile de Lyon, L'Isere, M. E. Capitant, Rose Wynne, Charles Davis, Madame G. Henri, Silver King, Madame Thérèse Rey, Mrs. F. Bevan, J. Seward, Mons. Gaymer, Triomphe de la Laurente, Mrs. G. Carpenter, Western King, Colonel T. C. Bourne, M. Carnot, G. C. Schwabe, and Mutual Friend.

For twenty-four Japanese Lord de Ramsey (gardener, Mr. Musk) had a heavy and good stand of the leading varieties, including a grand bloom of Mrs. W. H. Lees. Mr. Berners was second, and Mr. A. F. Hills of Woodford third. Much the same order followed in the twelve and sixes, while Lord de Ramsey had the best Japanese bloom in the show, a splendid flower of Viviand Morel. Mr. J. Watts was almost the only exhibitor in the incurved classes, but in each case the flowers were good, as shown by the fact that the premier incurved bloom was in his stand, a superb Chas. Curtis.

In the decorative class E. Dresden, Esq., of Livermere Park (gardener, Mr. Tallack), won from Mr. Notcutt, the winning stand containing the beautiful single Mary Anderson. The same exhibitor was first for the best arranged basket and best arrangement of autumn foliage.

The table decorations were very pretty, but nothing unusual was shown. The first prize hand bouquet from Messrs. Frewer of Stowmarket, was well made and contained many choice Orchids and other flowers now in season. Mr. Henley, gardener to Mr. E. J. Johnstone of Rougham Hall, put up a pretty ladies' spray, composed of Dendrobiums, Phalænopsis. Ferns and foliage plants, table plants, fruit and vegetables were all well shown, principally by local exhibitors. The fine collection of the latter, shown by Mr. Rogers, gardener to Lord Rendlesham, being of quite exceptional merit, as it must have been to defeat the stand put up by Mr. Tallack of Livermere Gardens.

Trained plants were a marked improvement on last year, Mr. Bishop, gardener to Mr. Burrell of Westley, showing in the highest form. In the second division the honour for six of one kind of Japanese fell to the same exhibitor for a fine stand of Phœbus, while incurved blossoms were finely shown by Mr. B. Booth, his stand of six Charles Curtis being especially good. Mr. R. Davidson, gardener to the Earl of Cadogan, Culford, put up a large and brilliant group, consisting chiefly of Chrysanthemums, some large bunches of Grapes, and other fruit, and some immense Gourds in variety. The amateurs' division had the classes well filled up, but space does not admit of any further reference.

EDINBURGH.—NOVEMBER 18TH, 19TH, AND 20TH.

NEVER before has the Waverley Market been so severely taxed to hold the exhibits entered for the annual autumn exhibition of the Scottish Horticultural Association as upon the occasion noted. Many fine honorary exhibits from local and other nurserymen had to be refused, so keen were exhibitors in various parts of the country to participate in this famed show. This great increase was, no doubt, traceable to the special nature of the prize schedule issued. The executive had determined to celebrate the Diamond Jubilee of her Majesty in a fitting manner, and thus offered prizes the like of which had never been seen before at any Chrysanthemum show. £150 was the sum set apart for this special class. This was no doubt a bold step, but the results justified the venture, for one of the grandest shows was to be found here that has even been seen. Not only was the show a success in a horticultural point of view, but it was financially so also. In a great measure this was due to the fact that the Council announced that any surplus obtained this year should be devoted to charitable institutions in the city. We are pleased to say that there is a possibility of at least £250 being the nett result for this laudable object. No less than £744 was taken at the gates on the two first days. This is indeed a handsome sum, irrespective of the income from other sources. No less than 40,000 persons visited the show on the two days named. An executive who is bold enough to engage the Grenadier Guards band for the three days deserves well for its spirit of venture. The Committee know from experience that good music is appreciated, and act accordingly.

The Scottish Horticultural Association is managed by a strong executive Committee, divided into sub-committees, all of which work harmoniously. The President for the year is Mr. Dodd, Stoney Bank, Musselburgh. Mr. R. W. E. Murray, Mr. A. Milne, and Mr. Grieve are the conveners of the various Committees. The important post of Treasurer has long been held by Mr. A. Mackenzie, Warriston Nurseries, and filled, too, with credit to all concerned. Mr. Robert Laird is Secretary, and under his able guidance the whole of the machinery runs smoothly. Mr. J. H. Murray is the hardworking, indefatigable Assistant Secretary, and by his geniality of manner and indomitable perseverance, valuable aid is rendered.

In the exhibition itself the chief interest centred in the cut bloom classes; the principal one was the Jubilee class previously noted. The conditions were: Twenty vases of Chrysanthemums in twenty varieties, three blooms of each, Chrysanthemum foliage only to be used. The first prize was £50 and the Victorian gold medal of the Society; second £30 and a silver medal; £15 and a medal for third, with £10, £8, £7, and medals for the three remaining prizes.

Nine competed, the result being the finest exhibit of its kind ever seen. Mr. A. Haggart, Moor Park, Ludlow, was the fortunate winner of the premier prize. Not one inferior bloom did this stand contain, all were of huge size, grand quality, and beautifully staged. The varieties were Western King, Charles Davis, Graphic, M. Gruyer, Simplicity, J. Bidencope, M. Panckoucke, Madame Ad. Chatin, Mrs. Herman Kloss, Edith Tabor, Lady Ridgway, Phœbus, Etoile de Lyon, Niveus, Mrs. W. H. Lees, Mons. Chenon de Leché, M. Taillandier, Mrs. Weeks, Viviand Morel, and R. Dean. Mr. W. H. Lees, gardener to F. A. Bevan, Esq., Trent Park, New Barnet, was a good second. The blooms in this exhibit were a trifle less even in size; they were beautifully fresh and well staged. Especially good were Madame Carnot, Mons. Chenon de Leché, Western King, Mrs. Weeks, Phœbus, C. Davis, and Mutual Friend. Mr. McHattie, gardener to Duke of Wellington, Strathfieldsaye, Berks, was an extremely close third. Many grand examples of cultural skill were apparent in this exhibit. Mr. P. Waterer, Fawkham, Kent, was fourth, and when we remember that he is truly an amateur, this exhibit was indeed a success. Mr. P. Blair, gardener to Duke of Sutherland, Trentham Park, was fifth; and Mr. Divers, gardener to the Duke of Rutland, Belvoir Castle, sixth.

Ordinarily the class for forty-eight Japanese, distinct, for which the City of Edinburgh cup, value £25, is offered, is the leading class. This time the handsome prize was also secured by Mr. Haggart with a grand exhibit. Mons. Chenon de Leché, Etoile de Lyon, Mrs. C. H. Payne, Pride of Madford, C. Davis, James Bidencope, Madame Carnot, Moor Park, Edith Tabor, Mrs. W. H. Lees, Mrs. Maling Grant, D. Seward, M. Blenkiron, Madame Marius Ricoud, Madame Ad. Moulin, L. Snnderbruek, Simplicity, M. C. Molin, J. Seward, A. H. Wood, Phœbus, Mdlle. Thérèse Rey, Niveus, Duke of York, Australian Gold, Lady Ridgway, Mrs. Weeks, Mdlle. M. A. de Galbert, Western King, G. C. Schwabe, Mrs. Herman Kloss, R. Dean, Australie, Mrs. F. A. Bevan, E. Molyneux, Miss D. Shea, C. W. Richardson, Oceana, M. Montigny, International, Modesto, Van den Heede, Viviand Morel, Mutual Friend, Rose Wynne, and Mrs. B. Ironside were the varieties. Mr. J. Beisant, Castle Huntly, Longforgan, was a capital second, staging many magnificent blooms. Mr. J. Fordyce, Bonally Tower, was third with smaller and uneven blooms. Mr. D. Niccoll, Rossie, third.

Eight entered for the Scottish challenge cup for twenty-four blooms, distinct. Mr. J. Beisant won this coveted trophy somewhat easily with really fine specimens of Chenon de Leché, Mrs. W. H. Lees, Mutual Friend, Simplicity, and others. The second prize fell to Mr. T. Lunt, Keir Gardens, Dunblane, for a good stand. Mr. J. Day, Galloway House, Garlieston, third. Twelve Japanese was a strong class; eleven staged. The premier award went to Mr. T. Lunt for a good stand of well-coloured blooms. Mr. J. Martin, Corndean Hall, Winchcombe, second. Mr. W. Nicholson, Condon Castle, Dollar, third. Six Japanese were staged by seventeen competitors. Mr. G. Chaplin won first with a good lot. Mr. D. Mackay, Cardross Villa, Cardross, second. Mr. G. H. Pearson, Viewforth, Stirling, third. Col. Chase, in splendid condition, won for Mr. Lunt premier award in the class for six Japanese, one variety. Mr. Haggart second with a golden bronze incurved seedling named Moor Park. Mr. J. Martin followed with Simplicity.

Prizes were offered for special varieties, six blooms of each. Australian Gold was best shown by Mr. W. Galloway, Ferneyside, Liberton. Mr. J. Martin, second. Mr. R. Addison, Blackhouse, Skelmorlie, third, all staging well. Charles Davis was much best staged by the last named, really well coloured examples of this popular variety. Mr. J. Foster, Wellwood Park, second. Mr. D. Buchannan had the best half dozen Edwin Molyneux, richly coloured shapely specimens, amongst eleven stands. Duchess of York was much better shown here than elsewhere this season, Mr. R. Addison winning the premier award. Brilliantly coloured blooms of Edith Tabor won for Mr. J. Day the leading place for this variety. Mr. J. Bird, Raehills, Lockerbie, staged the best Emily Silsbury. Mr. J. Bird had President Borel, and Mr. Addison Viviand Morel. For twelve Japanese, in three varieties, there was stiff competition. Mr. Lunt easily won with creditable examples of Duchess of York, Lady Byron, and Mutual Friend. Mr. T. Gordon, Ewanfield, Ayr, second.

In addition to the Jubilee class for Chrysanthemums in vases six other classes were provided for this means of staging them. The leading class was that for twelve vases, three blooms in each, open to Scotland only. The leading prize was £7 and the gold medal of the Association. Mr. R. W. E. Murray, Blackford House, Edinburgh, just won the coveted award with grandly developed blooms neatly and effectively staged. Mrs. W. H. Lees, Chenon de Leché, Charles Davis, Edith Tabor, and Commandant Blussett were especially noticeable. Mr. D. Niccoll second with good blooms, but not so well staged. Mr. J. Foster, Wellwood Park, Selkirk, was third.

For four vases, of six blooms each, Mr. Foster won the premier award amongst nine other competitors with blooms of capital quality. Mr. D. Mackay second. Mr. Murray third. Mdlle. M. Hoste, in faultless condition, won for the last named the leading place for twelve blooms in one vase. Mr. Foster, with Mutual Friend, followed closely.

Single flowered varieties were encouraged. Mr. T. M. Whitehead won first prize for a capital exhibit of mixed varieties in one huge vase, and well they looked in their association of various colours. Messrs. J. Holmes and P. Hunt were second and third respectively. Decorative varieties made a good display in vases of three, distinct, the blooms to

be shown in undisbudded clusters, Mr. J. Waldie won premier position with dark and yellow varieties, in free masses. Mr. T. Gordon second.

Incurved Chrysanthemums are, as a rule, only moderately exhibited in Scotland. The show in question was no exception in this respect. The principal class was for twenty-four distinct varieties. Mr. J. Martin won the premier award with fair examples of leading varieties. Mr. J. McHattie second, Mr. P. Blair third. For twelve varieties the exhibits were an improvement on the former class. Mr. Lees won easily with medium sized examples beautifully staged. Messrs. Martin and Day secured the remaining prizes in the order named. J. Agate was the variety staged in the class for six, any one sort, Mr. J. Henderson being the prizewinner. Prizes were offered for six blooms C. H. Curtis. Here an improvement was manifest, Mr. Martin, with large, fully developed blooms, winning easily. The last named secured the award for the premier incurved bloom in the show with a fairly good one of C. H. Curtis. In the Japanese section Mr. Haggart won a like position with a grandly developed bloom of Mrs. W. H. Lees.

Chrysanthemums arranged in vases or epergnes, with any kind of foliage, made an effective display, Miss Todd, Edinburgh, winning somewhat easily.

Plants are not well cultivated by Scottish growers of Chrysanthemums, though they were largely staged. The plants are large enough but the blooms lack quality. The principal class was for six, distinct. Mr. D. Cavannagh, St. Edwards, Murrayfield, won easily with freely flowered plants, much too tall to display their blooms in a satisfactory manner; Mr. Joseph Holmes, Winton Castle, Pencaitland, second. Mr. Cavannagh won also for four specimens. Pompons were freely flowered, but the blooms lacked quality. The best of four specimens came from Mr. P. Hunt, Coltbridge Hall, Murrayfield.

Groups of Chrysanthemums arranged in circular form were of moderate quality. Mr. W. Jobson, first; Mr. J. Downie, second.

Vegetables are generally a feature at the Edinburgh shows, this proving no exception to the rule. Amongst the most successful exhibitors were Messrs. W. Harper, Tullibelton House, Perth; A. E. Cameron; J. W. Scarlett, Inveresk; W. Smith, Newtonairds; G. Ormiston; and T. Galloway, Kirk Hill Farm, Broxburn. Fruit, as usual, was staged extensively and well. Space, however, forbids more than a note of the fact that Messrs. D. Airdrie, Larbert House; J. Paterson, Benochie Park, Kirkcaldy; J. Leslie, Piteullen House, Perth; T. Lunt; McIntyre, The Glen, Innerleithen; and J. Day were successful competitors.

Non-competing collections made an interesting display. Mr. H. J. Jones secured the Society's gold medal for a grand exhibit of Chrysanthemums, Begonia Gloire de Lorraine, Ferns, and Palms. No less than 350 cut blooms were staged. First-class certificates were awarded to Chrysanthemums Western King, Chebagne, and Madame Laurence Zédé in this collection. Mr. W. Wells, Earlswood Nurseries, Redhill, Surrey, contributed several dozen Chrysanthemum cut blooms; certificates were given to G. J. Warren, Julia Searamanga, and Georgina Pitcher. Messrs. Dobbie & Co., Rothesay, had Chrysanthemums in quantity. Mr. T. Fortune, 17, Queen's Ferry Street, had a charming exhibit of bouquets.

The banquet, held in the Royal British Hotel on the opening day, was a brilliant affair, over seventy sitting down. Several members of the National Chrysanthemum Society were present, including Mr. T. W. Sanders, Mr. Witty, and Mr. Orchard. Mr. Ross, Hon. Secretary of the R.H.S., Ireland, was also present, the chair being worthily occupied by Mr. Todd, the President.

Mr. Robert Laird, whose portrait we have pleasure in publishing (fig. 76), is the third son of the late Mr. R. B. Laird, and was born in 1859. Mr. Robert Laird manages the office and seed department at 17, Frederick Street, while his brother, Mr. David Laird, attends to the sixty acres of nurseries where the raising of seedling forest trees is particularly well carried on. Mr. R. Laird is a typical Scot, his commanding presence, jovial good humour, and unbounded heartiness entirely fit him for the position he so worthily occupies, whether as a partner in the nursery business, or as the Secretary of the Scottish Horticultural Association, a post which he has filled for the last seven years. It is in no sense of flattery when we say that it is doubtful if another society in the United Kingdom has made such rapid progress as this since he has filled his present post. Members of the Scottish Association enjoy many privileges. The annual subscription is only 2s. 6d., this small sum entitling them to attendance at the twelve monthly meetings held during the year, as well as to a free pass on the three days of the autumn exhibition. The photograph was by Moir & Halkett, Portobello.

CHESTER.

THE annual exhibition promoted by the Chester Paxton Society is every year becoming more successful. The seventh show, says a local contemporary, was a decided advance both as regards the number of entries and the quality of the exhibits. The Assembly Room of the Town Hall, in which the exhibition was held, was taken full advantage of, the arrangement of the Chrysanthemums and the fruit in a slightly different manner to that which obtained last year producing a beautiful effect. Among the exhibits in the fruit section was one from the Duke of Westminster (Mr. Barnes, gardener), who sent a meritorious collection of sixty dishes of Pears and Apples, which had been grown in the open in the Eaton gardens. Next to this the most conspicuous collection was that of Mr. John Watkins of Withington, Hereford, who was represented by fifty dishes of Apples. It may be here mentioned that Messrs. Dicksons', Limited, again occupied the whole length of the lower end of the room with an imposing and miscellaneous exhibit of flowers and fruits. The whole arrangement was one that had not yet been equalled at any previous show held in Chester, and contained excellently grown specimens of Chrysanthemums, Cyclamens, Carnations, and Palms, the front being finished off by luscious looking fruit from the Upton and Newton Nurseries.

A new departure has been made in the Chrysanthemum classes, this being the arrangement of the groups of plants in the centre of the room instead of at the sides. The change adds greatly to the general attractiveness of the whole exhibition. The entries, oddly enough, were those of exactly the same five exhibitors at the last show, when Mr. J. Wynne Ffoulkes, Old Northgate House, took first prize. Mr. Wynne Ffoulkes repeated his success at the present show, the other four groups, however, being also of excellent merit. A new feature in the Chrysanthemum classes was that for an epergne filled with such of those flowers as are suitable for table decoration. Nine competitors have entered the lists in this class, and although Mr. Edge of Hoole Bank was not perhaps so advantageously placed as the others, he managed to carry off the first prize in the face of strong opposition. The class for the six best plants of the Japanese varieties had not induced quite so large a number of entries as could be wished, but the quality is very good, the first prize blooms from Mollington Hall (Mr. Worker) being almost perfect.

For a group of Chrysanthemums arranged for effect:—First, J. Wynne Ffoulkes, Esq. Second, Mrs. R. S. Hudson, Bache Hall. Third, E. Dixon, Esq., Littleton Hall. Fourth, Mrs. Potts, Hoole Hall. Six plants, Japanese or incurved:—First, Captain Fielden. Second, Mrs. Logan. Third, Miss A. Wynne, Waverton. Four plants, single varieties:—First, C. Wigg, Esq. In the open class for twelve single trusses naturally grown Chrysanthemums:—First, C. Threlfall, Esq. Second, Mrs. Townsend Ince. Third, J. Tomkinson, Esq. Twelve cut blooms:—First, T. Brocklebank, Esq., Heswall. Second, J. Tomkinson, Esq. Third, C. Threlfall, Esq. Six cut blooms, Japanese:—Second, Colonel Read, Dee Banks. Six cut incurved blooms:—First, Mrs. Ince and J. Mosford, Esq. Second, Captain Fielder. Third, J. Tomkinson, Esq. Three cut Japanese blooms:—First, J. Wynne Ffoulkes, Esq. Second, C. Wigg, Esq. Third, Hon. H. C. Gore, Malpas. Three cut incurved blooms:—First, C. Wigg, Esq. Second, Hon. H. C. Gore. Best arranged box of cut single Chrysanthemums:—First, J. Tomkinson, Esq. Second, Mrs. Townsend Ince. Third, J. Mosford, Esq. Best arranged epergne of Chrysanthemums:—First, C. Wigg, Esq. Second, J. Tomkinson, Esq. Third, T. Brocklebank, Esq. Premier blooms, best incurved:—C. Threlfall, Esq. Best Japanese:—T. Brocklebank, Esq.

FIG. 76.—MR. ROBERT LAIRD.

HULL.—NOVEMBER 17TH AND 18TH.

MANY magnificent autumn exhibitions have been held under the auspices of the Hull Chrysanthemum Society in years past, but it is doubtful if one has ever been held before that exceeded the present, either in extent or quality. Groups have long been famous here for their magnificence; this year they were quite equal to any that has previously been seen. Cut blooms in some sections were a distinct advance, notably Anemone, Reflexed, and Pompons. Plants were a decided improvement on recent years. Table decorations, by their number and the taste may be described as progressive. The management here, always of the best, was quite up to the high standard attained. Messrs. Harland

and Dixon are to be once more congratulated on the magnificence of their fourteenth annual show.

Cut blooms were numerous and good, the schedule of prizes being extensive and varied. The principal classes were those for twenty-four incurved and for the same number of Japanese. In the first named six competed, making a fine display. The premier award fell to Mr. C. J. Salter, gardener to T. B. Haywood, Esq., Woodhatch, Reigate, for a uniform collection of medium sized well-finished blooms of the following varieties :—C. H. Curtis (2), Lord Alcester (2), Mrs. R. C. Kingston (2), Mrs. Gardiner (2), J Agate (2), Duchess of Fife, Golden Queen of England, Madame Ferlat, Major Bonnaffon, Miss D. Foster, G. Haigh, Mrs. N. Davis, Mr. J. Kearn, Barbara, H. Shoesmith, Lady Dorothy, Mrs. Heales, Violet Tomlin, and Jeanne d'Arc. Mr. J. P. Leadbetter, gardener to A. Wilson, Esq., Tranby Croft, Hull, was second with blooms a trifle smaller ; and Mr. W. Mease, gardener to A. Tate, Esq., Downside, Leatherhead, third.

Mr. Mease was an easy first in the Japanese class, with grandly developed blooms of Madame Carnot, Phœbus, Etoile de Lyon, Baron Ad. Rothschild, Viviand Morel, Mrs. Weeks, Mrs. G. Carpenter, G. J. Warren, Julia Scaramanga, Mrs. J. Lewis, E. Molyneux, Mutual Friend, Mrs. Bernard, Mons. Chenon de Lecké, Mdlle. M. A. de Galbert, M. Ricoud, Mrs. C. Blick, Miss Storer, R. Owen, V. Hambleden, M. Gruyer, Simplicity, M. de la Rocheterie, and Mrs. W. H. Lees. Mr. Salter was a good second ; and Mr. W. Backhouse, The Bar, Beverley, third. For six Japanese, any one variety, Mr. Salter won with fine blooms of Chenon de Lecké. Mr. R. Walker, gardener to Col. Stacey Clitheroe, Hotham Hall, Brough, second with the same variety ; and Mr. C. Jennings, gardener to W. Maw, Esq., Barrow-on-Humber, third with Phœbus.

For twelve Anemone flowered, Mr. Salter staged grandly developed examples of W. W. Astor, Mrs. H. Gardiner, Sir W. Raleigh, John Bunyan, Robin Adair, Descartes, Gluck, and Delaware, and secured the premier award. Mr. W. Mason, gardener to Col. A. K. Dibb, Kirk Ella, won second place with a fine stand. Mr. G. E. Smith, Floral Cottage, Hull, was a close third. Mr. Salter also won premier place in the class for twelve reflexed, with blooms leaving little to be desired. Mr. G. Picker, gardener to F. R. Pease, Esq., Hesslewood, Hull, second ; Mr. R. Walker, third. Mr. Salter also led the way with Pompons, and was followed by Mr. R. Walker, and Mr. J. W. Bearpark, Thornton Street, Hull, third. Mr. Waterhouse, gardener to J. N. Owbridge, Esq., Cheny Garth, Cottingham, staged the best singles in twelve bunches ; Mr. Sinclair, gardener to B. Mackrill, Esq., Thwaite, Cottingham, second.

In the district class for eighteen incurved blooms Mr. V. Waterhouse was first with good specimens in all respects. Mr. G. Wilson, gardener to Sir J. Reekitt, Swanland Manor, Hull, a good second. For twelve incurved Mr. R. Walker won first place with neat fresh blooms. Mr. Thos. Down, gardener to H. S. Constable, Esq., Wassand, Hull, second with a bright stand of blooms. In the district class for eighteen Japanese there was brisk competition, and a good display. Mr. C. Jennings was first with a grand exhibit of popular varieties. Mr. R. Walker second. Mr. H. Thompson, gardener to C. J. Ringrose, Esq., The Grange, Cottingham, third. No less than eight competed in the class for twelve Japanese. With a very fine exhibit Mr Thomas Down, gardener to H. S. Constable, Esq., Wassand, Hull, won first place with extra good blooms. Amateurs staged creditable examples in the classes set apart for them.

An interesting class was that for two vases, each containing six blooms, one variety, Japanese arranged for effect, with any kind of foliage. Mr. F. Mason, gardener to Alexander Smith Esq., Woodleigh, Hessle, won with creditable examples of Niveus, and Thos. Wilkins, associated pleasingly with Asparagus plumosa. For two baskets or vases, each containing twelve blooms, distinct, one of Japanese and the other incurved, arranged for effect with any kind of cut foliage, Mr. G. Wilson was first, and Mr. Waterhouse a good second.

Groups are here always pleasing, and of the finest quality. This year they were no exception. A silver challenge cup with £6 is the premier prize, therefore it is not to be wondered at that there is invariably keen competition. The conditions are thus :—A group of Chrysanthemums, interspersed with foliage plants, arranged for effect in a space of 100 square feet. Four competed. The first prize was awarded to a group belonging to the Hull Corporation ; but as this cannot take a prize the honour fell to the second in merit, that arranged by Mr. G. Wilson. The former received the certificate of merit given by the N.C.S. Both were grand groups. The quality of the Chrysanthemum blooms in the Corporation group, combined with a pleasing arrangement at the back, won for it the place of honour. Mr. G. Jarvis, gardener to Mrs. Whitaker, Cliffe House, Hessle, was a creditable second ; and Mr. E. Poulsen, The Nurseries, Hull Road, Cottingham, third. Miscellaneous plants, arranged for effect in a space of 100 square feet, made an imposing display down the centre of the principal room. Mr. G. Wilson easily won the premier award.

An interesting class was that for a decorated drawing-room mirror or panel group of Chrysanthemum plants, interspersed with foliage plants arranged for effect, in a space of 9 square feet. No less than seven entries were received. The first prize was awarded to Mr. J. P. Leadbetter for a pleasing arrangement. Mr. G. Wilson was a good second, and Mr. G. S. Coates was third.

Plants, as previously stated, were an improvement upon recent years. For three trained specimens, Mr. H. Thompson, gardener to C. J. Ringrose, Esq., J.P., The Grange, Cottingham, staged freely flowered specimens, and was awarded the premier position ; Mr. W. Mason second. Mr. Thompson also won first honours for three standards, freely flowered ; Mr. Mason second. A class is provided for "cut-backs," quality of bloom, with dwarfness and good foliage, to be the chief points of merit. Mr. Waterhouse won with good plants ; Mr. E. West, Cottingham, being second. Bush grown plants were well represented by Mr. R. Smith, gardener to H. Sawman, Esq., Walkergate House, Beverley, who secured the premier position. Mr. R. Theisk, Grovehill Road, Beverley, second. The last named staged the best trained specimens in three varieties, as also did he in the leading amateur classes, and really good examples they were.

Table decorations, open to ladies only, have long been a feature of the Hull shows, a special room being set apart for them. The prineipal class was for a dessert table 8 feet by 4 feet, completely laid for six persons. Chrysanthemums, with any kind of foliage or grasses, to be used in its decoration. Six entered, making a grand display. Mrs. F. S. Wheeler, Chepstow, Prince's Avenue, Hull, was first with bronze and yellow Chrysanthemums and Ferns, lightly disposed. Miss Kirk, Owstwick, Benstick, Hull, second. Mrs. Arthur Dibb, Kirk Ella, Hull, third. Mrs. F. S. Wheeler also had the premier award for the most tasteful arrangement of miscellaneous flowers, Chrysanthemums, foliage and grasses. Miss Ethel G. Fisher, Willerby Hall, Hull, was second. Miss Pudsey, 6, Crown Terrace, Anlaby Road, Hull, had the best epergne, decorated with Chrysanthemums and any kind of foliage, grasses, or berries.

Messrs. W. Cutbush & Sons, Highgate, had a pleasing exhibit of Begonia Gloire de Lorraine and Chrysanthemums, which was a source of attraction to the numerous visitors.

THE HARTLEPOOLS.—NOVEMBER 19TH AND 20TH.

THIS year's exhibition was held in the new public hall of the Technical College, West Hartlepool, and, as a local show, it reflects great credit upon promoters and the exhibitors. It was well supported by the residents of both the Hartlepools.

In the cut bloom classes much interest centred in the challenge cup for twenty-four blooms distinct, twelve incurved, twelve Japanese. There were four exhibitors, and the competition was very close, the prize eventually falling to Mr. George Harvey, who, having secured premier position for the third time in succession, the cup becomes his property. The stand was made up of very neat and compact and fresh blooms of—Incurved : C. H. Curtis, Princess of Wales, Geo. Haigh, J. Agate, Mrs. Heale, Miss M. A. Haggas, Violet Tomlin, Jeanne d'Arc, Prince Alfred, Lucy Kendall, J. Salter, and Nil Desperandum. Japanese. Graphic, Chas. Davis, Viviand Morel, Edith Tabor, E. Molyneux, Commandant Blusset, Mutual Friend, Mons. C. Molin, Oceana, Australie, Pride of Exmouth, and Madame Gustave Henri (very fine, and premier Japanese bloom of the show). Second, Mr. D. Reid. Third, Mr. T. Smith. Fourth, Mr. A. Taylor.

In the class for twelve Japanese and twelve incurved Mr. Harvey was again first with the same varieties as in the cup class ; second, Mr. T. Smith ; third, Mr. A. Taylor. Mr. Harvey was also first for twelve incurved ; second, Mr. A. Taylor ; third, Mr. D. Reid. Twelve Japanese. —First, Mr. Harvey ; second, Mr. Stokill ; third, Mr. A. Taylor.

Groups of Chrysanthemums were very effective, all the exhibitors showing fine fresh blooms and well arranged. First, Mr. D. Reid ; second, Mr. T. Smith ; third, Mr. G. Harvey ; fourth, Mr. A. Taylor. Group of miscellaneous plants.—First, Mr. Pattison ; second, Mr. Wharton. Vases of Chrysanthemums, baskets, bouquets, and epergnes were very effective, the prizes falling to Messrs. Taylor, Pattison, Barker, Huyton and Wharton.

[Owing to late arrival this, with several other shows, has had to be considerably abridged.]

SWEET PEAS.

SICILY, a large island in the Mediterranean, a few miles from the coast of Italy, enjoys the honour of being the native home of the Sweet Pea (Lathyrus odoratus), whence it was introduced into England in 1700 —nearly 200 years ago. There is some uncertainty as to its original colour, some authorities asserting that more than one variety of the species came over. Philip Miller, however, in his "Gardeners' Dictionary," mentions it in 1731 as the "broad-leaved, soft, hairy chickling, with large and very beautiful purple, sweet-smelling flowers, commonly called sweet-scented Peas." Chickling is an old name formerly applied to the Pea or Vetch. This must be considered good authority, and it gives us, as far as I can learn, the first reliable date of its existence after its introduction. I think purple or bluish-purple was probably its original colour, as there is a tendency to revert to this more than to any other shade.

I have a copy of "Mawe's Gardener," published in 1800, in which annuals are ranked in three sections, and Sweet Peas are placed in the third, or lowest class, containing the hardiest and commonest plants, so that its position at this date could not have been a very high one. The work mentions five varieties—the Purple, the Black Purple, White, Scarlet, and Painted Lady. This shows the position of the Sweet Pea 100 years after its introduction, or its centenary. Its bicentenary will soon be here, and, as it has become the custom in modern times to commemorate these periods in a favourite flower, we shall no doubt in 1900 show our due appreciation of this most beautiful of all annuals.

The variety of colour in 1800 was very good, seeing that there were a white, scarlet, purple, and a bicolor called Painted Lady, and it is remarkable that the last named variety has retained its position up to the present day. In Page's "Prodromus," published in 1817, a striped variety

is mentioned, bringing the number up to six. In 1842 a list was published which still contained only the six varieties, so that for twenty-five years there was no addition to the number. In 1860 nine varieties are recorded in the leading catalogues. In 1865 what are known as the Invincible strains began. First the scarlet, then purples, white, striped, and perhaps the most beautiful of all, the Carmine Invincible. These were undoubted improvements on the old varieties, and are still grown. Fairy Queen, probably a sport from Painted Lady, now became known, and was soon followed by Crown Princess, Adonis, Butterfly, Princess Beatrice, Violet Queen, Princess of Wales, and a few others.

About the year 1877 the great improvement in Sweet Peas began. Mr. Henry Eckford, at that time gardener to Dr. Sankey of Boreatton Park, in Shropshire, and who has since established a business at Wem, has done more than any other man to popularise this beautiful flower, by bringing out a great number of charming varieties much improved in form, size, and constitution, and of almost every shade of colour, so that Eckford's name has become a household word in connection with Sweet Peas.

There must be many persons who have visited Messrs. Sutton & Sons' seed trial grounds, and seen their immense collection of Sweet Peas, brought together from all sources, not only those of British origin, but from continental and American raisers, and numbering in 1896, I believe, not far short of 150 varieties. To me, as I am sure it must have been to many others, it was intensely interesting.

The question as to what constitutes a properly formed Sweet Pea, or, in other words, should we have a perfect ideal flower to work up to? has been the subject of some controversy. This really means, should the Sweet Pea rank as a florists' flower? The matter has been already brought before the Committee of the Royal Horticultural Society, and I think this body very wisely decided not to include it as a florists' flower. Some may consider this a slight on so beautiful and popular a plant, but I do not think so. To surround it by hard and fast rules would mean intercrossing only with those varieties most likely to approach a given standard of perfection, to a great extent irrespective of constitution and natural beauty. We have plenty of evidence in the florists' Auriculas, Polyanthus, laced Pinks, florists' Carnations and Hollyhocks, how the constitutions have become enfeebled.

It has, fortunately, in all the plants I have mentioned given rise to what may be called side issues. To quote the case of the old and debilitated laced Polyanthus. The public enjoys much more the healthy strains of the beautiful border varieties, and does not discard a good kind because it happens to have a pin-eyed instead of a regulation thrum-eyed flower. We have also our garden or border varieties of Pinks, Carnations, and Hollyhocks of good strains. The true florists' Dahlia is cared for only by the very few, the Cactus and decorative varieties are the favourites. A really good and popular flower cannot remain long fettered at the present day. These side issues, as I have termed them, are sure to break away, although they may be, and are, considered rebellious by the strict old florist. Raisers and lovers of beautiful flowers can, I think, be trusted not to encourage or develop anything likely to bring discredit, at any rate on the Sweet Pea.—(*Paper read by* Mr. G. STANTON, *Park Place, Henley, at a meeting of the Reading Gardeners' Association.*)

(To be continued.)

BRIEF NOTES ON ALPINE FLOWERS.

(*Continued from page* 488.)

THE SEASON AND ITS NEEDS.

THE mild weather which has prevailed for some time is not very favourable for many flowers in the rock garden. It is to be feared that they will suffer when frost comes, unless it be accompanied by their natural covering of snow. It will be prudent, therefore, to be prepared with some protecting material for use in the event of severe frost. This is not required by many alpines, but with a considerable number it is a profitable precaution. Some very early flowering plants, such as Saxifraga apiculata or S. Burseriana, may either have a glass cover put over, but well above, them, or a little loose material placed lightly over when severe frost is apprehended.

I prefer, for many things, some of the more woody stalks of herbaceous plants, nothing being better than those of the Asters. They should be placed very thinly, so as to break the intensity of the frost without intercepting air. Some very early plants are worthy of this care, so interesting are they in the beginning of the year. This covering should be removed in all favourable weather. Care ought also to be taken that alpines with silky or downy foliage are carefully protected from heavy rains. Anything to throw off rain, and at the same time raised so much above the plants as to allow the free play of air, will do. Squares of glass, slates, boards, or similar things, may be used. These are not always ornamental. Neither are umbrellas nor waterproofs to the human race, but they serve a useful purpose, and are therefore tolerated.

In the use of these protectors for the plants it must not be forgotten that the drip may be injurious to neighbouring flowers, and the shelters must be placed in such a way that the drops will not damage the other plants. For instance, it will not do to have the drip falling into the centre of a choice Saxifrage or Primula; nor will it do to direct it into the pocket occupied by an alpine which likes a dry soil in winter. It will be seen that even in what appears a thing so simple there is room for the exercise of some thought and experience.

DRAINAGE.

Another seasonable remark to make is that the advantages of properly constructed rockwork providing ample drainage will now be apparent. Some make rockeries with "pockets" for the plants, which are literally cups filled with soil, and without any means for the escape of surplus water save by means of the natural overflow when the earth is saturated to its utmost capacity. Such a state of matters—which, remember, will last for days and sometimes weeks in winter—is fatal to many plants, and unlike the natural conditions in which so many of them grow in their native habitats. This is, perhaps, enough to say on this point, with the exception of a remark that the necessity of good drainage is as great for alpine as for border flowers.

TREATMENT OF SMALL PLANTS.

This is not a good season at which to procure new plants, but it is, at times, necessary or convenient to have them secured in the middle of winter. Large plants which have had full exposure to the weather and have been grown in pots may, however, be planted out with safety if they have balls of earth attached. Even these require some attention, as in the event of frost a crevice or cavity may appear between the old ball and the adjacent soil. It is by far the better plan to allow the plants to remain in the pots, or, if not in these receptacles, to place them in clean, well-drained pots with suitable soil. They may then be plunged in some light material under glass and kept until spring comes round. Frames are generally used for the protection of alpines in pots, but unless great care is taken there is likely to be a large percentage of loss.

Damp is the cause of much of this, and to avoid this evil nothing equals (it may almost be said nothing avails but) a free circulation of air. In bad weather the frames are liable to neglect, especially if the alpine grower is an amateur, not unduly enthusiastic, or a gardener overwhelmed with work, as too many are, at all seasons. Nothing can be so convenient as a low alpine house constructed with both roof and side ventilation, and with a small modicum of artificial heat for use in unusually severe weather. In such a house young plants will make rapid progress. The pots are often plunged in ashes, but my experience is that these are sometimes unsatisfactory, and occasionally lead to the loss of valuable plants. Fine gravel, rough sand, or cocoa-nut fibre refuse will all be found preferable when they can be obtained.

Failing a properly made alpine house, a cool greenhouse where very little artificial heat is employed should be preferred to a frame. In either an alpine house or a greenhouse the flowers are readily accessible, and they afford many opportunities of enjoying the beauties of the alpine flora at an earlier season than in the open garden. The plants should not be stimulated by much heat, or they will be weakened and made more susceptible to harm from spring frosts after they are placed in the rock garden in their permanent positions.

These hints of the season are, as it were, rudimentary, and past masters in the craft may think them unnecessary. They are not so, however, as one finds that it is often these matters which if neglected check and, too frequently, stop finally the aspirations of the tyro in growing the flowers which form the subject of this series of notes. What are truisms to some are unknown to others, to whom we desire to lend a helping hand in the pursuit of a branch of gardening calculated to give true and lasting pleasure.—ALPINUS.

THE YOUNG GARDENERS' DOMAIN.

CULTURE OF THE GRAPE VINE.

(*Concluded from page* 466.)

FOR protecting outside borders of early vineries a thickness of straw or Oak leaves must be placed on before the temperature of the soil falls too low. This will retain warmth in the borders and hasten root action. It is also good practice to put some hard protecting material over the covering to throw off heavy cold rains. As the weather becomes warmer the greater portion of this protecting material must be removed to let the sun get at the borders. During dry hot seasons the outside borders of all vineries ought to receive a thorough watering, afterwards placing a thickness of manure on each border to prevent evaporation.

When the colouring of the Grapes commences rather more air must be admitted by day, and a little left on the house all night, as it is impossible to get well coloured Grapes from a close atmosphere, or if the leaves are crowded or badly attacked by red spider. From this period onwards so much moisture must not be allowed, but endeavour ought to be made to keep a growing atmosphere until the Grapes are fairly well coloured. When ripe, give plenty of air day and night. If the weather be hot and bright the Vines derive benefit from the paths being damped down at mid-day. Some Vines are more subject to scorching than others, especially Muscats. Early and careful ventilation, combined with watchfulness, are the remedies. If the leaves are observed scorching badly, a slight shading must be afforded in bright weather, just sufficient to break the strong rays of the sun. Scalding is the one great failing of Lady Downe's. It takes place when the berries are stoning until colouring commences. As a preventive air must be left on the house all night, and if the mornings be bright the supply must be increased early, to allow the condensed moisture to evaporate and escape before the sun gains much power. Scalding will easily be perceived by the under side of the berry, or in some cases the berry altogether turning black. At this season, with this Grape, one needs to be especially careful, as in the case of negligence great harm may be done. Houses are now constructed with

such improved methods of ventilation that we may hope ere long scalding of the berries will be a thing of the past.

When late Grapes are hanging some time after being ripe all means for their protection must be resorted to. Dead or decaying leaves should be removed daily, and the bunches looked over at least three times a week, removing all bad berries. It is astonishing how quickly one berry, if left, will ruin a bunch, therefore this operation needs especial care. The house must be kept dry and well aired on all favourable occasions, and should the weather be damp a small amount of pipe heat must be resorted to, but do not get it too fierce, as it will aid shrivelling, especially in Muscats. The outside borders must also receive protection of some kind from the wet, as should the borders become too moist at this season, premature decay may take place in the berries. This protection should be removed as soon as the Grapes are cut.

Late keeping Grapes must be cut sufficiently early to afford the Vines a good rest. The Grapes will keep well if cut, and the piece of cane attached placed in bottles filled with clear soft water. It is advisable to leave a length of wood beyond the bunch. The bottles must be so fixed that when the stem is placed each bunch will hang quite clear. The bottles must be examined two or three times to see that the Grapes do not lack for water, especially early after bottling, as it will then be found the bunches have taken up a considerable amount of the water. The bunches must also be frequently examined, cutting out all decaying berries.

Red spider, thrips, and mildew will generally be found the worst enemies gardeners have to deal with. For the former, slightly dusting affected parts with flowers of sulphur will hold it in check. For thrips, if they become troublesome, sponge the leaves with lukewarm water in which a little insecticide has been placed. For mildew, on its first appearance, sulphur must be used. If this enemy once get a strong hold it will play terrible havoc, not only with the leaves, but also the bunches; therefore we must be especially watchful for a first appearance of it.

In writing these few articles, I hope I may have been a little service to the younger members of our craft; I dare not hope for the older ones. I have endeavoured to give the cultivation of the Grape Vine as I have seen it for better or worse. I hope I have succeeded.—SEMPER.

DENDROBIUM PHALÆNOPSIS SCHRÖDERIANUM.

I THINK Dendrobium Phalænopsis Schröderianum might well be called king of the genus, both for its freedom of growth and flowering. It is very early grown, adapting itself anywhere where it can get a sufficiency of light, heat, and moisture. An ordinary stove will suit it as well as a house purposely for them.

It should be placed as close to the glass as convenient without the pseudo-bulbs touching the glass, and after once being started into growth should never be allowed to get dry. Shading must only be resorted to in the hottest part of the day, syringing the plants thoroughly when closing the house, as this will induce strong, healthy growths, and help to check thrips and other insect pests which are apt to disfigure the plants and retard the growths from full development. After the plants have finished flowering they should be given a thorough resting.

The colours of the flowers of this delightful plant range from almost pure white to velvety crimson, and are borne on spikes averaging from 18 inches to 2 feet in length, bearing from sixteen to twenty flowers. It is so useful for house decoration in a cut state, and when in flower on the plant for grouping, for which it seems to be an especial favourite, as we see it used so extensively in all the premier groups at the leading shows.

The pests that infest these plants are thrips and scale, which can only be kept down by frequent sponging. There is also a small weevil, or beetle, which bores its way into the bulbs, and there deposits its eggs, which cause the bulb to decay, and can only be exterminated by frequent fumigations of XL vaporiser.

Another great thing it has to commend it is the moderate price at which it can be purchased and the small amount of room it requires, which is a consideration where space is limited. One often hears visitors, when passing through Orchid houses, remark, "What a lot of dry-looking sticks they are!" when out of flower (which is very rare). Yet when they see them in flower they are aroused to a state of enthusiasm not often seen.—J. B., *Bowden, Wilts.*

PERNETTYA MUCRONATA.—This is one of the few shrubs which take foremost places in more than one division. It can be put into a front place among evergreens, it is one of the very best ornamental fruited shrubs, and although individually the flowers are small, the great freedom with which they are produced makes it interesting as a flowering shrub. Looked at as an evergreen, it forms a low-growing compact bush with small ovate, lanceolate leaves half an inch or so long. They are dark green and glossy, and are relieved by the red bark of the young wood. The flowering period is spring, though a few flowers may be found at almost any time. The flowers are small and white, and are followed by bright coloured fruits. The fruits are produced in dense clusters, and have a wide range of colour in the various varieties. Some are white, some pink, red, or purple, with many shades of each. The plant is not very particular regarding soil and position so long as the soil is not too heavy. It is useful either as a single plant or grown in a mass, while a bed containing a dozen or so of the best varieties is very interesting. The stock of plants can be readily increased by division or from seeds, the latter being the slower method. The seeds should be sown in sandy peat, and the seedlings pricked off in pans or boxes until large enough for the nursery border, when they should be treated in a similar manner to Ericas.—K.

FRUIT FORCING.

Cucumbers.—The growing of clean straight fruit in winter is no easy matter. There is nothing like plenty of heating surface for growing winter Cucumbers. The heat not being radiated at a high temperature is good for vegetation, and the water in the pipes not having to be kept near boiling point the results are satisfactory in produce and cost of production, for hard firing means a corresponding waste of fuel. Very little air will be needed now, yet a change of atmosphere whenever a favourable opportunity offers will be of great service in hardening the tissues, always, however, excluding sharp and cold air, turning off the top heat when the sun is very bright and likely to raise the temperature much over 85° or 90°. In bright weather damp the house in the morning and afternoon, but be careful not to wet the embryo fruit, for water hanging on it will cause decay. Water will be required at the roots about twice a week, always affording it equal in temperature to that of the bed. Maintain the night temperature at 65°, 5° less on cold mornings, and 5° higher in mild weather, 70° to 75° by day, and 10° to 15° advance from sun heat.

The plants from the August sowing planted out in September have covered the trellis and are fruiting plentifully, but this must be allowed moderately if the plants are expected to afford full supplies at a later period. Young plants, however, always give the best results; hence when they become strong the better plan is to fruit them and have a succession to follow when they indicate exhaustion. Attend frequently to stopping and thinning, also tying the shoots, avoiding overcrowding, as stout foliage better endures the trying ordeal of wintry weather. Canker must be held in check by quicklime rubbed well into the affected parts. Removing old useless leaves is good for the plants, and may keep off attacks of red spider; but the best safeguard against this pest and white fly is a little sulphur on the hot-water pipes, also for mildew. Aphides succumb to fumigation with tobacco paper or vaporisation with nicotine essence, but neither must be used excessively or the foliage will suffer; besides, either operation on two or three consecutive evenings in moderation makes sure of the pests and thrips.

Figs.—*Earliest Trees in Pots.*—To have fruit ripe at the end of April or early in May the trees should be started in December, and they must be of the early varieties. After trying most we find St. John's and Early Violet, with Pingo de Mel and Brown Turkey, unequalled. Dress the trees with an insecticide, adhering closely to the instructions. Stand the trees on loose brickwork pillars, so that they may not settle with the fermenting material, which, being placed in the pit and brought up about the pots, will afford a genial warmth and moisture, but the heat about the pots must not exceed 65° until the trees are fairly in growth. The top heat may be 50° to 55° at night, and 65° by day, the trees and house being damped in the morning of fine days, and again in the afternoon, but it must be done sufficiently early to allow of the trees getting fairly dry before night. Water must be given at the roots to render the soil evenly moist, supplying it at the same temperature as that of the heat about the pots; but avoid overwatering or a wet condition of the soil, as that neither favours root formation nor a sturdy development. Also avoid a close moist atmosphere; the moisture arising from the fermenting material, with an occasional damping of the paths and walls, will be sufficient in dull weather.

Early Forced Planted-out Trees.—The earliest house should be closed in December to have ripe Figs in May. Where, however, the earliest Figs are obtained from trees in pots, starting the trees in borders may be deferred until the new year, so as to afford a succession. Planted-out trees, even with the roots confined (as they should be for early forcing) to narrow inside borders, will not ripen the fruit so early as trees in pots with the aid of bottom heat, hence if started at the same time they will afford a close succession to that from the trees in pots. The trees having been pruned and dressed with an insecticide, the house thoroughly cleansed and the border top-dressed, attention must be given to the moisture of the border. Assuming the soil has become dry, apply water in a tepid state to the roots at frequent intervals until the soil is thoroughly moistened, but not made sodden by over-supplies. In the matter of temperature proceed as for the house with trees in pots.

Succession Houses.—Prune the trees when the foliage has fallen. Shoots which have reached the limit of the trellis must be cut back to where the succeeding shoots start in order that they may occupy their places in the ensuing season. Cut away all elongated spurs, reserving, however, as there is room, a few of those which are short-jointed and fruitful. Loosen the trees from the trellis, thoroughly cleanse the woodwork with soap and water, the glass with clear water, limewash the walls, adding a little sulphur, and wash the trees with soapy water, afterwards dressing them with some approved insecticide, avoiding, however, those containing substances injurious to the bark. Tie the trees to the trellis, leaving sufficient space in the ligatures for the swelling of the branches. Lightly point the border, remove the loose material, supply fresh loam with a sprinkling of bonemeal, and scatter a few sweetened horse-droppings on the surface. Ventilate freely in mild weather, only closing when frost prevails.

Pines.—*Successional Plants.*—Span or three-quarter span-roofed pits or small houses properly ventilated are the most suitable for small stock, which at this season often suffer irreparable injury from being kept too close and warm, the plants being drawn and weakly. A temperature of 60° at night and 65° in the daytime will keep all young stock gently progressing, admitting a little air at 65° at the top of the house, leaving it on all day, but not to lower the temperature below that point; and when the sun raises the temperature to 75° a free circulation of air should be allowed. The bottom heat must be kept steady at 80°. Avoid anything approaching a damp atmosphere; moderate humidity only is needed at this time of year. Apply water when the plants become dry, and then afford a thorough supply of weak liquid manure. It is essential that the plants be kept well up to the glass, and be given plenty of room.

Suckers.—Those ready for starting now should be kept until March, and if there is likely to be a scarcity of suckers any recently potted may be retained in 5-inch pots, affording them a light position in a rather moist pit with a temperature of 55° at night and a slight bottom heat, keeping them rather dry. Take every opportunity of collecting leaves whilst dry, Oak and Beech being the best, and whenever a favourable opportunity offers push forward whatever may be necessary in the renewing or augmenting the permanent beds, effecting this without giving a check to the plants.

Strawberries in Pots.—A start must be made early in next month to have fruit ripe early in March. La Grosse Sucrée has been for many years, and still remains, our standard early forcing variety, with some plants of Vicomtesse Hericart de Thury and Royal Sovereign (of late years) introduced at the same time. The plants have always done best with us in a three-quarter span-roof house facing south, there being a bed in front for Cucumbers or Melons, a path at the back, and a narrow border at the foot of the wall for Tomatoes now going on towards fruiting in pots in another structure, they coming into the Strawberry house soon after starting. The Strawberry plants are placed on an improvised stage, tier fashion, so as to admit of ready access for watering from the path, and about 15 inches from the glass. The plants to be introduced should have the drainage seen to, rectifying it if defective, making sure that it is free, removing the loose surface soil, and supplying a top-dressing of horse droppings rubbed through a ¼-inch sieve, adding a good handful of some approved fertiliser, then watering it with a rose watering pot, so as to bring into a moist state and consolidate the material, otherwise it washes off in watering the plants. Plants so treated push surface roots freely, and the manurial elements are taken up by them. Wash the pots, remove the decayed leaves only, and place in position, taking care to keep the soil moist, for dry soil causes the loss of roots.

THE KITCHEN GARDEN.

Forcing Asparagus.—No vegetable is more easily forced than Asparagus, and early dishes are invariably fully appreciated. It is somewhat expensive to produce, because forcing many plants usually means breaking up one or more well established beds to get them. Once forced they are of no further value. Those who annually force Asparagus in the ordinary way form a new bed every season, and every winter break up the oldest or least valued bed among those that have been established several years. If Asparagus is wanted for Christmas the start should be made at once. Heated pits with depth enough for a hotbed of leaves, or leaves and manure, is the best position, and failing this a box frame on a mild hotbed is preferable to all fire heat. The bottom heat must not be violent. Prepare the leaves and manure in the usual way, and put them together firmly as a partial preventive of overheating. Cover with a layer of rich soil, and when it is seen the heat is not above 65° the plants may safely be introduced. These ought to be carefully lifted, and at once arranged closely together on the hotbed, covering with 4 inches of good fine soil. A moist top heat of 60° to 65° ought not to be exceeded, hard forcing, and also poverty at the roots, leading to the production of weakly shoots. In cold weather the frames or pits may be constantly matted over.

Rhubarb.—Rhubarb is now most often forced in Mushroom houses and other heated structures. After they have produced leafstalks to their fullest extent the clumps are thrown away, so that in this case again young plants must be constantly prepared to take the place of the old ones. When lifting clumps for forcing save a little soil about them and move into a house or pit, the temperature of which can be kept at from 55° to 65°. They may be arranged together on a mild hotbed or on a solid bed of rich soil, in either case banking over with rich moist soil. Keep the clumps constantly moist, allowing them to become very dry ending in the production of weakly leafstalks. The colour and flavour of Rhubarb grown in the dark is usually preferred.

Seakale.—Strong one or two-year-old plants are the best for lifting and forcing. These can be partly cleared of coarse roots, and packed somewhat closely together in large pots or deep boxes of rich soil. Enough to form several successions may be lifted and potted or boxed off at one time, introducing them into heat at intervals of a week or ten days between. If pots or boxes are placed into ordinary forcing houses, not far from the hot-water pipes, or are arranged on hotbeds, these must have other large pots or boxes inverted over them to exclude the light. If kept constantly moist at the roots the crowns may be cut over twice, the second crop of shoots frequently doing good service.

Protecting Seakale.—Ordinary Seakale is quite hardy, but the lily white form is not. All the plants of this variety, popular because most delicately flavoured and attractive in appearance, required for forcing, ought to be lifted now and stored thickly in moist soil where they can be protected from frost. Any left in the ground should have a ridge of ashes placed over them, later on banking soil over this, the first by way of protection from frost, and the soil to keep the growth blanched for use when it starts next spring.

Endive.—There ought to be no further delay in storing or providing protection for the greater portion of Endive grown. After sustaining slight injury from frost decay is rapid, but if uninjured, the plants tied up and then moved into a pit, frame, or vinery, surrounding the roots with moist soil, they will keep good for several weeks—always provided additional protection is afforded whenever necessary. Endive will also keep for several weeks in sheds and other makeshift places. Blanching may be effected either by tying up each plant with raffia, or they may be covered a few at a time with mats. Where there is a Mushroom house available, this will be found a good place for blanching Endive.

Horseradish.—When Horseradish is left in possession of the same plot of ground for several years in succession the quality of the roots deteriorates greatly. It is best when grown quickly and strongly. Should the weather continne comparatively mild and open fresh beds may be formed now instead of waiting till the spring, when so much other important work has to be done. Clear an old bed by trenching deeply, saving all the roots found. Prepare a fresh breadth of ground by trenching, mixing good solid manure with the bottom spit of soil only. Dibble in young straight roots to their full length 1 foot apart each way. One year later abundance of very fine roots ought to be available.

THE BEE-KEEPER.

Flowers for Bees.

Do bee-keepers study the requirements of the bees by planting suitable plants, shrubs, and trees, which in their season will yield pollen or honey, and at the same time beautify our gardens or landscape? I am afraid the reply must more often than otherwise be in the negative. There are many bee-keepers who, if they had the will, have not the opportunity. Fortunately there are many gardeners who are interested in bee-keeping, some of whom may have opportunities of planting, it may be a tree or shrub, which in its season will be of great benefit to the bees. I was reminded of this fact within the past few days on passing a plant of Ceanothus Veitchianus in full bloom, and which was covered w th both the hive and wild bees which were evidently obtaining honey as well as pollen from its flowers. Owing to the fine weather experienced throughout the autumn there are still many hardy flowers in the garden, which is very unusual in the dark days of November. In addition to the plants mentioned in previous notes as useful to the bees, and which may be planted at this season, may be mentioned the different varieties of bulbs, the earliest of which is the Winter Aconite, commencing to bloom, if the weather is favourable, early in January.

Tulips are very showy for either beds or borders, and when carpeted with a dwarf-growing plant, such as Aubrietia, which, by the way, is a capital bee plant, they are invariably much admired, and are appreciated by the bees on account of the pollen obtained from them. Many of the bulbs are quite at home when planted in the grass, where they may be allowed to remain undisturbed for years. The scarlet Duc Van Thol Tulip is a charming object for this purpose, so are Scillas, Aconites, and many other bulbs which are of value to the bees. The grass must not, however, be cut until the foliage of the bulbs has died down.

The different varieties of Salix, or what are commonly called Willows, must not be omitted from the list, as they yield abundance of pollen throughout the early spring months, when it is so necessary for the well-being of the stocks. Willows, too, have a handsome appearance when planted on the margin of a lake or pools of water—in fact, they will grow in any damp place where no other tree will exist, except it may be the Poplar, which, however, is of no use for the bees.

The Palm Willow should be planted if there is only room for one variety, as it is the best, and is also the earliest, commencing to flower early in February and continuing for several weeks. It produces more pollen than any other tree with which I am acquainted, and it comes at a season when it is most required.

Bottom Ventilation for Bees.

Now that there is no danger of robbing taking place, it will be advisable to open the entrance to the hives their full length, as this will cause a full circulation of air, and will dispel damp, which is so

detrimental to the welfare of the bees. Someone may ask, Why is it necessary to have a free circulation of air in the hive during the winter months? Would it not be better, owing to the hive being warmer, if the entrance were closed, so that space was left for the bees to pass out?

In practice it has been found that bees winter better, and are altogether in better condition the following spring, if the entrance to the hive has been opened several inches than when it has been nearly closed. It does not admit moisture, as some may imagine. On the contrary, the floor board will be found drier than will be the case with one, say, opened half an inch.

Some bee-keepers advocate perforated zinc floors, but after experimenting with them for several years I have finally discarded them, as I found the stocks did not increase at such a rapid rate during the early spring months as was the case with other stocks in which the entrance had been reduced for a few weeks at that period when breeding was going on apace.

Although the weather was excessively wet last winter, and the hives were facing due west, those hives that were wedged up a quarter of an inch from the floor board all round proved to be some of my strongest stocks last summer. The wedges were removed in the spring, and otherwise treated the same as the other colonies.

Rendering Wax.

One of the most unpleasant operations in connection with bee-keeping is what is usually termed making wax. But in the strict meaning of the word this is not true. The bees make the wax, the operator is simply rendering it from the combs which chiefly consist of wax. I have, however, yet to meet the bee-keeper who has said he really likes the job. There are many ways of obtaining the wax from the combs, but whatever plan is adopted heat in one form or other is necessary.

The old-fashioned plan, still much in vogue in some country districts, is to place the combs in a bag, which is put into hot water, and when the combs are well saturated the bag is placed on a slanting board, one end of which is in a vessel of cold water. The other end the operator places against his chest, and with a stout rolling pin he presses out the wax through the porous bag, which falls into the cold water and forms a cake of wax on the surface. The bag is returned to the hot or boiling water again as often as necessary, and the operation is repeated until no wax remains.

Another plan, which is preferred to the above, is to place all the combs in a bag which is placed in a copper and covered with water. The bag must be securely tied, and if a heavy weight is placed on it to keep it at the bottom it will be an advantage. If this is not available some other means must be taken to keep the bag at least 2 inches under the surface of the water, the reason of which is apparent, as directly the wax melts it will float to the top. When the water has become quite cold the wax may be taken off the surface in a thick cake. If the bag is not kept below the surface the wax could not be taken away in this manner, as it would stick to the bag.

When treated in this manner the under part of the wax will be dirty, caused by the débris and dirt in the combs. This may be scraped off. The wax must then be placed in vessels and put in the oven to be melted, afterwards pouring it into moulds. There will probably be a sediment at the bottom of each, which should be scraped away, and if necessary the wax may again be melted in the oven. If this process is repeated too often the colour of the wax somewhat deteriorates.

A solar wax extractor may be made by placing a sheet of glass over a shallow vessel containing the combs. If this is fixed at the right angle to catch the sun's rays in the middle of a bright day in August, it is surprising how quickly the wax is rendered from the comb. Some experiments I made during the bright weather that prevailed last July was quite a success.—An English Bee-keeper.

TRADE CATALOGUES RECEIVED.

R. Owen, Maidenhead.—*Chrysanthemums.*

W. Watson, Clontarf Nurseries, Dublin.—*Carnations, Roses, and Fruit Trees.*

GARDENERS' CHARITABLE AND PROVIDENT INSTITUTIONS.

The Gardeners' Royal Benevolent Institution.—*Secretary*, Mr. G. J. Ingram, 50, Parliament Street, London, W.C.

United Horticultural Benefit and Provident Society.—*Secretary*, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

Royal Gardeners' Orphan Fund.—*Secretary*, Mr. A. F. Barron, The Royal Gardeners' Orphan Fund, Chiswick, W.

TO CORRESPONDENTS

All correspondence relating to editorial matters should, until further notice, be directed to "The Editor," **8. Rose Hill Road, Wandsworth, London, S.W.**, and **NOT** to Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Table Plants (*Novice*).—The following are all useful for the purpose indicated: — Dracænas angustifolia, Sydneyi, and Ernesti; Crotons elegantissimus, Countess, angustifolius, and interruptus aureus; Aralias Veitchi, gracillima, and elegantissima; Geonoma gracilis, and Cocos Weddelliana, Carex viridis and variegata, and Pandanus Veitchi. The pots should not be larger than 48-size, and it is well to cover the surface of the soil with Selaginella or Panicum variegatum.

The Silver Tree (*E. H. Bayly*).—The plant of which you sent a leaf is a member of the natural order Proteaceæ, and is known to botanists as Leucadendron argenteum. It is a native of the Cape of Good Hope, where it is known to the Dutch colonists as Witteboom, or Silver Tree, a name which it owes to the silvery appearance of the leaves. The plant is in cultivation, and may be seen at Kew and in a few other establishments where large collections of old and curious plants are grown. It was introduced towards the close of the seventeenth century, so that it is by no means a novelty. Leaves are imported for decorative purposes with the Cape Everlasting Flowers, and may be frequently seen in Covent Garden Market. A figure of the plant was published in the "Botanical Register" in 1826, but it does not show the peculiar whiteness of the foliage.

Mealy Bug on Vines (*Perplexed*).—You will not find it easy to exterminate this pest, as the insects find safe quarters before the Vines are pruned, and some will reappear after growth is started. We have not found anything better as a winter dressing than syringing the house well in every part with a petroleum mixture, a wineglassful to 4 gallons of water, kept well mixed by one person syringing into the vessel whilst another applies it thoroughly to every part of the structure and Vines. Then, after pruning the Vines, stripping off the rough and loose bark, wash them with a softsoap solution 3 ozs. to a gallon of water. Afterwards apply with a brush a petroleum emulsion 4 ozs. softsoap dissolved in a gallon of boiling water and a wineglassful of petroleum churned violently for several minutes with a force pump or garden engine into the same vessel until thoroughly emulsified. Keep a sharp look out for bug in spring, and if any appear touch each with a very small brush dipped in methylated spirits.

Utilising South-west Wall Alternating with Tomatoes (*S. J.*).—All the plants you name would probably flower a fortnight to three weeks earlier against the wall than in the open ground, but there would certainly not be any profit in such plants as Lilacs, Gueldres Rose, Andromeda floribunda, Pyrus japonica, and Deutzia gracilis. Tea Roses, such as Comtesse de Nadaillac, Isabella Sprunt, The Bride, Adam, W. F. Bennet, Sunset, Madame de Watteville, Amazone, with Niphetos, which you have. Noisettes: Celine Forestier, Maréchal Niel, and Wm. Allen Richardson. Of Hybrid Perpetuals Brilliant, Charles Lamb, Emperor, and Empress are good for buttonhole work. The Roses would best serve your purpose, growing them in pots, which must, of course, be plunged, and to secure flowers early it would be necessary to have canvas to pull up and down so as to afford protection in frosty weather, otherwise the late spring frosts would damage the young growths and flowers or retard the flowering, the great thing being to have the blooming early, and not interfere with the Tomatoes, which will need to go out in May, and that is the time when the Roses will be at their earliest. For those reasons it is a matter of some importance as to whether the Roses could then safely be removed from their position against the wall. By affording slight protection, or giving a sheltered situation, the difficulty might be overcome. Of course, by giving protection in winter, the Roses would flower considerably earlier and give flowers more or less right through the season, so that, all points considered, they are likely to be profitable as well as suitable for the alternate system. Even in mild seasons they would give blooms late in autumn or early winter.

Insects in Peach House (*Anxious Inquirer*).—No. 1 is the larva of a snake millipede, evidently Julus terrestris, which, in the larval stage, feeds on decaying animal substances and decomposing vegetable matter; but in the adult form attacks Potatoes, Beet, Carrot, Parsnip, ripening Strawberries, and the young roots of various trees, such as Vines, and Peaches. The best dressing for the larva is quicklime, as this both kills the pests and takes away the decaying matter by converting it into inorganic substances, and bettering the soil in every way. We should not use more than 14 lbs. per rod, slaking and spreading evenly on the border, leaving there or very lightly forking in. We find, however, that a mixture of best chalk lime, air slaked, and good soot in equal parts by measure, using at once at the rate of ½ lb. per square yard and immediately pointing in, acts much the better for the trees, and also effectively against the millipedes, both larva and adults. No. 2 is, as you believe, the grub of the black Vine or grooved weevil (Otiorhynchus sulcatus). The pests are very tenacious of life, living several hours in solutions of nitrate of soda, kainit, &c., but always succumbing in the end; also to chemical manures, which slowly but surely compass their destruction. To act quickly, use soluble phenyle, a wineglassful to 3 gallons of water, giving that amount per square yard; or if the grubs are numerous and near the surface, as they usually are, use a gill (¼ pint) to 3 gallons of water, and apply 1 gallon of the solution per square yard by means of a rose watering can when the soil is in a moist (neither wet nor dry) condition before application. The solution will also destroy the Julus larvæ; but the lime or lime and soot will not kill the weevil grubs unless the lime comes into immediate contact with them.

Silver Fir Infested by Insects and Fungus (*A. W.*).—The insects on the piece of bark in the cottony substance are mostly the eggs of the Pine bug (Chermes laracis) but there are also plenty of the moth (so-called) Chermes, and even some larvæ. The pest is best destroyed by now dressing the trunk with a solution of soluble petroleum or some other approved insecticide, applying with a brush, spraying the other parts of the tree with the solution, as this cannot well be brushed on the leafy parts. The eggs are readily seen by a pocket lens, being of a pale reddish purple colour, becoming darker just before hatching, and the young are also rosy purple coloured, these soon fixing on the bark, and covered with a whitish meal. The spraying may be repeated about the second week in April, when the young, or rather eggs, are being produced again abundantly, choosing a dry time and wetting every part of the tree, as the insects fix themselves at the base of the leaves, especially on Silver Fir. The insecticide should be applied warm (130° to 140°). The twig from the younger tree also had a few patches of bug, but this has nothing to do with the enlarged axis of the shoots, unless the insects have punctured the buds—a very unwarrantable conjecture. The swellings on the one(this) and two-year (last) old wood, terminal and base respectively of shoot, are due to a fungus, Peridermium elatinum, giving rise to canker, and this without either producing witches' brooms or œcidia in the leaves, but the latter are, or rather were, in the shoot at the terminal buds, even spores remaining, and some of these germinating, as you may see on making a longitudinal section of a should-have-been bud and examining with a microscope enlarging not less than 100 diameters. The mycelium of the fungus is perennial in the tissues, which also may be seen as a dark reddish purple stain, penetrating the cambium and the wood, even with the unaided eye, by making a transverse section. Sooner or later witches' brooms will appear on the tree, and the leaves on that part produce œcidia and then falling, the witches' broom being deciduous in that case, and the remainder of the tree evergreen. We have seen some very fine specimens on the Silver Fir, and have also seen it on Abies (Picea) Pinsapo. On aged trees it does not do much harm. The witches' brooms are very curious, especially when not becoming leafless: but on young trees the canker knobs kill the young growths, causing the buds to become "blind," and the trees have a very stunted appearance, many dying outright, as almost every growth in some cases is affected. The only preventive is to cut off all witches' brooms and cankerous swellings on old trees, and clear away affected young ones in the thinning. We have lost many hundreds when from 5 to 8 feet high simply because we had several old trees bearing the witches' brooms near by.

Names of Fruits.—*Notice.*—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. *In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing.* The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. *They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state.* (*T. C. R.*).—1, Hoary Morning; 2, Golden Knob; 3, Scarlet Nonpareil, 4, Dumelow's Seedling. (*Nemo*).—1, Court of Wick; 2, Ribston Pippin; 3, Marie Louise d'Uccle; 4, Winter Nelis. (*H. D. J.*).—1, Adam's Pearmain; 2, Cellini; 3, Gloria Mundi; 4, Bramley's Seedling; 5, Beauty of Hants; 6, Golden Winter Pearmain. (*J. W. A.*).—1, Waltham Abbey Seedling; 2, Kerry Pippin; 3, Wellington (Dumelow's Seedling); 4, unknown. (*F. G.*).—Autumn Bergamot. (*J. J. T.*).—Mère de Ménage.

Names of Plants.—We only undertake to name *species* of plants, no varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*P. F.*).—1, Vanda cœrulea; 2, Adiantum pubescens; 3, Gymnogramma chrysophylla. (*H. N.*).—1, Begonia nitida; 2, Arabis alpinus variegatus; 3, Euonymus europæus, the Spindle Tree. (*Fern Grower*).—1, Polystichum angulare; 2, Lastrea propinqua; 3, Adiantum cuneatum grandiceps; 4, Polypodium aureum; 5, Asplenium bulbiferum.

COVENT GARDEN MARKET.—Nov. 24th.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	1 0	to 3 0	Grapes, lb....	0 8	to 2 0
Cobs	22 6	24 0	Lemons, case	11 0	14 0
Filberts, 100 lbs.	0 0	0 0	St. Michael's Pines, each	3 0	8 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, ½ sieve	0 0	0 0	Onions, bushel	3 6	4 0
Beet, Red, doz....	1 0	0 0	Parsley, doz. bnchs.... ...	2 0	3 0
Carrots, bunch	0 3	0 4	Parsnips, doz.	1 0	0 0
Cauliflowers, doz.	2 0	3 0	Potatoes, cwt.	2 0	4 0
Celery, bundle	1 0	0 0	Salsafy, bundle...	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Seakale, basket	1 6	1 9
Cucumbers...	0 4	9 8	Scorzonera, bundle	1 6	0 0
Endive, doz.	1 3	1 6	Shallots, lb.	0 3	0 4
Herbs, bunch	0 3	0 0	Spinach, pad	0 0	0 0
Leeks, bunch	0 2	0 0	Sprouts, ½ sieve...	1 6	1 9
Lettuce, doz.	1 3	0 0	Tomatoes, lb.	0 4	0 0
Mushrooms, lb....	0 6	0 8	Turnips, bunch	0 3	0 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d
Arbor Vitæ, var., doz. ...	6 0	to 36 0	Ferns, var., doz.	4 0	to 18 0
Aspidistra, doz.	18 0	36 0	Ferns, small, 100	4 0	6 0
Aspidistra, specimen ...	5 0	10 6	Ficus elastica, each... ...	1 0	7 0
Chrysanthemums, doz. ...	4 0	9 0	Foliage plants, var., each	1 0	5 0
,, ,, single plants	1 6	2 0	Lilium Harrisi, doz.... ...	12 0	18 0
Dracæna, var., doz.... ...	12 0	30 0	Lycopodiums, doz.	3 0	4 0
Dracæna viridis, doz. ...	9 0	18 0	Marguerite Daisy, doz. ...	4 0	9 0
Euonymus, var., doz. ...	6 0	18 0	Mignonette, doz.	4 0	6 0
Evergreeens, var., doz. ...	4 0	18 0	Myrtles, doz.	6 0	9 0
Erica hymalis, per doz....	9 0	15 0	Palms, in var., each... ...	1 0	15 0
,, gracilis, per doz. ...	6 0	9 0	,, specimens	21 0	63 0
,, various, per doz. ...	8 0	12 0	Pelargoniums, scarlet, doz.	2 0	4 0

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms ...	3 0	to 5 0	Mignonette, doz. bnchs. ...	2 0	to 4 0
Asparagus Fern, bunch ...	1 0	2 6	Mimosa or Acacia, bunch (French)	0 9	1 0
Bouvardias, bunch	0 6	0 8	Narciss, white (French) dozen bunches	2 6	4 0
Carnations, 12 blooms ...	1 0	3 0	Orchids, var., doz. blooms	1 6	12 0
Chrysanthemums, 12 bnchs.	2 0	6 0	Pelargoniums, doz. bnchs.	4 0	6 0
,, ,, 12 blooms	0 6	2 6	Roses (indoor), doz.... ...	0 6	1 0
Eucharis, doz.	4 0	6 0	,, Tea, white, doz. ...	1 0	2 0
Gardenias, doz.	2 0	4 0	,, Yellow, doz. (Perles)	1 6	4 0
Geranium, scarlet, doz. bnchs.	4 0	6 0	,, Red, doz. blooms ...	1 0	1 6
Hyacinths (Roman) dozen bunches	6 0	9 0	,, Safrano (English)doz.	1 0	2 0
Lilac (French), bunch ...	3 0	5 0	,, ,, (French) per doz.	1 0	1 6
Lilium lancifolium, short, per 12 blooms	1 0	1 6	,, ,, ,, per 100...	5 0	7 0
Lilium longiflorum, 12 blooms	4 0	6 0	,, Pink, doz.	1 0	2 6
Lily of the Valley, 12 sprays	1 0	2 0	,, outdoor, doz. bnchs.	4 0	6 0
Marguerites, doz. bnchs....	2 0	3 0	Smilax, bunch	1 6	2 6
Maidenhair Fern, doz. bnchs.	4 0	8 0	Tuberoses, 12 blooms ...	0 3	0 4
			Violets, doz. bnchs.	1 6	2 0
			,, Parme (French), bunch...	2 6	3 6

A MODEL.

We suppose that the objects of a home farm are to supply dairy produce, poultry, and other products for the owner's private consumption, and to provide him with an object of interest near his own doorstep at little or no cost. To fulfil, however, the latter requirement,

the farm must be large enough to be practically self-supporting, whilst not being so large as to become a commercial enterprise.

It will thus become somewhat of a model farm, and therefore should be in a ring fence with the buildings in a convenient position. As an illustration, we will imagine that we have to deal with a farm of 100 acres. For such a farm it is obvious that the fields must not be of large size, and seven acres would be quite large enough for the fields of such a farm, and certainly for the arable part of it.

If we suppose that about half is grass, we might divide the arable portion into eight fields of about seven acres each, say fifty-six acres; this would leave forty-four for grass and hay. Of the grass four acres would be required for the dairy cattle, four acres for the farm horses, and twelve acres to graze with growing and breeding cattle. This would leave twenty-four acres for hay. We seldom find the haystack too large, and any surplus would always find a ready market at the Hall stables.

With regard to the cropping of the arable land, of course the supply of suitable food for the milch cows would be a first consideration, also the production of such crops as are required for house or stable use, and are beyond the usual scope of a gardener's domain. Carrots, Mangold, Potatoes, would come under this heading; whilst of corn crops Oats would be a favourite crop, the straw being most valuable, and the grain going to the hunters and carriage horses at a market price.

The eight arable fields would be most easily managed on an eight-years rotation, and granted only that the soil be fairly deep and of medium strength we should recommend the following as being suitable cropping for the purposes stated:—

1,	One field,	7 acres.	Potatoes, 4 acres; Tares, 3 acres.
2,	,,	7 acres.	Wheat.
3,	,,	7 acres.	Clover, for grazing.
4,	,,	7 acres.	Oats.
5,	,,	7 acres.	Carrots, 2 acres; Mangolds, 5 acres.
6,	,,	7 acres.	Barley.
7,	,,	7 acres.	Turnips and Swedes.
8,	,,	7 acres.	Oats.

The above should make the best use of the land available, and each field would be cropped in rotation—*i.e.*, Potatoes and Tares, followed by Wheat, then Clover, and so on, the eighth crop (Oats) being followed by Potatoes.

There would thus be 28 acres of straw crops, and if well treated with manure, artificial as well as natural, very fine grain crops should be grown with a heavy weight of straw, in this case a thing much to be desired.

To take the crops in order. Both Tares and Potatoes require very heavy tillage, but in different ways. The Tares should be sown partly in autumn and partly in spring, one sowing about September 20th, one about a month later, one in March, and a sowing of spring Vetches in May. The land must be well cleaned as soon as the Oat crop has been harvested, and a good coating of manure should then be ploughed in, with 6 or 8 cwt. of basic slag. The first sowing will be made immediately after ploughing, when not much harrowing will be needed, but the chisel harrow will have to be freely used before the later sowings, or the seed may be difficult to cover.

For the Potatoes plough deeply after as much autumn cleaning as possible or necessary. If there is a supply of good spit muck handy put it on before ploughing, which may be postponed to any convenient time before the new year, but it is a great point to get the ploughing done before severe frost sets in, for a frost mould is of great value to this crop, particularly if the land be on the strong side. If manure is not available apply 3 cwt. of kainit and 4 cwt. of basic slag before ploughing. The Potatoes should be planted about April 1st. It is All Fools' Day, but he is no fool who plants his Potatoes on that date.

The Wheat crop requires little notice. It should be drilled as soon as the land is ready after September 30th, and the Potato portion should have a top-dressing of nitrate of soda in April, about 1 cwt. per acre.

The Clover should be sown amongst the young Wheat the end of March or beginning of April, the mixture most suitable for the soil and locality will be easily ascertained from tenants or neighbouring farmers.

The Oats after seeds should not require manure, and there would not be any to spare for them. The seeds might be grazed until Christmas, and ploughed any time before February 14th when the weather will allow. We believe in deep cultivation for Oats, and would plough the land at least 8 inches, if possible, with chilled ploughs, and leave it as open to frost influence as is consistent with effectually turning over the sod.

March is the best month for drilling Oats, and as no farmyard manure has been used we should advise the application of 150 lbs. per acre of sulphate of ammonia and 300 lbs. of superphosphate, all to be harrowed in before the drill.

For Carrots and Mangold alike the land should be well cleaned as for Potatoes. The Mangold would be drilled late in April, 7 lbs. to the acre. Twelve loads of farmyard manure must be used, with 5 cwt. superphosphate at sowing time, and 2 cwt. nitrate of soda when thinned out. Carrots should be drilled about April 20th to May 1st, 8 lbs. to the acre, 22 inches apart in the rows. Farmyard manure is beneficial, but should be placed at least 10 inches deep. This can be done if the manure be spread on the surface, and ploughed in with a heavy chilled plough, using skim coulters to turn the manure into the furrow. We shall deal with the rest of the course and live stock next week.

WORK ON THE HOME FARM.

We have had a little more rain, but not much, and one slight frost with ice of the thickness of a penny; this was followed immediately by a slight rain, and the weather is now as mild as ever—this is all in favour of the Wheat we are now sowing after Potatoes. We tried to buy some small seed for this purpose; but have not succeeded, so have thrashed some of our own, and shall sow the tail corn from it. This is quite contrary to the teachings of high authority; but where larks abound only small, quickly exhausted seed will escape their ravages.

Mangolds are taking up exceedingly well, and are going into store in likely condition for keeping. We hear that Mangolds taken up early, like Potatoes, are not keeping well. Swedes are still growing fast, and had better remain a little longer before being stored. A good frost or two would check the flow of sap, and both make them easier to pull and improve their keeping qualities.

Cabbage for use next July may still be planted, and as long as the weather be mild they are better planted now than in spring; they make better roots, and grow much larger without being ready any sooner. Cabbage cannot be tilled too heavily, and will do very well with twenty loads per acre of good muck; but it must be well rotted, and if ploughed in in the ordinary way with a furrow about 10 inches wide, the Cabbage plants may be put in every third seam, and thus be 30 inches from row to row; a very practicable distance, for Cabbage is a crop that requires a good deal of hoeing, and room must be left for the horse hoe if economy is to be considered.

Some people keep making successional sowings of Tares; but it is now too late, for birds would get nearly all the seed before it could have much chance to grow. The next sowing would be better deferred until March.

Notwithstanding the much improved prospect for roots, and the mild autumn, enabling stock holders to keep their cattle out so much longer than usual, markets for stores are no better, but if anything worse, since November came in. Supplies have been heavy in almost every market except in the case of pork, which is both scarce and dearer.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

DATE.	9 A.M.					IN THE DAY.				
1897. November.	Barometer at 32°, and Sea Level.	Hygrometer.		Direction of Wind.	Temp of soil at 1 foot.	Shade Temperature.		Radiation Temperature.		Rain.
		Dry.	Wet.			Max.	Min.	In Sun.	On Grass.	
	Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Inchs.
Sunday 14	29·624	54·8	52·7	S.	49·0	58·9	49·7	72·6	42·6	0·196
Monday 15	30·018	42·8	41·1	N.	48·8	44·9	41·7	65·4	41·9	—
Tuesday 16	30·410	42·2	40·1	N.	46·0	54·1	36·1	58·6	31·5	0·141
Wednesday.. 17	30·148	54·1	53·0	S.W.	46·2	55·9	41·6	60·6	38·8	0·016
Thursday.... 18	30·146	55·0	52·6	S.W.	48·4	59·1	53·0	84·1	46·8	—
Friday 19	30·490	35·4	35·4	W.	47·1	44·6	34·2	56·4	31·5	—
Saturday .. 20	30·659	44·3	43·5	W.	44·9	51·7	35·1	60·8	34·4	—
	30·214	46·9	45·5		47·2	52·7	41·6	65·5	38·2	0·353

14th.—Bright sun early, and sunny morning; overcast afternoon and evening.
15th.—Rain from 0.30 a.m. to 6 a.m.; fair morning; bright sun from noon to sunset.
16th.—Fine and pleasant with much faint sunshine, and solar halo at noon; showers in evening and night.
17th.—Dull and drizzly with frequent rain till 11 a.m.; fair after noon.
18th.—Fair early; generally sunny from 9 a.m. to noon; cloudy afternoon; clear night.
19th.—Fog, dense early; sunny from 10 a.m., but slightly foggy almost throughout.
20th.—Overcast till 11.30 a.m., then sunny for half an hour, and generally overcast after.

Yet another dry week; not one week since the end of August has had a total of as much as 1 inch. Barometer high at the end of the week.—G. J. SYMONS.

Journal of Horticulture.

THURSDAY, DECEMBER 2, 1897.

THE JOURNAL OF HORTICULTURE *can be obtained from the Office,* 171, *Fleet St., London, post free for a Quarter,* 3/9. Editorial communications must be addressed to 8, Rose Hill Rd., Wandsworth, S.W.

REST IN PLANT LIFE.

IT is an indispensable part of the great plan that all life should have rest. This is an axiom generally accepted; and that all life obtains it under some or other of its varied forms may also be admitted, as well as that the more perfect the rest the more conducive it is to the well-being of the subject. In the vegetable kingdom, difficult though it may be in some particular instances and under certain conditions to recognise this great natural law asserting its rights, the fact remains that Nature's great restorer is not, cannot be denied to any of her subjects for an unduly protracted period without detriment to health, if the deprivation is not indeed sufficiently de-vitalising to result in death.

Possibly there is a greater affinity between animal and vegetable life in these respects than our present somewhat superficial knowledge of the subject has recorded. The illustrious Swede, Linnæus, in his exhaustive studies relative to other phases of vegetable physiology, touches upon this one, which he terms "The Sleep of Plants," and thus paves the way for higher researches into what is comparatively a mystery of the vegetable kingdom. Under normal conditions of atmospheric influence much, of course, may be noted of what is commonly occurring, either in the closing of blossoms as night approaches, or the folding up of composite leaves with the prostration of others; and in the exceptions to this night sleep we may see a close resemblance to the animal kingdom in those subjects of it whose habits are nocturnal. Were anything wanting to establish the similarity which undoubtedly exists in many ways between the animal and vegetable kingdoms, it is found in sexual relationship, and the bar which Nature has put equally upon both against the reproduction of monstrositics in the way of mules; and where we find so much in common it is but reasonable to suppose that in direct relation to our subject the divergence is not great, although the methods may be obscure.

Having touched upon a somewhat abstruse question, which to say the least is an interesting one, we may turn to that portion of it which is of immediate concern, especially at this particular

season, the season of rest with so many objects of our care. Indoors and outdoors, with practically all of these, we know how essential it is that rest should be afforded, and most cannot fail to have observed how any transgression in this respect brings its own punishment. The more obvious this is when we reflect upon the sensitiveness of plant life to undue excitement. Much of this as belonging to outdoor vegetation is, indeed, beyond our control, but there are again notable instances in which a ministering hand helps the subject to perform its functions at the proper season, and to pave the way for a better fulfilment of natural laws under adverse circumstances. But with the objects more directly under control is our present concern, and here the sins of omission and commission are not rarely noticeable.

Both in plant houses and fruit houses the penny wise policy is so often adopted during our all too short summers of trusting to the sun, or at any rate of a remissness as regards firing, which results in the mistaken endeavour to push on plants when they should be at rest, or to complete the finishing process of fruit when too late. In either case a pound of coal is, figuratively, better in early summer than a ton in late autumn. I have lately seen a fine house of Gros Colman Grapes, fine in every respect but the final finish of colour, quite spoiled for that market for which they were intended owing to a laxity in the employment of artificial heat as a balance to make good the deficiency of solar rays earlier in the season; and although considerable effort at some expense was made from mid-September to retrieve lost time, the attempt, it is needless to say, was utterly futile. This is, however, a little aside of our subject. More direct to the point was an instance which came under notice of a young head gardener who found in his new charge a fine house of Crotons. Pressure of work—and new work presses the heaviest—led to a little laxity much as in the way of the Grapes, and an all too short season had waxed and waned ere vigorous measures begotten of anxiety were taken. The effects in this case were disastrous, for the stirring into activity at that time, when the most perfect rest we can give these plants is required, resulted in all but collapse of the whole collection.

In contrast to this one could not but recall the practice of a one-time leading exhibitor of plants. Perfect rest at the proper time and for as long a time as was consistent with the plant's health, or the purpose for which it was intended, was with him a *sine quâ non*. To obtain this each particular plant, as an important unit of the group for which they were intended, was studied to a degree which would, possibly, be a revelation to many of later days; and how well they enjoyed this rest until gently awakened into sturdy, vigorous growth was a revelation too. The successful grower of exhibition plants—and presumably this is the highest test of excellence—insists upon due recognition of this essential requirement, and the means generally employed in intelligent practice are too well known to detain here. Once our exotic plants by skilful management become responsive to control under possibly divergent treatment to their native conditions, and granted that such favourable conditions are maintained, the rest is comparatively easy; otherwise it is an open channel to a sea of troubles in plant growing.

In the infinite variety of character met with in plant life we can surely see much that is analogous to our own phase of existence. With plants, as with ourselves, are to be found those exciteable beings which rest badly, and others there are which sleep like a top during any abnormal elementary disturbance. That plants enjoy rest only when the functions of a season's growth are completed is obvious, and any attempt to compel them, either by withholding water or a reduction of temperature, to adapt themselves to a treatment for which they are unprepared, cannot but lead to constitutional deterioration. Some few years since, during one of those winters of almost Arctic severity which occasionally visit us, the heating apparatus of a range of plant houses in a certain high-class garden gave way under the temporary strain imposed upon it. This, with a fine collection of stove plants, appeared as if unqualified disaster would result. Such, however, was not the case, and it was a matter for surprise, even to the head gardener, that his choice plants came through the ordeal practically uninjured. All possible protection was of course afforded during several severe days and nights ere temporary repairs could be effected, yet what these plants endured, little short of actual freezing, can be imagined. The secret of escape laid in the fact that they were, so far as it is possible for a general collection of plants to ever be, at perfect rest; and, generally considered, the nearer we can habituate our tender stove and greenhouse plants to two seasons only—a season of growth and a season of rest—the latter during the dark days of winter, the better it is for them and all concerned. Other aspects of this question there are, which of course is one that cannot be limited to hard and fast lines; some of these are, perhaps, worthy of further consideration.—INVICTA.

(To be concluded.)

BATAVIAN ENDIVE—PROTECTION.

BATAVIAN Endive, when well grown, is one of the most useful of the winter salad plants. To obtain good results, I find the best time for sowing it in this district (North Midlands) is the middle of July. As soon as the seedlings are large enough in August they are transplanted 15 inches apart in rows a foot asunder. If the soil be moderately light, so much the better, and a position on a border facing the south or east is a suitable one. The ground requires to be deeply dug, though I never have it manured at the time of digging; but if the previous crop had had a dressing of manure so much the better. Two or three hoeings are necessary to prevent weeds and also to promote growth, so that by the beginning of October, when the summer Lettuces are getting over, the Endive will have covered all the ground, in the form of large plants 15 inches across with good hearts, Care should be taken when hoeing not to force the soil into the hearts. as salad must be clean to be properly appreciated.

One difficulty at this time of the year is to find Endive sufficiently dry to tie up to bleach, and without white hearts it is nearly useless. Sometimes, in the first half of October, it can be had perfectly dry, and the quantity, according to requirements, can be tied. In a fortnight these are fit for use, but after the middle of October I have found it harder and have been forced to adopt another plan. White frosts commence, and although Endive will stand a few degrees with impunity, 10° or 12° will injure it almost enough to render it useless, so that some sort of protection must be resorted to. One of the best protectors I know of is the Bracken Fern. Sufficient should be cut about the beginning of October to make a covering a foot in thickness. It lays lightly, is clean, and will keep out a large amount of frost and bleach the hearts at the same time. This, however, cannot always be had, or it may, as in my own case, be growing many miles away, so some other method must be found. For many years I saved the Pea haulm, and this answered fairly well laid on a foot thick, but if much rain or snow fell it became too heavy and decaying destroyed the Endive by about the middle of December. Another drawback was, that if a few old pods of Peas were left on they encouraged mice, and sometimes rats. I have also put a layer of mats on, but that plan was not a success, as the covering did not keep the frost out, and as the hearts became whiter and more tender, its power to resist frost was less. If no frost prevail slates or tiles laid on the plants will bleach them, also long boards laid on the rows. I have sometimes taken the plants up with good balls of earth and put them in a cold frame, but they have never eaten so crisply as when left in the ground where they have made their growth. The damp has also decayed them more quickly.

During the last year or two I have kept Endive well till February, and it is a plan that is within the reach of most gardeners. It is to cover the plants as growing with leaves. We have three or four old Plane trees within easy reach, similar to those planted so extensively in the London thoroughfares, and their leaves are found capital for protection. They are large and weigh lightly, and moreover do not decay so rapidly as the leaves of some trees. About the middle of October, or as soon as frost is likely to present itself, some of these leaves are used just to hide all the plants; but if a quantity of Endive is wanted for immediate use, enough leaves are applied to make a covering 6 inches in thickness, not only for keeping out the frost, but also for darkening the plants to bleach white. By the middle of November all the bed may have this thickness, and this will be found to keep out 10° or 12° of frost. But later, if harder frosts set in, enough leaves can be heaped on to make the covering a foot thick.

As the October and November supply of Endive is cut I let the Plane leaves remain on the ground, and these not being at all decayed are found useful for heaping on the later plants for January and February. By this method I have had good Endive from October to the end of February, a period of five months. After this time strong roots of Witloof or Chicory, introduced into a dark Seakale and Rhubarb house, will maintain a supply of salading till the spring Lettuces are ready.

It is true that a strong wind will blow off or displace some of the leaves, but this inconvenience is well worth attending to for the sake of having good salad in winter. If plenty of mats or netting were at hand, these might be employed for laying on the leaves to keep them secure. One point is to have the leaves raked up as clean and dry as possible. I have not tried the Horse Chestnut leaves, but if I had no leaves of the Plane I should do so, for they are large and fairly light if gathered up as fallen from the trees. The Improved Broad-leaved Batavian Endive if well bleached is not at all bitter, as are the curled varieties sometimes, and makes a salad much appreciated by those who require it throughout the year.—A. HARDING, *Orton.*

[We have found the plan of protecting and blanching Endive by covering the plants with leaves, as described, excellent. The samples sent to us by Mr. Harding were the best we have seen this year. They were not in the least bitter, but white and crisp, with an agreeable "nutty" flavour.]

VEGETABLES FOR HOME AND EXHIBITION.

(*Continued from page* 434.)

PEAS.

To maintain a constant supply of this most popular vegetable requires considerable judgment on the part of a gardener, particularly as it is seriously affected by the caprices of climate. This season we have had striking proof of this. The protracted drought and great heat of summer had much influence over the crop, inasmuch as it caused premature ripening of the straw of early Peas and brought the midseason and late varieties on so quickly that in some cases they were all in at once, and the whole season only lasted a few weeks. To avert this as far as possible judgment is necessary in the proper preparation of the soil, successive periods of sowing, and the choosing of the best varieties.

The Peas most suitable for the dinner-table are the best for exhibition, and they should be shown just when they are in the best condition for cooking. A variety that is heavy cropping, produces large well filled pods of good-flavoured peas, is the best to grow for supplying the kitchen, and as a Pea of this character fills all the requirements of the exhibitor there is no need to make any discrimination between the two. Some vegetables are subject to special treatment at the hands of exhibitors in order to get extraordinary specimens for the show table, but with Peas it is not so. The treatment that gives the best returns to the cultivator also results in the finest pods for show, so that in following out the most accurate details of culture, with soil and climate suitable, the advantages are mutual.

Frequent opportunities have occurred during the past summer of marking the difference in crops of Peas. In some gardens the cropping period was infinitely short, presumably on account of the drought, but in another garden under exactly the same conditions of soil and weather, the crop was considerably heavier and lasted longer. The latter state of affairs may be traced to deep cultivation, for no vegetable pays better for deep and thorough working of the soil. An excellent way of preparing Pea ground is to dig out trenches to a depth of a couple of feet and two spades wide. Place a layer of manure in the bottom, and fill up with alternate layers of soil and manure, adding a little loam from a pasture if obtainable. Several trenches may be prepared in this way during the early months of the year, and the sowings take place in succession.

The ambition of everyone who has a kitchen to supply is to get Peas as early as possible in the season, and keep this up as long as is practical. Artificial forcing of this vegetable has not taken the attention of gardeners to any extent, but whether this will be so in the future is an open question. An old and common mode of forcing is that of sowing Peas at the end of January or early in February in pots or turves cut into small squares, and placing them in a heated pit or hotbed frame. They must be kept close to the glass or they will become drawn and weakly, and after being gradually hardened they should be planted in the permanent quarters in April, by which means Peas may often be gathered a week or so earlier than if sown in the open ground. In some favourable districts a little time is gained by sowing in November, but the risks are too great to be generally recommended.

A south border having the shelter of a wall is the place for early Peas, the sowing of which may take place during favourable weather in January, having previously made the soil friable by thorough working and free use of well-decayed manure. It is an open question which is the better to sow for the first crop—an early dwarf variety like Chelsea Gem or English Wonder, or a taller grower such as William I. The last named is one of the best known Peas for early use, and has no superior; but if the border be a narrow one a dwarf grower will be more profitable, as the rows may be 2 feet apart, and if run parallel in a slanting direction, at an angle of about 60°, a longer length of row is obtained. Where mice are troublesome it is a good plan prior to sowing to wet the Peas and roll them in dry red lead. When the Peas appear they must be carefully watched and dusted with soot to prevent slugs, and also guarded against birds. As soon as they are a few inches above ground it is an excellent practice to draw up the earth to the row on each side, as this forms an excellent means of protection. In addition to those named, Daisy, American Wonder, and William Hurst are useful varieties.

For succession there must be sowings at intervals, and if William I. and Ringleader are sown about the same time as the dwarf varieties mentioned the whole will provide a good early supply. Other sowings of early and midseason varieties should be made in March, including Stratagem, Veitch's Perfection, and Sharpe's Queen. Some growers raise objections to the tall growing later sorts, but they are so prolific they cannot be dispensed with. Telephone, Ne Plus Ultra, and Duke of Albany form a capital trio, though it must be remembered that to obtain the best pods, fit either for exhibition or table, abundance of room must be given between both rows and plants, and stout stakes provided, otherwise they become top-heavy. Attacks of mildew among Peas during the past season have been very common, in most cases the result of drought. As a preventive deep cultivation to begin with and afterwards soakings of water or liquid manure are recommended, but after water has been given the rows should be mulched with strawy manure, litter, or short grass from the lawn, so as to conserve the moisture. Sulphide of potassium at the rate of half an ounce to a gallon of water, sprayed on affected parts, will destroy the mildew, but when once Peas are badly attacked they rarely recover fully.

Large pods for show are sometimes obtained by stopping the growth of the plant after the pods are formed, and then feeding with liquid or chemical manure; but if plain practical methods of culture are adopted pods quite capable of winning a first prize may be picked from the row that is supplying the kitchen.—GROWER AND JUDGE.

SUCCESSFUL GRAPE GROWING.

HAVING seen in the *Journal of Horticulture* an interesting account of Grape-growing at Cobham, on page 452, and a photograph of the vinery (page 459), I thought I should like to send you a photo of the vinery at Tilehurst Nurseries, near Reading, also a bunch of Grapes, so that you may examine the colour and sample the flavour.

When this photograph was taken there were 4635 bunches in the house, some of them weighing 3 lbs., and on the average the bunches would not weigh less than 1 lb. These Vines were only raised from eyes in February, 1892, and planted in February, 1893. The site is over 200 feet above the Thames on the Berkshire side of the river, and until 1892 grew only Briars, Brambles and Furze. It was, in fact, common land. Part of it was let to a farmer for £1 per acre, but he had to give it up in despair, so you see the soil was poor while the aspect is bleak.

The soil is composed of a mixture of sand, gravel, and irony clay. It is only about 9 inches in depth, so I had to take the top off the places where the buildings were going to be erected. This I mixed with bones, and made the border 5 feet wide on each side of the house. Two years afterwards I added 5 feet more on each side, and have still 5 feet of space in the centre of the house, which I hope to fill up this season.

The house photographed is 151 feet by 25 feet. I have taken over 6 tons of Grapes from it since 1893. Of course I do not expect to keep cropping the Vines for fifty years. I should expect to plant three lots of Vines in that time for market work.

The Vines are planted 5 feet apart at the back of the pipes, each Vine consisting of two fruiting rods. One-rod Vines were planted 5 feet apart in front of the pipes to get a crop of Grapes at the top of the house.

The first season after planting, the Vines were allowed to carry six bunches each, on a 10 feet length of rod. Only the front row Vines were allowed a length of 10 feet for fruiting, the back 3 feet each season. The rafters of the house are 15 feet. The second season the house looked pretty full of Grapes, the fourth season's crop you can see by the photo; it was taken by an amateur photographer in the village.

Trusting this will interest you, and possibly encourage your readers by showing them that they need not despair in growing Grapes, even if they have only "common" soil to work with. The nurseries are ten acres in extent, and contain fourteen houses, thirteen of them 151 feet by 15 to 25 feet; one house 100 feet by 18 feet. The proprietor is Ambrose Petrocokino, Esq.—JOHN BRADLEY, *Manager.*

[The bunch of Grapes received was an excellent example of the Black Alicante. The photograph is, unfortunately, far too dark for reproduction, but evidently represents superior cultivation, and both proprietor and manager are to be congratulated on the change they have effected from "Briars, Brambles, and Furze" to splendid fields of Grapes.]

CHEMISTRY IN THE GARDEN.

(*Continued from page* 212.)

We find it necessary to leave somewhat abruptly our consideration of soils, because we think it of little practical value to give attention to the absorptive power they have for certain compounds, unless it can be shown that these substances are of value to crops. We shall now proceed to describe (1) of what substances plants consist, (2) from where they are obtained, and (3) how they may be applied; and then we hope to be in a position to point out the value of soil absorption when certain manures are applied to the soil.

The Food of Crops.

When we try to fathom the mysteries of plant life and what substances constitute their food, we soon find out how little we know concerning this subject; but we also ascertain how simple is the food of plants, and what a few ingredients are needed to nourish them. True it is that manure merchants offer us many dozens of different compounds which may be applied to the soil for the purpose of supplying crops with food; but we shall find that although the array of manures is great, the ingredients they supply to plants are few.

In our first article on chemistry in the garden we stated that ten elements or simple substances were present in all plants. However, to refresh our readers' memory, we may be allowed to again give the names of these elements, which are as follows:—Hydrogen, oxygen, carbon, nitrogen, phosphorus, sulphur, potash, lime, magnesia, and iron. Soda, chlorine, and many other elements are also present in most plants, but we may look upon the first ten as being those of vital importance to crops.

Hydrogen and oxygen, as previously described, are two gases, but when they are chemically united they form the substance we know as water. Water, therefore, is composed of the two gases just named, and no other two substances in the world could form this liquid. The greater part of all plants is water. We all know that if the soil in which plants are growing is allowed to get dry they wilt or flag. Plants take up the water from the soil by means of their roots, and after passing through the stems into the leaves most of it is given off into the atmosphere in the form of invisible vapour. If there be not a sufficient supply of water within the reach of the roots the plants wilt or flag because more moisture is evaporated or transpired from the leaves than is absorbed by the roots. Put a bladder on the water tap and turn on the water. The bladder fills and becomes stiff or turgid. Allow the water to run out and the bladder becomes soft or flaccid. A plant is built up of millions of tiny bags or bladders called cells. When the roots have plenty of water at their command these cells are filled with water and keep the plant turgid; but if, on the other hand, they cannot get sufficient moisture, the cells are not filled, consequently they are flaccid, and the whole plant flags. Water also enters into the composition of the plants and performs other work which will be considered in due time; but from these few facts we see that water is a part of plants.

If we set fire to a heap of wood, and when it is burning cover it with soil, the wood will char or only partly burn, and a black substance known as charcoal will be formed. Now charcoal is a good example of the substance we call carbon. But supposing, instead of covering the burning wood with soil, we had allowed it to burn. All the charcoal or carbon would have disappeared, and only a small quantity of a greyish ash, called wood ashes, would have remained. If we burn leaves, roots, or any part of plants, we always get a certain amount of ash from them, showing that the ash, of whatever it consists, is present in all kinds of vegetation.

Take equal weights of dried wood and dried soil, and try to set fire to them. The wood will burn freely, but the soil—unless it be of a peaty nature—will not do so. The wood is composed chiefly of carbon, and this substance will burn readily; but the soil contains scarcely any, consequently will not burn. Try to set fire to a heap of wood ashes, and you will find that these will not burn any better than soil. This shows us that wood ashes and soil are similar in character, inasmuch as neither of them will burn, and as we proceed we hope to be able to show that the part of plants which burns is the portion they have derived from the atmosphere, while the ash which remains and cannot be burnt is the part which has been obtained from the soil.

I suppose every reader of the *Journal of Horticulture* knows what valuable substances wood ashes are to apply to every kind of crop, it matters not whether they be grown in the garden or greenhouse. They contain the very essence of plant food, as the following experiments will show:—A well-known agricultural chemist (Boussingault) carried out a series of experiments with plants growing in sand. He filled four pots—two with pure sand, and two with pure sand in which he mixed a small quantity of plants' ashes. In each pot he placed two Sunflower seeds, and these were watered with pure water until they had germinated and began to grow. After they had grown for a short time, one of the pots containing the pure sand and one containing the pure sand and plants' ashes he watered with pure water; the other two were always watered with pure water, in which was dissolved a small quantity of nitrate of potash.

The seedlings in the pure sand and plants' ashes, which were watered with pure water, absolutely refused to grow more than about 1 inch in height. The seedlings in the pure sand, which were watered with the weak solution of nitrate of potash, did not grow any better than the two last named; but those seedlings growing in pure sand and plants' ashes, and watered with the weak solution of nitrate of potash, grew into perfect plants, which produced normal flowers and seeds. Indeed, these plants were quite as large as if they had been grown in fertile soil instead of sand. What do these simple experiments teach us? Firstly, that plants cannot grow unless they have a supply of food given them; secondly, that sand, water, and plants' ashes do not contain all the elements of food unless nitrate of potash be added; and thirdly, that plants' ashes and nitrate of potash contain all the elements necessary to produce fully developed plants.—W. Dyke.

(To be continued)

INTELLIGENCE IN PLANTS.

(*Concluded from page* 498.)

In the Arctic regions it is too cold for seeds to germinate with any prospect of future success, and the plants are quite alive to the fact, and, as a rule, develop none. Instead of seeds they send out suckers, or the stems run along or under the ground and take root. In some cases trailing roots are dropped from the plant. Wheat taken there but educated here to depend on the autumn sun, retains its vitality for years, but has no opportunity of going through its usual curriculum and fails; but I fancy if a few bushels were carefully distributed, it is likely enough some of it would discover a *modus vivendi*, and adapt itself and probably get rechristened as a new plant.

Now let us go a little farther. Perhaps some of us may by this time have conceded the question of intelligence, and think that by doing so all difficulties are at an end; but they are not. They are rather beginning again. By conceding intelligence to plants and to their visitors, the insects, also, we land ourselves not exactly in clear daylight, but in denser fog than ever. If we say a bee has senses of sight, hearing, touch, and smell, also a memory, and profits by its experience, we go a long way; but it is not far enough, as you will see by noting what takes place in the fertilisation of the Yucca plant. The flowers each open for one night only. You need not ask me why, for I don't know; but when the flowers open a guest enters. The moth, Yuccasella, collects the pollen, packs it into a bag, and flies off to another flower, clearly knowing where the, as yet, undeveloped seedlings are, and inserts her ovipositor—a hollow tube with horny apparatus attached, and down this tube drops her eggs amongst the future seeds. This would be no use if she did not afterwards proceed to the stigma of the same flower and empty her bagful of pollen there; but she never forgets, for it is her life mission. Without all this these seedlings could never be fertilised, and her own grubs, which hatch out in a few days, would die for want of food. But note, when these grubs hatch they devour the future seedlings; but not all of them. Somebody or something knows that would not do, and some fertilised seedlings must be left to continue the race of the plant, and they always are. Where and whence has she learnt her life duties?

Clearly we are not within sight of the ultimate facts and factors of life. There are deeper and yet deeper depths for human intellect to fathom, and to learn yet more to wonder at and to adore the great and unknown Core of things, for we shall have to credit the cells of which all animal and plant life are composed with that wondrous intelligence, and look on man, animal, and plant, not as an individual, but as a co-operative society, each one of which is an individual endowed with all potentiality for progress.

What is a flower? By what conglomeration of incidental happenings has it been formed? What, or who planned out these multitudinous modifications? It is only a modified leaf, specialised for the production, protection, and distribution of seeds, but specialised with wondrous ingenuity, such self-evident forethought and intelligence, such cute and cunning adaptation of means to their ends. An Orchid, weird and bizarre as it may be, is just three sepals, two petals; three pistils and four stamens make the column; the lip is a petal and two petal-like stamens. The nectary is several modified stamens. Of the seven organs which form the column, four have given up their proper functions; one anther and two stigmas do their usual business, and the others just help them; three anthers no longer producing pollen, but protecting the one that does. What wondrous change of function! what a curious abnegation of self in all this! and by what law, what force, and by what intelligence? One apart and outside the plant, or an intelligence in the plant?—(*Read by* Mr. W. Pickard *at a meeting of the Sheffield Chrysanthemum Society.*)

ERYTHRONIUM REVOLUTUM.

THERE are many Erythroniums in cultivation in gardens, and several of them are very charming, with their attractive flowers and handsome leafage. From time to time these are exhibited at various shows, while occasionally rarer ones are also seen. Amongst these latter may be classed Erythronium revolutum, which was staged at the Drill Hall on April 13th of this year by Messrs. R. Wallace & Co., Colchester. The plant is a native of California, and is said not to have flowered in this country prior to the time of its exhibition. As may be seen from a glance at the illustration (fig. 77), the plant is well named. The colour of the flowers is white, delicately flushed with rose. The Floral Committee of the Royal Horticultural Society awarded it a first-class certificate on the occasion indicated.

SWEET PEAS.

(*Continued from page* 513.)

BEFORE I come to the cultivation and the selection of what I consider the best varieties, I should like to say something on the fertilisation of the Sweet Pea. It may be said they are never, or very rarely indeed, fertilised by insects, though not because bees and other insects do not visit the flowers, or that they never collect pollen or honey from them. In the case of the Sweet Pea, and I think I may include the culinary Pea and many others, of what are called papilionaceous, or butterfly flowers, fertilisation takes place before the flowers open, so that it is impossible for either insect agency or the wind to have any effect on the essential organs. That fertility does take place before the flowers open can easily be proved by opening a flower bud a day or two, or perhaps two or three days, before it expands, when it will be found that the anthers have discharged abundance of pollen, and that the stigma cannot help being fertilised. This function being performed in the flower bud has not been much understood. It is, indeed, an exception to the general rule, and it will explain, I think, the reason why so few varieties have occurred up to a comparatively recent date. I should say that the varieties up to twenty-five or thirty years ago were the results of sporting variations in the plant, observed and perpetuated, and not the result of any cross-fertilisation. Artificial fertilisation, with the object of obtaining new varieties, must be done with great care. The flower bud has to be forcibly opened and the anthers removed before they discharge their pollen, and the foreign pollen introduced. It requires some experience to know the exact time for this operation.

A papilionaceous or butterfly flower has five petals; the upper and largest one is called the standard, the two side ones the wings, and the two lower, often united, form the keel. These fold one over the other so beautifully that they completely shut out all insect agency until the flower has expanded, when a bee can, by settling on the wings, prise or press out into view the anthers and stigma, and so collect pollen; but the function of fertilisation has already been done. It has been said, and I am not going to say that it is not true, because I believe as a rule it is true, that there is more potency in foreign pollen than in own pollen—that is, pollen brought from one flower of the same species and applied to the stigma of another flower of the same species, is more effective, and further, that benefit has been derived from crossing between individual or separate flowers on the same plant.

Yet it is worthy of remark that the variety Painted Lady Sweet Pea has been known for at least a hundred years, and that its constitution is equal in vigour now to many of the newer varieties, and yet it has all this time been fertilised exclusively by its own pollen. Sir John Lubbock says in his interesting book, "British Wild Flowers in Relation to Insects," that it is probable that all flowers which have an irregular corolla are fertilised by insects. Now we all know that the Sweet Pea has the most irregular of corollas, and Darwin says, "Everyone who has studied the structure of papilionaceous flowers has been convinced that they are specially adapted for cross-fertilisation," and then goes on to say, "The case of Lathyrus odoratus is curious, for in this country it seems invariably to fertilise itself." Darwin does not think the flowers are fertilised at an early stage. He acknowledges that the anthers discharge their pollen in the bud, and that it adheres to the viscid stigma, yet he found the pollen tubes were not exserted. Darwin is inclined to believe that with other and larger insects, such as may exist in the original home of the Sweet Pea, the flowers would intercross, and he quotes the authority of an Italian professor, who says "That it is the fixed opinion of gardeners there, that is, in Sicily, that the varieties do intercross, and that they cannot be preserved pure unless they are sown separately." I may say we grow a collection in their separate colours in the immediate neighbourhood of six or eight hives of bees, and have never had the varieties mixed in the slightest degree.

Respecting the seed of Sweet Peas, there are a few peculiarities worthy of note. White flowering varieties, as well as the primrose coloured, have seeds of a light colour, with the exception, I ought to say, of Mrs. Sankey, which is dark. This is curious; but as this variety has a tendency to become tinted it may explain the anomaly. Again, we have several varieties of pale blue and kindred shades which have somewhat small, wrinkled seeds. When I have sent these varieties away with others, I have more than once been told that certain kinds were old and no good. To expose my own ignorance: when I had the wrinkled seed for the first time (I think it was Countess of Radnor) I did not like to sow it with the other kinds in case there should be a blank; so I sowed it by itself, and, of course, it grew as well as the others. I have sown five or six-year-old seed, and if a little slower to move, it turned out almost, if not quite, as well as that obtained the previous year. In picking the pods for seed, which is generally done when the pod is brown, it is a mistake to shell the seeds at once, as they are not often at this stage thoroughly matured. They should be kept in a dry place for a time and shelled later, when they will be thoroughly ripe.

In the cultivation of the Sweet Pea several methods have been suggested. Some recommend sowing in trenches, like Celery; but this, I think, should only be adopted when the soil is very shallow, sandy, or gravelly. We heavily manure and trench our ground in the autumn, and never grow them two years in sucession in the same place. We always select a good, open, and prominent position for our collection of named varieties, and have them in short, 6 feet rows with walks between each series of rows. As our collection numbers about 100 varieties it occupies a considerable space, and this spot is more visited during the Sweet Pea season than any other part of the garden.

Our two earliest rows of Sweet Peas are generally mixed, and sown in boxes early in February and transplanted when ready in the same way as the garden Pea. Our general collection we sow, if the ground is

FIG. 77.—ERYTHRONIUM REVOLUTUM.

in good working order, the first week in March. For the drills we use a 6-inch flat hoe, and make them about 3 inches deep. It is easier to distribute the seed in a drill 6 inches wide than in one drawn only with the corner of the hoe. We almost always sow too thickly; 3 inches apart is quite near enough to produce the best results. I, in common with most others, sow more thickly. In the case of the Sweet Pea it is somewhat excusable, for we have in view the probable depredations of our three great enemies—birds, mice, and slugs. With the greatest care we frequently have them gappy and patchy, and have often to transplant from the thicker places to make up the vacancies. To prove that thin sowing is better than thick, the new kinds that come out are expensive, and very few in a packet. We have sown these—or, rather, as we generally do, transplant them from pots—4, 5, or even 6 inches apart, and they always make the strongest rows and produce the largest flowers. I have heard on good authority of one single Sweet Pea plant bearing 200 fully developed flower-stalks at one time. After sowing the seed we cover it with about 2 inches of soil, so that the drills are left a little hollow.

As soon as the seedlings are through, we draw the soil up on each side of the drills, and well tread on both sides. This is strongly recommended by Mr. Eckford, and should be repeated several times, and to a distance of 18 inches on each side of the rows. This is considered so important in America, where the Sweet Pea is exceedingly popular, that they call it "Firming the soil."

The staking is generally done by one man who understands the work. A little brushwood is first put along, then the stakes to the desired height. In some seasons they grow much higher than in others. When very hot and dry, especially in sandy or gravelly soil, they become stunted

and quickly go out of bloom. I read the other day—not, I think, in a gardening paper—that the higher the sticks, the higher the Sweet Peas would grow, and this is not perhaps quite without a suspicion of truth. Heavy waterings will occasionally be necessary, and a weak application of liquid manure is beneficial. Light waterings are of no use; a good syringing would be better. Mulching is of great value. In our case we are not able to mulch, as the birds, especially the pheasants, which abound with us, scratch it all over the place.

Small clumps of Sweet Peas in the herbaceous border or wild garden are very charming. I ought to mention here that we grow our earliest supply of Sweet Peas in pots, and flower them in a cool house; they well repay the trouble. These are always grown in distinct varieties.

Autumn sowing of a portion is to be recommended, as the plants get more firmly established, and will stand the dry weather better, and give earlier bloom. Market growers adopt this system, I believe, and a good row of autumn-sown Sweet Peas is highly remunerative.

Nothing is more charming and refreshing, I think, than to see the earliest sprinkling of flowers on the nice green foliage of the first row of Sweet Peas. When this happens, cutting may begin, and the more it is persisted in the better, for if we allow the pods to form, the succession of flowers will gradually stop. The plants cannot work for long in two opposite directions. This, then, is a most important point, to keep all pods as soon as they show carefully picked off. It is not an easy matter, especially in very hot weather. I once tried a row during a spell of dry weather, and picked off not only the pods, but all the flowers, and the relief to the plants was remarkable.

It is possible, when the pods are carefully picked off, for one sowing to last the season; but we generally make one or two later sowings. Pinching in or stopping, when weakness in blooming shows itself, is often done with good results. Shearing the rows like a hedge I have heard recommended; but the after growth in this case is what we call stubby, and the produce is generally but one or two flowers on the stalk. In cutting Sweet Peas, we find it best not to cut the bare flower stalks, but just below. This includes open flowers, flower buds, leaves, and tendrils. A bunch cut in this way is far more charming and agreeable as a present than a dense one of bare Sweet Pea flowers, and so much more convenient and effective for arranging in vases. It may be considered a sacrifice to cut the tips of the plants as I have described, but we do not find it so; on the contrary, it is an advantage, as it tends to promote continuous flowering, and is really a gradual system of stopping, which is to be preferred to the usual plan of heading them all back at one time.

Some strong growing varieties give four flowers on a stalk. I think I prefer three, as the odd number seems more effective and pleasing than four or two. When we have shortened back in the ordinary way, the kinds that have given us the best second blooming were Princess Beatrice, Royal Robe, Princess May, Dorothy Tennant, Meteor, Mars, Celestial, Firefly and Salopian. These were the first to recover. The flower stalks were in all cases shorter, and the flowers, as a rule, were one less on a stalk than in the first blooming.—(*Paper read by* Mr. G. STANTON, *at a meeting of the Reading Gardeners' Association.*)

(To be concluded.)

A BENIGNANT NOVEMBER.

NATURE for some weeks past has had a spring-like aspect, atmospheric influences resembling those of April without its characteristic showers. Very often of late, looking out from the windows of the manse upon the majestic Bay of Luce, calm as a sleeping child, I have been instinctively reminded of those words of the great "High Priest of Nature," "The gentleness of Heaven is on the sea."

I am interested to learn from his frequent contributions to this Journal, that the horticulturist of the Solway, Mr. S. Arnott, has still so many beautiful flowers around him, for I feel assured that this gifted naturalist is never happier than when fondly contemplating, or, with graphic pen, delineating the still lingering life and sweetness of these.

Here, too, there are many reminiscences of autumn, and even—as I have indicated—of virginal spring. At present (November 27th) I have many Auriculas in bloom, while other varieties, touched as if by a vernal inspiration, are rapidly preparing to follow in their train. This evening I cut several very charming half-blown Roses from Madame Pernet Ducher, White Lady (positively her last appearance this season), Comte de Raimbaud, one of the most reliable, especially in late autumn, of our Hybrid Perpetuals, and therefore manifestly a Rose that should be included in every comprehensive collection; Gloire Lyonaise, the always graceful Anna Olivier, and Medea, the finest yellow Tea Rose that our country has produced. Another of Mr. William Paul's latest and loveliest productions, Enchantress, is enchanting me at present by her winter activities in the special direction of flowering shoots. Should Empress Alexandra of Russia, with its uniquely beautiful colour, prove equally floriferous, it will undoubtedly rival, if not surpass, the noblest productions of the late M. Guillot, of whose greatness as a rosarian I have many gleaming memories in my garden every year.

The sweet-scented Violet and the Naked-flowering Jasmine console me for the absence of the fragrant Viola, whose beauty has been relegated to the regions of memory till Nature silently assumes her vernal transfiguration, and we realise once more the deep beauty and divine significance of that annual earth poem, the resurrection of the spring.—DAVID R. WILLIAMSON.

BRIEF NOTES ON ALPINE FLOWERS.

(*Continued from page* 513.)

EVERGREEN SHRUBS.

THE furnishing of the rock garden is a question of considerable difficulty, and any answer to it would be necessarily subject to the taste of the owner and the design of the garden itself. It may, however, be taken for granted that no collection of Alpine flowers is complete unless it includes a number of evergreen shrubs of dwarf habit. There are doubtless a very large number of the smaller Alpine flowers which are of non-deciduous habit, but the inclusion of a considerable addition of taller growth will do much to improve the appearance of the rock garden and increase the pleasure of its possessor. This is generally accepted, and should be acted upon even in the case of rockeries of a simple nature, and but slightly elevated above the soil. Skilfully planted, the shrubs may not only be objects of interest in themselves, but be also of value in sheltering others from cold blasts or in giving the slight or deep shade some plants require.

There is a wide choice among these. If the rockery, a picturesque structure formed of large boulders or blocks, some of the Ivies may be used to cover these, and give a welcome greenery in midwinter. Among the large stones may be grown some of the dwarf Conifers, Rhododendrons, Escallonias (in mild districts), Ericas, Euonymuses, Pernettyas, Cotoneasters, Veronicas, Eurybias, Genistas, Berberises, Cratægus pyracantha, Juniperuses, Sedums, and a number of others. In addition to their foliage, never more pleasing than in autumn and winter, many are decorated with coloured berries, which, so long as fresh and undevoured by the birds, are objects of great beauty and interest.

The flowering evergreen shrubs are of especial interest to many, as, in addition to the value of their leaves, we have that of charming flowers at other seasons. One thinks that they may thus be taken notice of now, especially as some remove readily with a ball attached at almost any time.

ALPINE RHODODENDRONS.

It is doubtful if any evergreen shrubs suitable for the rock garden attract more admiration than the Rhododendrons, of which we have several admirably adapted for the choicest collection of Alpines In large and picturesque rockwork some of the best of the larger hybrids may also be grown, but it is to the dwarfer species and their varieties that we must principally look at present, and it is therefore my intention to give a few notes on these, supplemented afterwards by references to other flowering evergreen shrubs.

RHODODENDRON CAUCASICUM.

The first in alphabetical order is R. caucasicum, a valuable and pretty species, introduced from the Caucasus about 1803. It grows about 1 foot high, and has corymbs of pretty flowers, white inside, and rose-coloured outside, and ovate-lanceolate leaves, rather iron-coloured beneath. Perhaps the best of its varieties are R. c. Nobleanum and R. c. pulcherrimum, both of which have rose-coloured flowers and oblong leaves. Like the others named, it should be sheltered from cutting winds.

RHODODENDRON CILIATUM.

This is one of my special favourites; but it has the disadvantage of being a little tender, and should have a sheltered position from cold currents of air. It is sometimes badly cut by severe frosts, and its beauty much destroyed for a time. The writer is never likely to forget the effect of a fine plant of this Alpine Rose on a steep bank of a rock garden, in which is a *recherché* collection of Alpines. The variety was that known as R. c. roseo-album, and in combination with other plants in bloom at the same time nothing could be more beautiful. It flowers in May, and grows taller than R. caucasicum. The flowers of the typical species are of a light purple in terminal heads. They are of good size, and in combination with the pilose and prettily ciliated elliptical leaves look exceedingly beautiful. The variety mentioned is even more beautiful, and should have a place wherever there is room and a suitable position for it. About 2 feet is the height given in works of reference; but this varies according to soil, position, and moisture. It comes from the Sikkim district.

RHODODENDRON FERRUGINEUM.

This is one of the commonest of our dwarf European "Alpine Roses," and is frequently mentioned by writers who visit the European Alps. Its marked feature is the rusty appearance of the under surface of the leaves, caused by the colour of the dots which are so profusely scattered over them. It can hardly be said that this is an improvement to the beauty of the shrub, but this colouring is only seen in certain positions, and thus does not to any great extent detract from its usefulness. The oblong leaves are smooth and glossy above, and the flowers are of a fine scarlet marked with yellowish dots. It grows from 1 foot to 1½ foot high, and flowers from May to June. It is one of the hardiest of the Alpine Rhododendrons, and may well be planted more extensively than hitherto. It is also comparatively cheap and removes well. There is a pretty white flowered variety.

There are a few other species and hybrids which, with notes on the most suitable soil, will be dealt with in a succeeding issue.—ALPINUS.

ORCHARD HOUSE FRUIT.

I FIND from records of my father's that in 1848 Pears were all destroyed by May 2nd, and that in June of the same year the Cherries and Plums were an entire failure, but the crop of Apples a partial failure. In 1849, on April 19th, there was snow, while on the 21st the thermometer fell to 22° Fahr., destroying the crops of Pears and Plums. In 1850 the thermometer registered 23° on May 3rd, which seems to have destroyed the Pears and Plums then in full bloom. In 1851 the record on September 30th is :—"No Pears, no Plums, except Early Prolific. Apples abundant." In 1852, on April 19th, the record is :—"Frost very severe ; thermometer down to 20°. Fruit suffered severely, and appears to be all killed." In 1853, on April 25th, there was a steady fall of snow, and I find a remark that the winter has been fatal to many trees, Apricots and Peaches killed, and, to complete the destruction, another fall of snow on May 9th blocked the traffic on the Yorkshire railways, and the record of the year is that there was nearly a total failure of out of doors fruit in the South of England. In 1854, after a deliciously warm early April, the weather changed on the 25th, and the thermometer fell to 25° Fahr., the fruit trees, which were then in full bloom, suffered severely, and appeared to be entirely destroyed. My father adds that he never knew, up to the above date, a spring so dry, so sunny, and so full of promise. On July 15th he wrote :—"No fruit, and all the fruit trees, young and old, covered with aphides."

I have made these extracts to show how, under these adverse circumstances, the orchard house would command the attention of fruit growers weary of constant losses from the weather. The gardener could not be responsible for the weather, and when a new method of protection and culture was pointed out it was eagerly appreciated. There were, of course, many mistakes. Perhaps the system was made too easy ; but it is a fact that the most successful were those who went to work with an open mind and employed men who were not professed gardeners, and who would obey the instructions given in the book which my father, with a happy knack of choosing titles, called the "Orchard House." The houses which he recommended were span-roofed, with side and roof ventilators, the side ventilators being formed of a plank 18 inches wide in 16 feet lengths, opening on hinges downward. Roof ventilators, three on each side of a 100-feet span-roofed house. This ventilation is very effectual. There are now many labour-saving methods which were not existing when orchard houses were first designed.

A house 100 feet by 24 feet will provide an ample supply of fruit from May to October, the number of Peaches and Nectarines gathered from one house amounting to 3816, the same house giving shelter from spring frosts to Pears, Plums, and Apples, these being turned out in the summer. Another size for a smaller garden is a span house 60 feet by 18 feet, 10 feet to the ridge pole ; this is constructed like the other, and will give a large supply of fruit. I do not recommend lean-to houses, the light given by the span being much more plentiful, and the flow of air uninterrupted. I may mention that the floor of the house should not be paved, the soil giving off atmospheric moisture which is very acceptable to the trees.

PEACHES AND NECTARINES.

After building the house the next proceeding is to furnish it, and most cultivators, after securing the luxury of an orchard house, will naturally desire to grow the most luscious fruits. As Peaches and Nectarines cannot be grown in the open air with the same facility as Apples and Pears, they naturally take the first place under glass, and to bring about success, the soil for potting must be the first consideration. After many years of experience I find the following preparation the most useful : Take the top spit of an old pasture consisting of a calcareous and tenacious loamy soil, dug and exposed to the air for three months ; it must be carefully examined, and all larvæ of the cockchafer destroyed, also all beetles ; surface soil, if of good quality, may be used if no pasture is available, but the second spit should be avoided, and also all soil dug from a pit. Two-thirds of loam and one-third decayed manure should be chopped up together, not sifted ; if lumpy so much the better. The tree must be firmly planted ; if lime is not present in the soil it should be added.

After providing the soil, the next proceeding will be to choose the trees. Peaches and Nectarines will be the principal kinds, and with these the house may be furnished from the beginning of July to the beginning of October, the sorts for this purpose, arranged in order of ripening, consisting of—July 1st, Alexander, Waterloo, Amsden June (which I believe to have changed places with Alexander), Early Beatrice, which ripens generally in the orchard house from July 6th to 10th, and, though much smaller than Alexander, is hardier and will produce a crop year after year ; Early Louise, from the 10th to the 14th ; Early Rivers, which is liable to split at the stone, and hence requires artificial fertilising. Then come Hale's Early, Early Alfred, Early Silver, Rivers' Early York, Dagmar, Early Albert, Condor, Merlin, Crimson Galande, Dr. Hogg, Falcon, Early Grosse Mignonne, Goshawk, Magdala, Alexander Noblesse, Grosse Mignonne, Violette Hâtive, Bellegarde, Dymond, Noblesse, Royal George, Stirling Castle, Prince of Wales, Barrington, Walburton Admirable, Sea Eagle, Gladstone, Princess of Wales, Neetarine, Osprey, Lady Palmerston, Late Admirable, and Comet. The best Nectarines are Cardinal, Early Rivers, Advance, Lord Napier, Dryden, Improved Downton, Goldoni, Stanwick Elruge, Spenser, Newton, Milton, Byron, Humboldt, Rivers' Orange, Pineapple, and Victoria. I seem to give more varieties than necessary, but in a large orchard house room can be found for all, and as they all vary slightly in growth and maturity, they will be found interesting and useful for maintaining the supply without a glut of any special sort, as sometimes happens with wall trees.

The orchard house is responsible for the numerous seedlings which we have introduced into culture. These seedlings began with the introduction of the Stanwick Nectarine into England in 1843, first put into commerce in 1846. This Nectarine brought a new strain into England. My father raised the Victoria Nectarine, followed by the Stanwick Elruge, both bearing distinct marks of the Stanwick race. Following this good example, I fertilised many Peaches and Nectarines, and have, I think, succeeded in establishing a race of these fruits very distinct from the old and well-known kinds which have not changed for centuries.

APRICOTS.

The Apricot is another orchard house fruit of great value, although it is said by some to be difficult of cultivation. It ought not to be, for it is a native of very cold districts. In Knight's "Where Three Empires Meet," page 163, he says :—"At Bazzo, 13,400 feet above the level of the sea, Apricot trees in full bloom." Again, on page 253 :—"A succession of orchards of Apricot, Cherry, and Walnut. Oasis of Kapalu.' Mrs. Isabella Bishop in her book, "Among the Thibetans," page 78, says :—"The lower Nubian Valley is wilder than the upper, its Apricot orchards are more luxuriant, access to the villages is usually up stony beds of streams, over-arched by Apricots. The camping grounds are Apricot orchards. Apricot foliage is rich, and the fruit small but delicious. The largest tree I saw measured 9 feet 6 inches in girth. Strangers can eat as much fruit as they please provided the stones are returned to the owner. The kernels are used for a very clear, white, fragrant, and highly illuminating oil ; this is used, and very largely, in cookery, children are rubbed with it daily, and are fed on it mixed with barleymeal made into a paste.' In "Heart of a Continent,' Captain Younghusband says :—"Saser Pass, 17,800 feet—Chitral. By the beginning of April the Apricot burst into blossom and the valley was covered with clouds of white bloom. Peaches, Pear, and Apple trees came into leaf." This proves that it is anything but a tender tree, and, in the orchard house, it should have abundance of air when flowering. It is not so liable to canker when grown in pots ; lime is absolutely necessary. The varieties Peach and Moor Park are the best to grow. The Royal and Alberge de Montgamet Hâtif are also very good.

CHERRIES.

Cherries are pre-eminently orchard house trees, as, although they are orchard trees, the amateur gardener has little chance of eating the fruit unless he tackles it half ripe. The fondness for Cherries exhibited by birds, who content themselves with taking a piece of the ripening fruit, prevents the owner from enjoying it. Sir Richard Owen called this "salary to the orchestra," and said it was worth paying for, but I do not think people would generally agree with him. Under glass, however, all is changed. Ventilators covered with wire netting prevent these depredators from doing more than gaze with wistful eyes, for it is generally death to enter. Cherries under glass may be enjoyed from the end of May until the end of August, and, carefully selected, the sorts will last as long as Grapes. The earliest kinds of Cherries are : Bigarreau de Shreken, Early Rivers, Belle d'Orleans, Frogmore Bigarreau, Bigarreau Noir de Guben, Guigne Annondy, and others, which will prolong the season until the beginning of September. Some of my Cherry trees, although bearing annually large crops of fruit, have lived in the same pots for fifteen years or more, and are yet perfectly healthy and fruitful. A Cherry house, either in bloom or in fruit, is a picture of the greatest beauty.

PEARS.

Pears must be included, but they do not need more than two or three months of protection. Placed in the house in February the trees can be taken out when the danger of frost is passed, if this period can be determined satisfactorily. During the winter months, after being duly potted, they can be stored very closely, being carefully protected from any possible degrees below zero. In February the clumps may be opened, and the trees set out ready for transmission to the orchard house. I have never found these trees suffer from frost, and although the fruit does not follow the promise of the bloom, which is excessive, there is always enough left for the trees to mature. It is said that Pears grown in an orchard house lack flavour, but this, I suspect, is want of management. Pears are greedy, and if the water supply is not kept up with something more generous the flavour is apt to suffer. It is hardly necessary to say that for pot culture the sorts should be strictly confined to those which are large and handsome.

For a selection I would suggest Jargonelle, Beacon, Clapp's Favourite, Bon Chrêtien (Williams's), Beurré Superfin, Souvenir du Congrès, Louise Bonne of Jersey, Marie Louise, Conseiller de la Cour, Glou Morçeau, Doyenné du Comice, Pitmaston Duchess, Beurré Diel, Beurré Bachelier, Beurré d'Anjou, Princess, Winter Nelis, Josephine de Malines, Easter Beurré, Passe Crassane, Beurré Rance, Olivier de Serres, and Doyenné d'Alençon. All these are good, large, and grow well. It must be remembered that north of the Trent many of the Pears which ripen in November in the South of England will there keep good till Christmas. In all cases of cultivation undertaken for Pear growing I should recommend the use of perforated pots and annual root-pruning. An avenue of fifty or 100 trees, 10 feet wide, in a garden, with the pots carefully concealed, and the trees full of fruit, is a sight that must be satisfactory both to gardener and owner, and this can be produced year after year with no more fear of failure than should attend the cropping of Cucumbers.

Apples.

Apples grown under glass develop a flavour and colour hardly ever attained in the open air, especially some English and American varieties. The best of these are the Cox's Orange Pippin, which I have seen almost as full of juice as an Orange, with cells as fully developed as a Nectarine, and as rich in flavour; Ribston Pippin, rather hard, but very good; Golden Pippin, small, but capital; Braddick's Nonpareil, and all the varieties of Nonpareil, of which there are many; Calville Blanche, the Pearmains, and King of the Pippins are among the best of the English Apples; of the American Apples Newtown Pippin, Northern Spy, Mother, Reinette du Canada, the Melon, and Washington are the best. The trees require the same treatment as Pears. Provide the fruit buds by stopping the first summer growth at five buds from the base when the shoot has made from nine to ten leaves; after the first stopping allow growth for a time, generally till about the end of July, and then repeat the pinching; with a tree full of fruit much summer pruning will not be necessary. I have recommended the removal of Pears to the open air during the summer, but Apples will endure the heat of a glass house without loss of flavour; on the contrary, it is developed to an extraordinary extent. The trees require as much sun and as good a position as the Peaches and Nectarines, and must be fed with the same care; the more food the better the fruit, and it is worth the trouble.

Plums.

In selecting varieties of Plums some care is required, so as to have fruit through the summer and autumn. The very early and very late Plums in the South of England seem to ripen in the orchard house without any loss of flavour; but the midseason Plums, such as the Green Gage, De Montfort, and the Jefferson, are, I think, improved in flavour by being ripened in the open air. About the end of June they should be removed in some warm and sheltered situation. In wet and moist climates, where the Green Gage ripens with difficulty, they must remain under glass all the summer. For the first take the Early Favourite and Early Prolific, two excellent sorts which ripen about the middle of July. Next in succession come the Czar, Early Orleans, Early Transparent Gage, De Montfort, Denniston's Superb, Green Gage, Angelina Burdett, Kirke's, Guthrie's Late Green, Reine Claude de Bavay, Purple Gage, Coe's Golden Drop, Jefferson, Grand Duke, Golden Transparent, and Late Transparent, these last being sweetmeats if left long on the trees. These are all dessert Plums; but some of the well-known culinary Plums are also worth growing. An orchard house of Plums offers an agreeable sight in the autumn if the colours are arranged. I have been fortunate enough to obtain some seedling Plums that prolong the season to the end of October; these are the Primate and the Late Orange. Some Plums of the future have been sent from California under the title of Japanese Plums, but it is doubtful if they will succeed in unheated orchard houses. Any advance in cultivated fruit is a distinct gain, and the so-called Japanese Plums may be an improvement; but I think the Green Gage and its relatives will be cultivated for some generations yet to come.—(*Paper read by* T. Francis Rivers *at a meeting of the Horticultural Club.*)

EDGBASTON BOTANICAL GARDENS.

A recent casual visit to these interesting gardens disclosed a fine collection of Chrysanthemums (about 1200 plants), amongst which were contained several of the leading varieties. Some of the earlier sorts, however, were past their best, though such varieties as Edith Tabor, Niveus, Mutual Friend, Graphic, Mons. Panckoucke, Souvenir de Petite Amie, Mdlle. M. Hoste, Rose Wynne, Viviand Morel, Miss Ethel Addison, Mrs. H. Weekes, Duchess of Fife, Phœbus, Charles Davis, Lord Brooke, Etoile de Lyon, Mrs. C. Blick, J. Agate, and many others were fresh and bright. We were informed that the display had proved a source of considerable attraction for several weeks past to the numerous visitors to the gardens.

When passing through one of the houses our attention was drawn to a fine and well-grown collection of Primulas in close association with several plants of the useful winter flowering Plumbago rosea. Here, too, was observed Begonia insignis with its flesh pink coloured flowers, now too seldom seen, and which, when well grown, as it was by the writer upwards of forty years ago, still plays second to none for late autumn and winter work.

A visit to the Orchid compartments almost at any season of the year is sure to evolve something more or less interesting, and on this occasion attention was especially drawn to a new hybrid Cypripedium raised by Mr. Latham, the courteous Curator. The plant was displaying its first blooms. Its specific name is Deedmanianum, in honour of the expert grower, Mr. Deedman. The hybrid in question is a cross between C. Spicerianum (the seed parent) and C. Chamberlainianum, and though it evidences markings of both, it may be considered a glorified Chamberlainianum both in foliage and flower. Its dorsal sepal resembles in colour and markings the seed parent.

Conspicuous amongst other Orchids in bloom were two or three specimens of the extremely pretty and interesting Cœlogyne (Pleione) maculata growing in baskets suspended from the roof of one house. A large specimen of Cymbidium giganteum, with several long racemes of brownish-purple flowers growing in close proximity to the former, was especially attractive, as also were examples of such as C. Mastersi, Vanda Kimballiana, Cattleya Bowringiana, and the delicately green-tinted and sweet-scented Lycaste lanipes. Healthy specimens of Lælia autumnalis were on the eve of making a fine display. Amongst Cypripediums several specimens of the good old insigne and C. Spiceriannm contributed to the spectacle, whilst Cattleyas, of which there had been an attractive display, were on the wane.—W. G.

LILIUMS.

Amongst the most beautiful of our flowering plants, Liliums must undoubtedly be accorded a first place. They are so useful, both in the town and country garden, that everyone should grow them. They are of easy culture, and reasonable in price, two very great advantages to many growers. Liliums are, I might almost say, essential in every greenhouse; their place cannot be taken by any other plant in cultivation. The majority of them are free flowering, and last when in bloom for a considerable time in a most perfect state. Yet another distinct advantage which belongs to these plants is, that if by any accident a bud should get broken off, it will, when placed in water, open quite perfectly. The fragrance is most delicious, perhaps a trifle too pronounced for some, but not so much as to render them objectionable to anyone. They have been grown in our gardens and greenhouses for many years, and appear to have been known from time immemorial. Shakespeare mentioned them in the following words:

"Like a Lily,
That once was mistress of the field, and flourished."

And Spenser speaks of the Lily as the

"Lady of the field."

These lines are singularly appropriate and applicable to the chaste beauty of the Lily.

One of the most important features in the cultivation of Liliums is to provide a suitable compost for them. They will certainly grow in almost any soil that can be procured, but according to the old adage, that "A thing worth doing at all is worth doing well," applies to Liliums. It is always advisable to get the best, and the following will be found to meet their requirements:—Three parts of good turfy loam, one part thoroughly decayed cow or horse manure, one-sixth part of coarse sand, with a small quantity of crushed charcoal and bonemeal. If it is found difficult to procure manure, decomposed leaf mould can be substituted with a certainty of almost equally as good results, and road drift can be used for the sand. It is important that these ingredients should be thoroughly incorporated. The compost ought not to be wet, neither should it be dust dry; if used when it is pleasantly moist the bulbs will not require watering after potting until they start into growth.

In potting the bulbs, which should be procured now, care must be taken not to place them too high in the pot, as the stems of Liliums emit roots, rendering when they are making rapid growth a good top-dressing necessary, which should consist of a compost containing a rather larger percentage of leaf mould or manure than that recommended for potting. The size of the pot must of course be regulated by the species grown and the size. The same sized pot would not do for a L. lancifolium as would be suitable for a L. longiflorum. Good drainage must be accorded to them, for though water may be given in great quantities with absolute impunity, Liliums do not like soil which has become sour and sodden. Under such conditions the bulbs, owing to their scaly substance, rapidly decay. A little rough material should be placed immediately over the drainage, which helps keep it clear and free.

After potting the pots may be put in any cool place. If space in the greenhouse will not permit of their being placed in during the whole of the initial stages of growth, they may with safety be put outside, the pots being plunged in ashes or cocoa-nut fibre refuse to prevent the frost either getting to the roots or cracking the pots. Do not, no matter where they are placed after removal from the plunging bed, allow the young growths to become drawn and weakly by full exposure to the light, as if they do no one can expect to have a good quantity of fine flowers as a reward for their labour.

The finest Lilium for pot culture is L. auratum (Golden-rayed Lily of Japan). It is very beautiful, deliciously scented, and one of the easiest to grow, success with ordinary care being practically certain. There are various forms of it, but the one most commonly seen is very fine, and is, moreover, very reasonable in price. L. speciosum (lancifolium) rubrum and album should not be omitted from any collection however small, the pure white recurved flowers of the latter being most charming. The Bermuda or Easter Lily (L. Harrisi) is another, which is an acquisition to any collection, no matter how large, its long trumpet-shaped pure white flowers having a most chaste and exquisite appearance. It can easily be had in flower at Easter, hence its common name, when it was very largely used for church decorations.

Amongst the many other very beautiful varieties well worthy of cultivation are the following, which are chosen for their easy culture, certainty of flowering, and bright, cheerful appearance when at the summit of their beauty:—L. Thunbergianum, red; L. Krameri, blush pink; L. Krætzeri, pure white; L. canadense, the flowers of which vary from yellow to orange, and are spotted with black; Humboldti, golden yellow, with crimson spots; Washingtonianum, the flowers of which are white tinged with lilac; pyrenaicum (Turk's Cap), yellow with black spots. Superbum is a beautiful variety with orange coloured flowers having black spots; and szovitzianum, which has reflexed flowers of citron yellow colour sparsely spotted with black.—D. R.

Notes & Gleanings

WEATHER IN LONDON.—There was a very sharp frost during the early hours of Friday morning, and it continued cold throughout the day. In the evening, however, rain commenced to fall, and continued at intervals through the night and over Saturday, Sunday morning being also wet. During the evening of the latter day the wind gained strength, and blew strongly until Monday evening, when a little rain fell. It was cold, and the streets and gardens were quickly dried. There was rain again on Tuesday evening, but not for a very long time. Wednesday was fine.

—— WEATHER IN THE NORTH.—The last two weeks of November have been very dull, with a brightish day now and again and an occasional approach to frost. Saturday, 27th, was a good coldish day, but a storm of wind and rain began in the evening and continued throughout Sunday. The hills all round were covered with snow, and in the evening pelting sleety showers were almost continuous. Monday, again, was calm and clear, but the night was wet, and Tuesday morning drizzly, but later it promised to become more settled but cold.—B. D., *S. Perthshire.*

—— UNSEASONABLE FLOWERS.—This abnormal season will long be remembered by the various freaks which Nature has assumed during the last two months. Here we have spring flowers, including the wild Primrose, Strawberry, and a sprinkling of Apple bloom fully expanded, with Dahlias, Michaelmas Daisies, and other autumn flowering plants. Such an anomaly is seldom witnessed to the extent it is at present. But the most remarkable is a Honeysuckle, trained to a cottage wall in this parish. It has a crop containing both ripe and unripe fruit, and is now in bloom with two crops of leaves, the matured ones of summer, and a fresh crop of pale young leaves and growth; such a state of affairs is rarely seen at this date, 23rd November.—J. EASTER, *Nostell Priory.*

—— BEGONIA GLOIRE DE LORRAINE.—The magnificent group of this plant shown at the Edinburgh Chrysanthemum Show by Mr. H. J. Jones of Ryecroft Nursery, Lewisham, was much admired by visitors, and will doubtless lead many of our Scottish friends to grow it themselves. I find it one of the best colours for use under artificial light, and it is therefore one of the very best table plants we have for this dull season of the year, especially when there is a quantity of silver ornaments on the table. But I imagine it is open to the same objection as other Begonias if left for many hours in the rooms—viz., dropping of the flowers. An intermediate temperature appears to be necessary for it, and it is not so free growing as many of the fibrous-rooted Begonias.—W. H. DIVERS.

—— MR. ASTOR'S ROUND TABLE.—Large as may be this wonderful slab of Redwood Mr. Astor has imported here from California, I should hardly care to be one of the forty guests destined to sit round it when fashioned into a table, even were the feast spread to be a vegetarian one. For if the diameter be 16 feet 6 inches, the entire circumference as it is would be but 49 feet 6 inches, and that would allow elbow room for each guest of but 14½ inches. I do not think there are many persons who would care to be so compressed before dining, much less afterwards. But if this millionaire will cut out 8 feet from the centre of the slab, leaving a table all round 4 feet broad, he could then sit twelve guests in the circle at 24 inches apart, and in that way would find pretty ample room for the other twenty-eight on the outside. However, all this would, after all, have little connection with horticulture.—A.

—— A TREATISE ON FERN GROWING.—We have received a small treatise thus entitled, written by Mr. John Bowlby, published by Messrs. Whitehead Bros., Wolverhampton. The writer is evidently very well acquainted with Ferns and their cultivation, and he gives useful practical information; but when he says, "Nearly all Ferns are gifted with male and female fronds, without which the spores would not come to fructification," he lets us know that he has still something to learn. It is also a pity that he did not employ someone to correct the proofs of his treatise, and prevent at least 150 blunders in less than forty small pages. The treatise is written to be of service, as it may be, to the inexperienced—the very class who need education in correct nomenclature. Apart from the abounding inaccuracies in the representation of the names of Ferns, we find Saxifraga "Sacrementosa," a name which surely cannot be found elsewhere in the whole vast range of garden literature.

—— NATIONAL DAHLIA SOCIETY.—We are informed that the annual meeting of the National Dahlia Society has been arranged for Tuesday, December 14th, at 2 P.M., in the rooms of the Horticultural Club at the Hotel Windsor.

—— ROYAL GARDENERS' ORPHAN FUND.—We are pleased to notify that Mr. P. C. M. Veitch of The Nurseries, Exeter, has consented to preside at the annual friendly dinner of the Committee of the Royal Gardeners' Orphan Fund at Anderton's Hotel, on February 18th, 1898.

—— "KEW BULLETIN."—A number of this useful publication has recently been issued which embodies a list of the staffs in botanical departments at home, and in India and the colonies. If evidence were wanting as to the estimation in which Kew is held in distant lands it could be found in this book, for at every page appear marks that denote the fact of some officer having been trained at Kew, or recommended by the Kew authorities. There are about 125 names given as attached to colonial and Indian stations, of whom nearly one-half have been at, or were recommended by Kew.

—— VACCINIUM CORYMBOSUM.—Among the plants which assume brilliant colouring late in the autumn, says an American contemporary, none equals, perhaps, the common high-bush Blueberry, Vaccinium corymbosum, which early in November lights up many northern swamp borders with its flaming foliage. The value of this Blueberry as a garden plant has been often insisted on, for it is one of the most beautiful of all hardy shrubs. Beautiful in early spring with its waxy-white bell-shaped flowers, beautiful in summer with its bright blue fruit, and especially beautiful now after the leaves have turned. It is a tall shrub, and in good soil soon grows into a shapely specimen.

—— PRIMULA OBCONICA *versus* PRIMULA STELLATA.—Most gardeners, like myself, who have to provide abundance of flowers have found the old Primula obconica very useful both as a plant for vases and likewise for utilisation as cut flowers. On account of its poisonous nature I was obliged to throw away the whole stock; after which I endeavoured by every possible means to find a substitute. I am glad to say I have succeeded by growing stellata. I consider this is preferable in every way to P. obconica. First, one is not liable to eczema; second, it is pure white, and much larger; third, it has longer stalks and good dark foliage. Whether it is quite as free-flowering I cannot yet say, as this autumn is my first experience with it; but, of course, the size of P. stellata will make up for any deficiency in quantities compared with obconica.—A. J. L.

—— CAMPANULA ISOPHYLLA ALBA.—The account given by the raiser of this plant (Mr. R. Irwin Lynch, page 501) is very interesting. The plant when in flower is admired by everyone who sees it, and few things equal it for draping the front of conservatory stages and similar purposes. It has also achieved great fame in this neighbourhood as a window plant for cottagers, and some very fine specimens are occasionally met with in this way. Sometimes the blue form is seen by its side, though generally the white variety is preferred. Mr. Lynch is to be congratulated on having raised such a useful and beautiful plant. I have not yet tested its hardiness outside, but possibly it will survive in dry sheltered positions, and no doubt it has done this in many instances in the southern counties. It is easily propagated by division in the spring, and the plants grow to a useful size the same season, but as a hanging plant for windows or conservatories the large specimens are best.—W. H. DIVERS, *Belvoir Castle Gardens, Grantham.*

—— THE HESSLE GARDENERS' MUTUAL IMPROVEMENT SOCIETY.—A meeting of the above Society was held on Tuesday, November 23rd, when Mr. Wilkinson of Claughton read a very interesting paper entitled "Serving the Kitchen." The essayist stated that he had tried to bring before the members a few hints on one of the gardener's duties, and one which no gardener could afford to lightly pass over. He referred to the most suitable size of vegetables necessary for the dining-room; the best method of preserving them, if the supply were larger than the demand; and also the most suitable appliances used for the purpose of gathering them. He further mentioned that one cause of friction between the cook and the gardener was taking vegetables, such as Peas and Beans, into the kitchen when too old. Reference was also made to the advantages derived by young men, when commencing their gardening career, by serving the kitchen garden, as it gave them an insight, both of the quantity and quality, of the vegetables they would be called upon to supply later in life. There was a good attendance of members, and a pleasant discussion followed the essay. A vote of thanks to the essayist and Chairman terminated the meeting.—G. W. G.

—— Potato Reliance.—One of the most promising Potatoes of recent introduction—either for exhibition purposes or for the daily supply of the household—is Suttons' Reliance; an enormous cropper of true kidney shape, with shallow eyes and a robust constitution The tubers here, in a moist climate, were perfectly free from disease, while other varieties in close proximity were nearly all diseased. Such are its merits, that we do not hesitate to say that when better known it will drive away from our markets others of inferior quality, and will prove valuable alike to cottagers and gardeners.—C. Foster, *Aberpergwm.*

—— A Gardener's Mistake.—We are sorry to learn that Mr. T. H. Crasp, late gardener to the Right Hon. F. J. S. Foljambe at Osberton, had last week to meet a charge before the Worksop Magistrates of not accounting for ("embezzling") certain monies, amounting to £8 5s., which he had received for the sale of garden produce. Mr. Wilson, in defence, said Mr. Crasp was astonished when he found the four amounts had not passed through the books. It was all a pure mistake, and better men than his client had made mistakes. He also wanted to show that his client had bought for Mr. Foljambe goods to the amount of over £100, for which he had not been paid. He was perfectly willing to go to trial to establish his client's innocence. Defendant was formally committed for trial at the Nottingham Assizes on December 3rd, bail being allowed as before, himself in £50, and two sureties in £25 each.

—— Watercress in Pots.—This useful and wholesome salad may be grown in pots throughout the autumn and winter months. In September we fill about four dozen 32-size pots with a compost consisting of equal parts loam, leaf soil, and old potting soil, with a liberal admixture of mortar rubble, taking care to previously well drain the pots. The cuttings are inserted 2 inches apart and well watered. They are placed in a cold frame, kept close and shaded until well rooted, and then gradually inured to more light and air. At the same time abundance of moisture must be maintained both at the roots and overhead, keeping the plants cool at all times, in severe weather covering the frame with mats, or in the event of exceptionally sharp weather remove to a greenhouse, placing the plants on a stage which has a layer of shingle or similar material thereon. By this method abundance of young shoots may be obtained throughout the season.—H. T. M., *Stoneleigh.*

—— Thinning Fruit.—In a paper on Thinning Fruit read before the Hudson Valley Horticultural Society, Professor S. A. Beach gave an account of experiments in thinning fruits on Apple trees. In the first experiment two heavily fruited Baldwin trees were selected, and all the knotty, wormy, and otherwise inferior fruit was picked off one of the trees, leaving one fruit of a cluster. Of marketable fruit the thin tree yielded nine and four-fifths per cent. more first-grade, and four and one-half per cent. less second-grade fruit than the unthinned tree. Six Baldwin and six Greening trees were used in the second experiment. Three trees of each kind were thinned by taking off all poor fruit and leaving the fruit on the trees at least 4 inches apart. The Baldwin trees which had been thinned gave 26 per cent. less of marketable fruit, but 22 per cent. more of it graded No. 1 than of the fruit from the unthinned Baldwins. Or, differently stated, although the unthinned trees carried above a fourth more fruit altogether, they actually each yielded $1\frac{1}{4}$ bushel less No. 1 fruit than the thinned trees. With the Greenings this difference was even more marked, for the thinned Greening trees on an average produced $2\frac{1}{4}$ bushels more No. 1 fruit than the unthinned trees. Two trees of Hubbardston were used in the third test. On one tree the fruit was thinned to at least 6 inches apart. The thinned tree bore seventeen and four-tenths per cent. more of No. 1 Apples than the unthinned tree, and seventeen and one-tenth per cent. less of No. 2 grade. In all these tests fewer Apples dropped from the thinned trees, and their fruit was superior in quality and more highly coloured, and was worth from 10 to 15 per cent. more in market. The thinning and picking took about twice the time required for picking alone. The second method in these tests proved superior enough to the first to more than pay for the extra work involved; that is to say, the work paid best where it was thoroughly done. From the figures now at hand a satisfactory comparison of the second and third methods cannot be made, nor of the effect of thinning the fruit on the succeeding crop. In a season of an enormous crop, as in 1896, when many growers did not realise returns sufficient to cover the cost of packages and of picking and handling, thinning early in the season might be expected to decrease the yield of low-grade fruit and increase the amount of first grade, with a consequent advance in prices. Relieved of the drain of excessive bearing, the trees could ripen a fairly large crop of superior fruit, and better develop fruit buds for the following year.—("Garden and Forest.")

—— Distribution of Seeds from Kew.—The issue of the "Kew Bulletin," comprising the seeds for distribution from the Gardens, has just come to hand. The brief introduction says: "The following is a list of seeds of hardy herbaceous annual and perennial plants, and of hardy trees and shrubs which, for the most part, have ripened at Kew during the year 1897. These seeds are not sold to the general public, but are available for exchange with Colonial, Indian and Foreign Botanic Gardens, as well as with regular correspondents at Kew. No application, except from remote Colonial possessions, can be entertained after the end of March.

—— Beet for Sugar Production.—The following has been sent to us:—"Some 8,000,000 tons of Beetroot are annually turned into bounty-fed sugar for consumption in this country. Why should not British farmers grow it? There seems to be every reason why they should do so, if experiments recently made in Essex, a county by no means an agricultural Paradise, may be taken as a sample of what may be done on a larger scale. A farmer there has grown Beetroot alongside Mangold-Wurtzel, and treated it exactly in the same way. Analysis has shown that the root grown contains 14·01 per cent. of saccharine, against 13·97 per cent. for this year's German crop, which is regarded as a record one. Moreover, the English crop weighs out at over 16 tons to the acre, whilst German crops average 13 tons. Yet Germany is considered the champion country for Beetroot."

—— Sun Pictures of the Norfolk Broads.—The third edition of this charming publication has reached us from the Great Eastern Railway Company, and a perusal of its letterpress by E. R. Suffling, with an examination of the photographs by Payne Jennings, accentuates our opinion of the beauty of the Norfolk Broads. As holiday resorts, the many places on these Broads are decidedly recommendable, for they possess varied attractions to the visitors. True, there are not many things that may be found at Lowestoft or Yarmouth, but if care be taken one may choose a resting place—such, for example, as Oulton Broad—which adds to its own native attractions the advantage of being within easy walking distance of the first-named town. Those interested in fishing or yachting will find enough here to satisfy them, while the seeker for the calm peacefulness of rural England has his want filled to the letter. "Sun Pictures of the Norfolk Broads" is an excellently printed book of 101 pages and 100 splendidly executed illustrations.

—— Sweet Peas.—I notice in his excellent paper on these flowers Mr. Stanton expresses himself as gratified that they are not to be classed amongst florists' flowers. I have in reading that expression wondered how far that inclusion, were it so, would affect the status of the flowers in the least. Called by what appellation we may, the Sweet Pea would remain a Sweet Pea still. It is none the less observable that what improvements have been made in Sweet Peas have been effected on florists' lines. Thus we see now much larger, stouter, and more erect standards, and equally finer and bolder wings. These are exactly the qualities the florist would seek for. Possibly some growers may prefer those having drooping standards. I dislike these because the flowers wear the aspect of being in a condition of staleness, and flagging. It will not be a matter for surprise if the erect standard does not displace the falling one some ten years hence. Of variety we have enough, but we may yet see much expansion of size and stoutness. For what has been done great thanks are due to that unhonoured raiser Mr. H. Eckford.—D.

—— Inscriptions on Gourds and Melons.—Herewith I forward for your inspection portion of a skin of a Gourd with an inscription upon it. We have practised this sort of thing for some years now on Melons, Marrows, and Gourds. Melons with their names inscribed on them are always of some interest on the dinner-table. Gourds and Marrows with suitable mottoes or texts upon them are a useful addition to church decoration at harvest festivals. It was for this purpose our first was prepared. The operation is a simple one. When the object to be written upon is about one-third of its natural size mark with a large pin whatever words are required. The clearer they are written the better they come out. Mr. John Snell, our foreman, has done ours for years past, including the one sent. I do not think there is anything very new or very important in the matter, but, to say the least, such fruits are interesting.—H. J. C., *Grimston, Tadcaster.* [The practice is by no means new. We have occasionally seen inscribed Gourds at cottagers' shows, and once at a Crystal Palace Show; but we have not seen any of such writing so well done—in bold, clear, "large hand"—as by Mr. Snell on the samples before us, wishing "Success to the York Chrysanthemum Show," and to "The Ancient Society of York Florists."]

—— GISHURSTINE.—With the drenching rain of a few days ago, and the consequent wet grass and puddled roads, came the usual annual samples of the great leather preserver and damp preventer—Gishurstine—which has proved so serviceable to many during the winter months. This preparation seems to hold its own from year to year as a dressing for the boots of gardeners, farmers, gamekeepers, and pedestrians generally, and it is difficult to imagine anything that could serve the purpose better. As is generally known, it is produced in the great manufactory at Battersea known as "Price's."

—— MANURES FOR VEGETABLES.—Under the title of "Cultivation of Vegetables with or without Chemical Manures," Mr. F. W. E. Shrivell, F.L.S., delivered a lecture before the members of the Chiswick Gardeners' Society in the R.H.S. Gardens on Thursday last. Mr. S. T. Wright presided. The lecture chiefly consisted of details of a series of experiments with fifty loads of manure, twenty-five loads ditto, certain chemical manures with the latter, and certain chemicals without ordinary manure, per acre, the crops being Cabbages, Broccoli, Beets, Asparagus, Rhubarb, and various other products conducted in Kent by Mr. Shrivell and Dr. Bernard Dyer. The results generally were made to show in favour of the chemical manures. Mr. A. Dean of Kingston, who was present, and exhibited eight samples of artificial manures, referred lengthily to the matter of the lecture, though not adversely, chiefly asking for information on various points, and was followed by Mr. Gibson of Devonhurst and others. After Mr. Shrivell had replied, a cordial vote of thanks was carried. There was a good attendance, nearly all being young men.

—— GROWING LACHENALIAS. — While admitting the truth of "H. T. M.'s" remarks on page 502, relative to the beauty of Lachenalias in baskets, I must put in a plea for their culture in pots. Every year we have a number of 6-inch pots filled with them, and the effect they produce in the conservatory is decidedly effective. We do not, however, confine ourselves to L. pendula, which "H. T. M.' justifiably recommends, but grow also L. Nelsoni, whose yellow flowers on their long spikes are so brightly beautiful. I would advise your correspondent to try it both in pots and baskets as it is certain to give him satisfaction. No better course of treatment could be adopted than that recommended in the note referred to, as we have frequently proved.—H. ROSE.

—— COLOURED BARK FOR WINTER EFFECT.—I was much interested in the article on this subject by "W. D." on page 498, as I have seen several of the plants mentioned utilised with wonderful success. Considering the wide range of colour that may be secured from the barks alone of many plants, without taking their flowers or foliage into consideration, it is a matter for surprise that they are not more generally seen. If anyone wishes to see some of the Dogwoods, Spiræas, and others admirably employed they should visit the grounds of Lord Aldenham at Elstree, where Mr E. Beckett has planted several immense beds that materially enhance the beauty and interest of those fine gardens, both in the summer and winter.—SOUTH LONDONER.

—— FRUIT CURES.—The so-called "fruit cure," although not much heard of in this country, is well recognised at various places on the Continent, where so-called Grape-cure stations have been established. In a recent number of "Modern Medicine and Bacteriological Review" there is an interesting article on the subject, in which the historical side of the question is dealt with. Thus we are told that many medical authorities in the tenth century become enthusiastic in their writings over the remarkable curative virtues of Grapes, whilst a certain Van Swieten, of a more modern date, is said to have "recommended in special cases the eating of 20 lbs. of Strawberries a day." The same gentleman also reports a case of phthisis healed by Strawberries, and cites cases in which maniacs have regained their reason by the exclusive use of Cherries as food! These instances rather savour of the miraculous; but there is no doubt that the so-called Grape cure for indigestion and other evils is carried on in many places on the Continent, and that people betake themselves to Meran, Vevey, Bingen, or to Italy and the South of France with the intention of devoting six weeks to the cure, during which time they are expected to have gradually accomplished the feat of consuming from 3 to 8 lbs. of Grapes daily, as the case may be. Grapes are said to exercise a salutary action on the nervous system, and to favour the formation of fat—that is to say, when fruit of good quality is employed; if the Grapes are not sufficiently ripe, and are watery and sour, the patient may lose rather than gain in weight. Dr. Kellogg, Director of the Sanitarium Hospital and Laboratory of Hygiene at Battle Creek, Mich., is of opinion that the valuable results obtained by a fruit diet in cases of biliousness which he has observed are due to the fact that noxious germs habitually present in the alimentary canal do not thrive in fruit juices.—("Nature.")

—— ECCREMOCARPUS SCABER.—This pretty climber is of vigorous growth, and if planted against a south wall it will endure the winter provided the roots are protected with long litter or leaves. It flowers from July to November. The orange scarlet corollas are freely produced on the young growths. When the seedlings are large enough they may be potted singly into thumb pots placed in heat a few days until established, when they should be moved into the greenouse.—L. J.

—— ZEPHYRANTHES ATAMASCO.—Though several of the Zephyranthes are frequently seen in gardens, either in the borders or in pots, the Atamasco Lily seems to be somewhat neglected. The reason of this is somewhat difficult to define, as it is of easy culture and its flowers are of refined beauty. Flowering through May, June and July, in the open garden, and a little earlier under glass, it is of great beauty, and I should be glad to see it more grown. Provided the soil of the garden is fairly good, this North American plant thrives admirably, as does it in pots, if a compost largely comprising loam and coarse sand be utilised. I am not aware whether it may be forced successfully, but perhaps some other reader will be good enough to state his experiences on this point. The colour of the flower is white delicately flushed with pink.—H. ROSE.

—— "PHOTO PICTURES IN EAST ANGLIA."—Such is the title of a beautifully produced book, published with the countenance of the Great Eastern Railway Co., and a copy of which is now before us. In its 134 pages it comprises 103 photographic reproductions by Payne Jennings of Ashtead, these representing varied scenes and places of interest in the eastern counties of Essex, Suffolk, and Norfolk, with occasional glimpses of noteworthy places outside the boundaries of the shires named. The diversity of the subjects illustrated not only proves what beautiful places may be found in the erstwhile somewhat despised East Anglia, but also that the photographer possesses the true artist's conception of what is beautiful in Nature and in Art. The letterpress which accompanies each picture is gracefully written by Annie Berlyn, who places before her readers several facts that are little known anent many of the portrayals. The entire book is a work of art, which reflects much credit on all concerned in its production.

—— ANEMONE JAPONICA ALBA.—Times almost without number able writers have written, telling of the beauty and utility of this Japanese Anemone, but I feel constrained to return once again to the subject. I am the more encouraged to this by the magnificent effect our plants have produced this season, better perhaps than we have ever had before. The plants made splendid growth, and continued producing flowers of exceptional size and substance over a much more extended period than is customary. We have them in beds and in borders, sometimes as a mass and in other positions single plants, but all alike have done well. Some of the flowers towered to a height approaching 6 feet. We consider them worth growing well, and so provide good soil and insure perfect drainage, both of which we consider necessary to secure the best results. There are several varieties now in commerce, but so far we have not seen the advantage of discarding the old well-tried favourite for the new. Easy of culture, free in flowering, and readily propagated, Anemone japonica alba is by no means sufficiently seen in perfect condition.—M. R.

—— A BOOK ON MANURES.—I have recently been asked to recommend a cheap book dealing with the application of manures, animal and artificial, to fruits and vegetables, giving proper quantities for each crop, and other minute details. That is rather a large order, and if anyone is ambitious to rush in to fill the void they are welcome. That a small book dealing with manures, explaining their nature, origin, constituents, adaptabilities, methods of application, and other really practical information might find a sale is possible, but if highly spiced with analytical tables, with chemistry, and with smatterings of science it would be valueless to the general public. There seems to be about artificial manures such a capacity to make money, or apparently so, that pens to praise them, even lavishly in trade interests, are plentiful. All books so originated should have a wide berth; I would commend them to no one. To furnish in any book, however impartial, information to meet every case would be impossible.—A. D. [We have reason to believe that a small, cheap book dealing with manures (though not exclusively) on the lines suggested, will be shortly forthcoming. The author of it is not a "smatterer in science,' but a genuine scientist, yet is so practical withal as to eschew the bewildering and, to many, puzzling and tedious analytical tables that are so common. We happen to have seen some of the proof sheets of the work, the title of which is registered "The Chemistry of the Garden," and observed some rather trenchant remarks on the "fallacies of plant ash prescriptions." The author declines to give any formulæ founded on tabulated figures. "A. D." is always drawing something out of somebody.]

THE CONSERVATORY AT WESTONBIRT.

THE corridor that may be seen in the photographic illustration is situated on the west side of the mansion. It is 30 yards long, and leads to the conservatory, which has an arrangement of four large beds, filled with specimens of Bananas, Palms, Ferns, Bamboos, and other imposing plants. Large pillars support the roof, and on these are growing Hibiscus in variety, which succeed well, making shorter growths and flowering more freely than in the stove. On the sides are arranged flowering plants, brought from the other houses in season, making a pretty effect.

Two large plants of Olea fragrans are in bloom, which scent the whole of the conservatory. It is an excellent plant, which is rarely found in conservatories, but those who object to the perfume emitted by the leaves of the Chrysanthemum will find it very pleasant. The creepers hanging from the roof (in view) are Cobœa scandens variegata, Tropæolum Fire King, Abutilons, Lapagerias rosea and alba, Fuchsias, Bignonia Cherere, and Lasiandra macrantha. The latter is now in full bloom, and contrasts splendidly with the yellow blooms of the Chrysanthemums.

On the walls on each side of the corridor are Camellias, which are in splendid health, the old C. althæflora just now expanding hundreds of bloom.

On each side of this corridor are arranged two long banks of Chrysanthemums, comprising all the leading varieties, preference being given to the Japanese incurved. The waxy texture of the blooms has a more massive appearance, and they are found to resist the damp better than the more loose type of Japanese varieties. Amongst the largest blooms are Edith Tabor, Oceana, Phœbus, A. H. Fewkes, Pallanza, Australian Gold, Modesto, Boule d'Or (Calvat's), Amos Perry, very fine; Philadelphia, Sunflower, Mons. Panckoucke, and Noces d'Or of the yellows. Niveus, extremely large blooms; Avalanche, Stanstead White, Mdlle. Marie Hoste, Mutual Friend, Mdlle. Thérèse Rey, Madame Carnot, Lady Esther Smith, Souvenir de Petite Amie, very dwarf and good; Kentish White, and Lady Byron, whites. The higher coloured varieties are C. W. Childs, Wm. Holmes, Elmer D. Smith, W. K. Woodcock, Owen's Crimson, Octoroon, Khama, Lady Randolph, Commandant Blusset, Viviand Morel (terminal buds), Maggie Blenkiron, and Nyanza, with others.

Huge bushes are grown and arranged in the front row, carrying several hundreds of bloom of Sir Admiral Symonds, Mons. Lemoine, White Jane, Source d'Or, Chevalier Domage, W. H. Lincoln. These form fine masses of colour, and show off the larger blooms to perfection.

N.C.S. ANNUAL DINNER.

THE annual dinner of this Society was held on Wednesday, the 24th ult., at Anderton's Hotel, Fleet Street, Mr. T. W. Sanders being in the chair. There was a numerous company present, and the proceedings were of the usual hearty nature. Among many others we recognised Messrs. P. Waterer (the Vice-Chairman of the General Committee), Harman Payne, R. Ballantine, T. Bevan, G. Gordon, J. Scott, T. W. Wilkinson (Secretary of the Royal Aquarium Company), H. J. Jones, W. Mease, H. Cutbush, Leonard Brown, and R. Dean.

The usual loyal toasts having been duly honoured, the Chairman rose to propose "The Glorious Chrysanthemum and Its Devotees," which was a toast he felt sure everyone present would heartily welcome. He could safely say that not even the Rose, beautiful as it was, could claim to have so great a share of admiration and popularity as the Chrysanthemum had obtained. It was a flower that united men of all creeds, all nations, all shades of political opinion in a bond of brotherhood and love. The Chrysanthemum had exercised its wonderful influence in China, in Japan, and other places abroad; and had it not long since had the same beneficial effect upon us in the West? It was a flower that had done much to make horticulture a more tempting pursuit to many who could not otherwise have taken up the cultivation of flowers at all. The Chairman then referred to the East End of London, where it was surprising to find such admirable displays, and proceeded to show how the cultivation of the flower had spread throughout the United Kingdom, and even into our far off Colonies beyond the seas. Wherever we go we find people taking more interest in its culture than ever. Much of this he considered was due to the N.C.S., which provided fine shows and useful literature on the subject, and by admitting societies into affiliation they have helped to continue the good work. These societies were situated in almost every county in England, and at the present moment numbered 148. In conclusion, the Chairman expressed the hope that the N.C.S. would continue its good work, and so spread the love of the flower in those quarters where its beauty and usefulness had not yet penetrated. The toast was drunk with enthusiasm.

Mr. G. Gordon proposed "The Donors of Special Prizes," and said that the N.C.S. was largely indebted to its honorary members and donors of special prizes, and he should be pleased if anything he could say would induce others to follow the example already so worthily set, and coupled with the toast the names of Mr. H. J. Jones and Mr. P. Waterer, the latter of whom had recently shown them at Edinburgh that he could win an important prize in a competition where the best blooms in the United Kingdom were staged. Mr. Waterer and Mr. Jones both replied in suitable terms.

The presentation of the national challenge trophy was then made to the representative of the Bromley Society, Mr. J. Scott, who replied, saying he was proud of the position he occupied that evening in the absence of their President, Mr. Coles Child. The Bromley Society had had the honour on a previous occasion of winning the trophy, and were now again successful. The blooms shown were the product of ten different members of the Society, and they would be quite prepared to contest it again.

At this point, on account of the time being somewhat advanced, the health of the visitors was proposed, and responded to by Mr. Spencer Hughes, of the "Morning Leader," and Mr. Leonard Brown.

Next came the presentation of the Holmes Memorial cup to Mr. Mease, the Turner Memorial cup to Mr. N. Davis, and various gold and other medals to Messrs. Cutbush, W. Wells, H. J. Jones, and John Laing and Sons.

"The President, Vice-Presidents, Officers, Auditors, and Committees" was proposed by Mr. J. W. Wilkinson, who said he was sure they would all regret the unavoidable absence of their esteemed President, Sir Edwin Saunders, who took so keen an interest in the Society's work. With regard to the others, the value of their work must be measured by the success they had achieved. He would specially mention Mr. R. Ballantine, Mr. R. Dean, Mr. Harman Payne, Mr. Wm. Holmes, and Mr. T. Bevan. Mr. R. Ballantine replied, and felt proud at being one who had inaugurated the affiliation scheme, which had done much to extend the area of operations, and felt sure, from his own experience, that in holding out the hand of friendship to our friends across the water they had done the right thing; and if anyone belonging to the N.C.S. ever found themselves in our Colonies where there was an affiliated society there would be sure to be a hearty welcome for them. Mr. Harman Payne's name being also coupled with the toast, referred to the work of the various committees, and to his being brought into contact with foreigners of many nationalities, he also responded.

Other toasts were "The Chairman," proposed by Mr. Gordon; "The Secretary," proposed by Mr. Ballantine; and "The Press," by Mr. Cutbush, all of which were suitably responded to. The musical arrangements were under the direction of Mr. H. Myers, and the room was decorated with plants, kindly lent by Messrs. Cutbush & Sons of Highgate.

N.C.S. FLORAL COMMITTEE.

ON Monday last the Floral Committee of this Society held a meeting at the Royal Aquarium, Mr. T. Bevan presiding over a somewhat small gathering. First-class certificates were awarded as under:—

Mrs. J. R. Tranter.—A Japanese with fairly long florets, curling and twisting, and of medium width. Colour creamy white, edged and streaked rosy purple. Shown by Mr. J. R. Tranter, Henley-on-Thames.

Violacea.—Immense Japanese with numerous florets of medium width, twisting and intermingling, making a capital show bloom. Colour, pale rose violet, white reverse. From Mr. E. Beckett, Elstree.

Mrs. W. Butters, a pretty white Japanese, and Sam Caswell, rosy pink spidery Japanese, were commended.

N.C.S. AND THE ROYAL AQUARIUM.

I AM of the same opinion as your correspondent "A. D." (page 503), that the important exhibitions of the National Chrysanthemum Society are worthy of a better place as regards convenience and effect than is afforded them by holding the shows at the Royal Aquarium. The greatest fault to be found lies in the cutting up of the exhibits which have, perforce, to be accommodated where they can. Thus there is no room for a general effect, such as some of our provincial shows can present, though the material is there and in plenty. The next fault is in the wretched light in the west gallery, which on the occasion of the last exhibition was simply disappointing, in the evening at all events. The long rows of magnificent cut blooms were in an atmosphere of semi-gloom. The front of the gallery from which a view of the stage is obtained had been closed with an effective barrier of paper. Probably this was done with the intention of preventing a crush of gazers upon the entertainment. The light, too, which fell upon the groups in this gallery was insufficient, and rendered more so by the groups being arranged under the lights instead of between them.

The arrangements at last year's exhibition were much better. The October show this season was not open to the same objections in these respects. It was less bulky, and taking it altogether a very attractive and instructive exhibition. The east gallery was excellently lighted, and the cut blooms could be well examined, but access to it below the organ was often blocked with two streams of visitors.

In St. Stephen's Hall there is ample space, well lighted. Here were staged the vegetables, fruit, and trained plants of Chrysanthemums. If the cut blooms had occupied this hall they could have been examined better.

I say nothing about the "objectionable surroundings." It is a matter of opinion. Some like these accessories to an exhibition, and some do not. Provincial shows place some dependence on music and singing, and find it advantageous, but of course the National Chrys-

anthemum Society could do without music hall assistance, for where the leading Society holds its annual carnival of all that is first and best in Chrysanthemum culture, there will its supporters assemble to witness.—E. D. S.

"A. D." (page 503) is having his annual fling at the N.C.S. He does not like the Royal Aquarium. There is plenty of room for difference of opinion on this point That the November show in particular is appreciated by thousands is demonstrated by the crowded state of the building when the show is on. The public appear to like the arrangement of the exhibits also. They regard them as a desirable and an appreciative break away from the formal straight lines of the Drill Hall and the Temple shows.

For the space of twenty-one years a Chrysanthemum show has been held at the Royal Aquarium. It is now much larger than it originally was, the quality of the exhibits and their variety much greater, and the attendance equal to the utmost capacities of the building to contain it. Why should the popular element be deprived of their annual display of Chrysanthemums at Westminster because "A. D." does not like the place?

Your correspondent of last week is as barren of suggestion and resource as the rest of the critics (very few, indeed) who take the same line. They name no alternative place. If they could there might be some use in their criticism; but they do not, because they cannot. The Crystal Palace (occasionally suggested) is out of the question. Two years ago the executive which he invokes appointed a Committee to look for and suggest more appropriate sites for the November show; they failed to discover a single one. Will "A. D." supplement their labours

Photo by Mr. E. T Lamb, Tetbury, Glos.

FIG. 78.—THE CONSERVATORY AT WESTONBIRT.

by indicating any of which he has a knowledge? If he has no alternative site to suggest, why is he so unpractical as only to growl? But happily nobody minds him.

The members of the executive are fully aware of certain disadvantages attaching to holding the shows at the Aquarium; but the corresponding advantages are much greater. Are they not wise, then, in bearing with the disadvantages, and refraining from any change of place (if such can be found) with the certainty of added difficulties heavy expenses, risk, labour, anxiety, and probable failure?—ONE OF THE EXECUTIVE.

[While readily affording space for our able correspondent to state his view of the case, we think he will find that some more notice will be taken of the letter which he already notices. We have reason to believe that all the members of the executive are not satisfied with the Aquarium for the purpose of the show. We are also inclined to think that "growls" have usually been the precursors of many great reforms, which at the time most persons regarded as impossible of accomplishment. The last word has not yet been said on the N.C.S. and its policy, but we have no more space at disposal this week.]

CHRYSANTHEMUM SHOWS IN 1898.

WE are officially informed that the Highgate and District Show will be held next year on November 8th and 9th, and the Winchester Show on the 15th and 16th of the month.

YELLOW SPORT FROM CHARLES DAVIS.

I NOTE your correspondent "E. D. S.," in his remarks upon Chrysanthemums (page 504), observes that "Dwarf primrose coloured varieties are rather scarce." It may interest "E. D. S." and other fanciers to know that I have a sport from Charles Davis this year of a beautiful soft yellow colour, the reverse of florets a primrose shade. It is a good deep flower, well formed, and in every respect equal to its parent. The branch on which the flower appeared was not more than 3 feet in height; it was the first crown bud. Two or three growers who saw the sport were delighted with it. I hope to have it on its own roots next year, and if it comes as good as it did this time the public will have the opportunity of seeing it. I should be interested to know if anyone has seen anything similar to it.—R. M.

REPORTING CHRYSANTHEMUM SHOWS.

I OBSERVE you have given reports of most of the Chrysanthemum shows in other counties, but fail to see that you have reported on what has taken place in Devonshire. Subscribers to the *Journal of Horticulture* in Devon like to see their shows reported. I venture to say there were as many cut blooms shown at Plymouth as at the N.C.S., except those shown by trade growers, and blooms quite equal, if not superior, to those shown at the N.C.S. in the class for forty-eight blooms. There were nine competitors from Cornwall, Devon, Somerset, and Dorset, and the same can be said of Exeter.—A DEVON TWELVE YEARS' SUBSCRIBER.

[We are pleased to hear of this Western success. It has only been by the kind co-operation of friends in different localities favouring with notes of the shows in which they are interested that we have been enabled to publish so many reports, and we tender to all who have so aided our best thanks. We do not remember rejecting any reports from Devonshire, nor receiving tickets reminding us of the dates of shows.]

THE DERBY CHRYSANTHEMUM SOCIETY.

THIS Society held its annual show in the Drill Hall on Friday and Saturday, November 13th and 14th. The display was really a fine one, doing credit to Mr. Bell, the energetic Secretary. Although the weather was anything but good, the show was well patronised on both days, when, besides the floral attractions, were promenade concerts, and on Saturday a performance was given by Neapolitan concert party. The open classes were well contested for, especially in the cut bloom section. For twenty-four Japanese Mr. Burrows, Berwick House, Shrewsbury, won first honours, Mr. Week, Thrumpton Hall, being second. For twenty-four incurved Mr. Evans, gardener to Sir Henry Wilmot, first; and Mr. Holder, gardener to Earl Ferrers, second. For a group of Chrysanthemums Mr. Gough, gardener to Mr. Malin, Overdale, was first, Mr. J. B. Chapman second. Mr. Holder also won for table decorations, and Mr. J. Wood for hand bouquet. The prize for specimen plants was won by Mr. J. B. Chapman.

CARNARVON CHRYSANTHEMUM SOCIETY.

THE fourth show was held on November 11th, and in every respect it was much superior to its predecessors. There were forty more entries than last year, and the Judges remarked that the exhibits were well up to the standard. Fruits and vegetables were included, and were admirably shown. The principal prizes were taken by S. Taylor Chadwick, Esq., Beaumaris. He was successful in annexing the challenge cup for the best twenty-four blooms. Mr. Howard, gardener to Mr. Chadwick, secured the two silver medals, one for the best incurved bloom in the show, and for the best Japanese bloom in the show. There was a strong competition in all classes. Mr. Davis, Carnarvon, was successful in winning the Society's silver medal for the best single stove plant in the show; and Mr. G. Tyler, gardener to Charles Jones, Esq., Bron Hendre, Carnarvon, took the gold Diamond Jubilee medal with his group of Chrysanthemums, which was very much admired by all. The show was well attended, but is worthy of more support.

CHRYSANTHEMUMS FROM LIVERPOOL.

I HEREWITH send you a few Chrysanthemum blooms as illustrative of the mildness of the season. They were all grown outside in a garden, fully exposed, close to town of Liverpool, and also the Mersey. The varieties are Mons. R. Bahuant, Baron Hirsch, Florence Percy, Mrs. Forsyth, W. Holmes, Viviand Morel, and Sœur Melaine. We have many more varieties, besides various other plants in full flower.—AN OLD SUBSCRIBER.

[The flowers forwarded were of excellent quality, and forcibly illustrate what a remarkable season we have had.]

LEAF RUST IN CHRYSANTHEMUMS.

I AM much obliged to you and to Mr. Abbey for the examination of the diseased leaf of Niveus forwarded by me. It seems somewhat of a coincidence that the rust should have appeared in England and Italy at about the same time, and I think it would be interesting and perhaps useful if you would allow a brief statement of the circumstances attending the appearance of the disease with me for comparison.

The first signs I observed early in September after several days' rain, the plants being very saturated. There were some 300 in pots, and every leaf right up to the flower has been affected. The disease has been always on the "ascent." By this I mean that it has appeared on the lower leaves first, and gradually ascended the stem; thus the lower leaves were covered with the "rust," while the upper leaves were only slightly speckled. I suppose from this fact it may be inferred that the disease emanates from the roots. I may here observe that there was practically little or no feeding, such as is understood in England.

During the whole of the season I have had under glass some dozens of seedlings and a few plants of Philadelphia (I find this variety succeeds in this way cultivated like summer Tomatoes in England under glass), and not a sign of the rust has appeared on these. Of two or three hundred plants grown in the open everyone was more or less affected, but not so badly as those in pots, the lower leaves, however, blackened and fell off. I may state that vegetation here is very rapid and sappy, and when disease affecting the growth appears it spreads very quickly—*e.g.*, a week or so ago after the rain some seventy-five Tomato plants grown in the open were all black from top to bottom, and this happened during very hot weather.

I enclose a Raspberry leaf similarly affected with a "rust." I think, therefore, it is only fair to attribute the appearance of the rust amongst my plants to excessive moisture at the roots.—H. BRISCOE-IRONSIDE, *Pallanza, Lago Maggiore, Italy.*

STAGING CHRYSANTHEMUMS AT EXHIBITIONS.

I FEAR an "Old Exhibitor," page 503, has little experience of present day shows or the methods adopted by modern exhibitors to convey their blooms to autumn exhibitions several hundred miles away. His remarks on this phase of the subject are somewhat in opposition to facts. He states, "Should any society offer all its prizes in the cut bloom classes for flowers on long stems it would have to depend upon local growers for exhibits." If he had seen, or even read the report of the Edinburgh show, page 510, he would there find that the largest prizes ever offered for Chrysanthemum blooms in any form were on long stems. He would also find that the whole of the six prizes were taken by exhibitors residing several hundred miles from the show. Had an "Old Exhibitor" seen the exhibits alluded to he would have hesitated before penning his article.

The remarkable freshness of the blooms staged, and the almost total absence of any signs of injury during transit, was a distinct refutation of the notion advanced. The nine competitors who made the magnificent display have reason to be proud of their achievement. Even the three who failed to win a prize deserve credit for the manner in which they not only presented their blooms, but for the individual quality of each.

My experience of present day exhibitors differs considerably from that of an "Old Exhibitor" in the matter of how they stage their blooms. During a somewhat lengthened tour of the principal shows now nearly at a close I was particularly struck with the great improvement in the methods of staging. In few instances did I find flagrant errors, and many times I remarked upon the advance made in staging. It was apparent that even the bulk of old time offenders had profited by the object lessons that are so numerous now at the leading shows.

Probably the worst instance of bad staging that came under my notice was at Devizes. There I found a badly set up stand of blooms belonged to an exhibitor who was making his maiden attempt. Certainly the flowers had been well grown, or he would never have secured a prize at all. A kindly admonition, accompanied with an illustration of how to stage the blooms well, as compared with the reverse, was accepted in the proper spirit, and I expect so apt a pupil to profit by such experience.

To illustrate the advance made in staging the blooms, an exhibitor I knew twenty years since as then very much lacking in taste of arrangement, appears to be no longer in the background, but is now quite up to the forefront in this most important detail. An "Old Exhibitor" would be adding to the already numerous duties of judges if committees were to stipulate that the blooms should be a certain number of inches above the stand. Strong complaints are common enough now about the very thing an "Old Exhibitor" would have us continue—viz., uniformity in the arrangement of the exhibits. Nowadays the great cry is for variety, not a lack of it. I quite agree that good staging is important. My opinion is that rougher examples of incurved blooms are seen now than formerly. The reason is not far to seek—viz., the inclusion of varieties that are not

strictly belonging to the true type of Chinese or incurved blooms. Too many are mongrel bred, the result of seedling raising now becoming so much more common than formerly.—SADOC.

TREATMENT OF LATE CHRYSANTHEMUMS.

THE season for large and extraordinary sized blooms having now approached its end, and the last of the exhibitions are being held, greater attention is paid to the varieties which are found to possess blooms in a fresh presentable condition, yet of fair average size. Some blooms remain in splendid condition for a long time. For instance, Rose Wynne among the light blooms, Col. W. B. Smith among the bronze, W. Seward among the dark varieties, Silver King of those of rosy mauve colours, with several other representative sorts, all seem to keep well for weeks.

The conditions which enable growers to preserve the colour, freshness, and form of the flowers are simple, yet important. In my opinion they are these:—Previous good culture, including right selection of buds, judicious feeding, healthy foliage, correct watering, constant circulation of air among the plants after housing, comparative freedom from mildew, disposing the plants thinly, if possible, in a light, airy structure; freedom from drip or deposition of moisture on the blooms, either by sudden variations of temperature and moisture, or exposure to fogs; applying clear water only after the blooms are two-thirds expanded; examining state of soil for water every day; picking off dead leaves; and shade from strong sunshine. The more growers think and act on the majority of the points alluded to above, the better will they achieve success in perfecting and preserving the blooms.

Chrysanthemums approaching to or in bloom do not need at any time a high temperature by means of fire heat. However, artificial heat is of great assistance in preventing the temperature descending so low as to become cold and saturated with moisture. To this end it should be used, and not to cause excessive evaporation from the foliage and the soil; 50°, with a little ventilation even in cold weather, is a good average, rising in mild weather and descending a little in colder.

The smaller and useful blooms now developing for a late display are even better adapted for preservation in fine condition than those of large proportions and multifarious florets. The conditions for keeping them are usually more favourable in December than any other time. Large numbers of plants which have gone out of bloom have been cut down and taken out; room is, therefore, available. It is frequently easier to preserve the blooms after they are fully open than it is to induce them to expand properly. Checks at the roots may cause the centre florets to cease growth, when decay sets in and the blooms are spoiled.

The best possible treatment ought to be accorded Chrysanthemums in bloom at this period and midwinter, for they are among the brightest and freshest flowers available; and no matter how small the flowers may be, if of good shape and decided colour they are sure to be appreciated.—S.

SHOWS.

LEAMINGTON.—NOVEMBER 25TH AND 26TH.

IN being favoured with fine weather after a succession of depressingly foggy days, the above Society was singularly fortunate in regard to its annual show, which was in every way a pronounced success. Although in a few classes the entries were not numerous, the quality of the exhibits throughout was of a high order of merit. The show was opened by the Mayor (Councillor Gordon Bland), and the attendance being good, will help to place the Society on a more sound financial basis than heretofore. Mr. L. L. Lawrence, the popular Hon. Secretary, was indefatigable in his exertions to make the exhibition a success, and in this laudable endeavour he was well supported by an enthusiastic Committee, with Mr. J. Kitley as Chairman.

For a group of Chrysanthemum plants arranged for effect in a space not exceeding 60 feet, Mr. R. Greenfield, jun., Ranelagh Nursery, Leamington, secured the first prize with an exhibit composed of well grown plants carrying many fine blooms, the whole being arranged well and finished in good style. The same exhibitor secured the premier award for one Japanese Chrysanthemum plant, and for three and six.

Cut blooms were wonderfully fine considering the lateness of the fixture, and in many instances the competition was remarkably close. For twenty-four Japanese, distinct, the premier award was well won by Mr. A. Chandler, gardener to the Hon. Mrs. Arthur James, Coton House, Rugby, who staged flowers of fine size, substance, and colour. The varieties were—Back row: Madame Carnot, Richard Dean, Mons. Panckoucke, Mons. Gruyer, M. Demay-Taillandier, Phœbus, and Silver King. Middle row: Simplicity, Graphic, L'Isere, Mons. Chenon de Leché, Boule d'Or, Etoile de Lyon, Florence Davis, and Golden Gate. Front row: Miss Dorothea Shea, Oceana, Mr. Dr. Ward, Master B. Spaulding, Hairy Wonder, Mons. C. Molin, Edith Tabor, and Maggie Blenkiron. The second prize fell to Mr. R. Greenfield, jun., whose best blooms were Amiral Avellan, Madame Carnot, and Miss E. Teichmann; Mr. H. Blakeway, gardener to — Muntz, Esq., Dunsmore, Rugby, being a close third. Mr. Chandler also won for twelve Japanese, with a stand containing heavy blooms throughout; Mr. W. Pearce, gardener to S. Loder, Esq., Flore House, Weedon, being a very close second, splendid blooms of Madame Carnot, Simplicity, and Mephisto were noticed on his stand. The third award went to Mr. Blakeway. For six Japanese, Mr. Pearce turned the tables on his opponents, winning with good blooms; the second prize went to Mr. Blakeway.

Two classes were provided for incurved, twelve and six being the number required. Mr. R. Jones, gardener to C. A. Smith-Ryland, Esq., The Gardens, Barford Hill, Warwick, won somewhat easily in both classes, the blooms being deep, good in form, and were well staged; the varieties being C. H. Curtis, C. B. Whitnall, Lord Alcester, Mdlle. Lucie Faure, Bonnie Dundee, Ma Perfection, W. Tunnington, Chas. Gibson, and J. Agate. Mr. Pearce was second for both twelve and six. His best blooms were grand ones of W. Tunnington and Bonnie Dundee. Mr. R. Greenfield secured the third award for the twelve incurved.

Mr. R. Greenfield secured the first prize for a bouquet of Chrysanthemums; and Messrs. Finch & Co., florists, Milverton, won for a cross of Chrysanthemums and foliage. The latter firm was deservedly first for a "table of devices" with a most attractive exhibit. Mr. J. Kitley, Castle Nursery, Warwick, proved an easy winner in the class for six table plants; and Mr. Chandler was awarded the first prize for six flowering ones, with some beautiful specimens.

Mr. H. Liney won the £3 offered for the best collection of fruit, to consist of three bunches of Grapes, three dishes of Apples, and three dishes of Pears, his exhibit being an excellent one throughout. Only one collection of six dishes was staged; for this a second prize was awarded to Mr. G. Hopkins, Hilden, Milverton. Mr. Williams, gardener to Mrs. Mann, Leamington, secured the first prize offered for two bunches of Grapes by Thomson & Sons, Clovenfords, and Mr. Chandler won for three bunches of black. Mr. Liney secured the first prize for dessert Apples; and Mr. T. Marsh, Warwick, a similar award for culinary Apples. A silver medal was awarded Mr. F. Perkins of Leamington, for a delightful exhibit, in which Palms were used as a background to a series of beautifully made floral devices.

Messrs. Clibran & Sons, Altrincham, staged a good collection of Apples and Chrysanthemums and some fine plants of Celosia pyramidalis. These plants were of a fine branching habit of growth, and as the colour of the plumes was bright and attractive they should become popular for decorative purposes during the autumn months.

PALLANZA, LAGO MAGGIORE, ITALY.

NOVEMBER 6TH, 7TH, AND 8TH.

I HAVE much pleasure in informing you of the immense success of our first Chrysanthemum Show, which took place at Pallanza on the 6th, 7th, and 8th ult. There were in all about forty competitors, in addition to several who exhibited "not for competition."

Classes were arranged for groups, trained plants, collections of cut flowers under various conditions, also for decorative work, in which Italian gardeners usually excel. The exhibition was also extended to include Cyclamens, Violets, and foliage plants, which are a feature in this part.

As may have been expected, cut flowers and plants were exhibited in almost every conceivable manner, medicine and soda water bottles being to the fore, but the primitiveness in some instances lent a charm to the flowers, and to my view relieved the sameness and monotony so often met with at the exhibitions of Chrysanthemums in England. One method adopted was in moss to the depth of several inches being placed on tables, and kept in position by a narrow edging of wire netting nailed round. In this moss were bottles obscured from view in which the blooms were inserted. The flowers having some 9 or 10 inches of stem with foliage were seen to advantage, and the effect was at the same time simple and artistic.

Considering that this was the first exhibition held, and that the climate is so very hot, blooms and plants were very fairly represented, but large Japanese are evidently the favourites here, as at the English shows, the other sections of the Chrysanthemum being entirely disregarded except by myself, and of these the Rundles, Mdlle. Elise Dordan, King of Plumes, and the single Marguerites were much admired. This last variety, which I think is not very well known, or rather, perhaps, not often exhibited, would not look at all amiss as a front border to a large group by reason of its dwarf growth and prolific flowering.

I should like to say a word in praise of the exhibits in the decorative class, which were to me novel and attractive without the aid of epergnes or vases, which are evidently not in vogue here. One exhibit consisted of a huge bunch of some 200 blooms 4 to 5 inches in diameter, cut with very long stems and arranged loosely, but evenly, in an oak stand covered with Ivy; another resembled a bassinette with a hood beautifully executed; while a third exhibitor fixed upon a doorway with a stone pillar and arch for his labours, the pillar being entirely covered with regular slanting lines of yellow and purple blooms, and the arch with immense sprays artistically arranged.

Of groups there were few. The popular fancy is for lightness and plenty of foliage plants. I am sorry to say that I was called to account by some for making my group too solid; but, personally, I hold the view that when the flowers are fairly large they are more advantageously exposed to view for comparison when close to one another, and in the case of small blooms they are more favourably exhibited with plenty of foliage plants; but this, of course, is entirely a matter of taste, and I bow to those who hold a contrary opinion.

The King of Italy's gardener, who, by the way, is a member of the N.C.S., sent several blooms from Monza, which consisted of some promising seedlings. New varieties were also well exhibited by the Italian Chrysanthemum specialists, Messrs. Fratelli Radaelli.

The exhibition was followed by the usual dinner, with a firm determination to hold a Chrysanthemum show every year, and I hope next year to be able to say that the Society, which is called the "Societa Orticola Verbanese," is affiliated to the National Chrysanthemum Society of England.

But I have been writing this when, by the side of me, I find our local

journal giving a clear and detailed account of our exhibition, which I venture to enclose.—H. Briscoe-Ironside.

[We are very much obliged by this excellent description of the show written by our correspondent, which will be perused with interest by many Chrysanthemumists. We append a sample of the "clear account" of the show from the local journal *Il Toce*, and hope our gardening friends will enjoy it as a change from our orthodox methods of reporting:—"Fuori Concorso (not for competition). Gran Diploma Medaglia d'Argento dorata, dono del signor Marchese Felice D'Albertas, Presidente Onorario della Società orticola verbanese, al signor Henry Briscoe-Ironside per la splendida e farzosa esposizione di Chrysanthemi in fiori recisi ed in piante, di uno straordinario e perfetto sviluppo e par la elegante confezione e disposizione dell' insieme dei diversi suoi lotti, i quali destarono la generale ammirazione." We cannot equal the smooth charm of the Italian language, but can, in our rugged, stereotyped way, congratulate our respected compatriot on his success.]

THE PENTSTEMON.

A bed of well grown seedling Pentstemons has a charming appearance in the garden. To insure the best results the soil must be prepared by trenching in the autumn or early winter months, working in at the time a good dressing of decayed manure, while if the soil be naturally heavy a quantity of leaf soil should be added.

Presuming that the seed was sown in July in pans of light soil, and the seedlings pricked off into a cold frame and kept hardy throughout the winter, they will be dwarf sturdy plants by the following spring. In March they may be lifted carefully and planted into the prepared bed at a distance of 18 inches between the rows, and 15 inches from plant to plant, which distances will allow for perfect development. Pentstemons may also be raised from cuttings, which if inserted in pots or in a prepared bed in a cold frame in August or September, will make nice plants for removal to summer quarters by the spring. When the cuttings are rooted they may be pinched to induce a branching habit. These plants are susceptible to damping in the winter months, therefore great care should be exercised to maintain a dry and buoyant atmosphere, admitting abundance of air on all favourable occasions.

Due regard must be paid when planting to the various heights and colours of the varieties, and the effect produced will amply repay any extra trouble and preparation the cultivator may bestow upon them. Provided the flower spikes are removed as soon as possible after the full beauty is past. the plants will throw up a second crop of flowers, which will be much appreciated in the dull season of the year. It will be found advisable to either lift the old stools in the winter, or in mild localities to cover with coal ashes or other protecting material. A little attention given to crossing any good varieties where it is intended to save seed will be amply repaid.—H. T. M.

IN THE VALE OF NEATH.

The present autumn has been a remarkable one in many ways. Never do I remember seeing such a wealth of fresh bright flowers to mingle with the varied and rich colour of the autumn leaves. Our terrace walls, clothed as they are with the old China Blush Roses (Rosa indica), carry one's thoughts back to early June rather than November; while an old chimney is an object of great beauty, covered, as it is, with the crimson variety of R. indica. Even the Hybrid Perpetuals are loth to depart, and fine buds of Général Jacqueminot, John Hopper, Ulrich Brunner, and that lovely Bourbon Souvenir de la Malmaison, and others are still fragrant.

Dahlias are to be had in galore. At the recent Cardiff Show Mr. Wm. Treseder had a grand exhibit - not merely one or two, but hundreds of charming blooms in almost endless variety, excellently set up, and judging by the crowd of visitors around it, the exhibit was being accorded the praises it fully deserved. Chrysanthemums in the open have enjoyed the dry sunny weather, and never do we remember seeing them so clear in colour. Even the annual kinds are still flowering in profusion, while such tender annuals as Nasturtiums are still holding up their heads, and long lines of Calliopsis Drummondi and grandiflora—exquisite flowers for table decoration—are wonderfully bright.

We were fortunate in having a good bed of Marguerite Carnations, and since July hundreds of fragrant flowers have been gathered. With the protection of some old lights the flowers still continue to open, and should the present weather continue we shall have plenty at Christmas without the trouble of lifting into pots. This class of Carnation is invaluable for buttonholes, sprays, and decoration of any kind; being deliciously scented and charmingly fimbriated, it has a grace and beauty about it quite its own.—Exile.

CABBAGES.

The present autumn has been one of the most favourable experienced for some years for growing crops, and although the rainfall has not been so heavy as to make the Brassica family unduly succulent, many of the spring Cabbages have attained a size approaching what we should often be glad to see in early April rather than November. Should severe frost occur without snow, which affords such good protection, I fear many of the plants will be crippled; therefore another plantation made at the present time might save much inconvenience and annoyance in the spring, for with a good breadth of Cabbages to cut from when other vegetables are at their lowest ebb a blank is prevented. We usually make two good plantations of Cabbage—the earlier one on a south border, and a larger one, not many days later, at the bottom or north end of the garden. Not infrequently following severe winters the northern ones, from not being subject to the full rays of the sun after a severe frost, are the best.

Varieties, as with other vegetables, are numerous enough to suit all classes, but for the mainstay of the establishment we rely on that well-proved variety Ellam's Early, and taking everything into consideration it would indeed be hard to beat. Another good and popular variety in the West is Wheeler's Imperial, while those who require a large Cabbage can be suited by growing Daniel's Defiance. Sutton's Flower of Spring is also an excellent Cabbage in every way, and Sutton's April (quite new) is sure to make a reputation. Miniature Marrow affords a new feature to what we have previously seen in the way of Cabbages, and it is a novelty likely to prove useful to those who place excellent quality before size. It may be planted in rows 1 foot apart. The plants keep in good condition over a lengthy period without splitting after being fully grown.—Grower.

ROYAL HORTICULTURAL SOCIETY.

November 23rd.

Scientific Committee.—Present: Dr. M. T. Masters (in the chair); Mr. Douglas, Rev. W. Wilks, and Rev. G. Henslow (Hon. Sec.).

Gall on Jasmine.—With reference to the specimen brought by the Secretary to the last meeting, Mr. MacLachlan reports that it is quite impossible to fix on anything in particular in the way of a cause, but the puncture of a Phytoptus is the most probable.

Phyllotreta on Cruciferæ.—He also observes, with regard to the beetles shown by Mr. Michael as destructive to Stocks, that "the genus is the one to which the 'Turnip flea' belongs. There are about a dozen species in this country, all being much alike. They all frequent the *Cruciferæ*, and the fact that this one was also found on Tropæolum only intensifies the fact that most things which feed on the former will also feed on the latter, as—*e.g.*, the larvæ of 'Cabbage whites,' the interpretation being that both contain the same chemical vegetable products."

Dahlia, Hybrid (?)—Flowers were received from Mr. E. J. Lowe of Shirenewton Hall, Chepstow, supposed to be the result of crossing a Dahlia with the pollen of a Sunflower. The appearance was that of a Dahlia, the disc alone being rather larger. Dr. Masters undertook to examine them more minutely.

Cypripedium, Monstrous.—Mr. Veitch sent a plant of C. Tityus bearing a single flower. It had no lip, but two columns. It was referred to Dr. Masters for further investigation.

The Copper Plant.—Dr. Masters exhibited an illustration of *Polycarpæa spirostylis*, F. von Muëller. It has the above name, as it is said only to grow where copper is to be found, and that its presence is an indication to miners of the existence of that metal in the neighbourhood. It is found by the mines of Watsonville, N. Queensland.

Chrysanthemum, Proliferous.—A specimen bearing three flowers was received from Mr. B. Greaves of Broome Hall Gardens, Dorking. They were remarkable for consisting of a dense mass of minute heads instead of distinct florets. Some of the Show Dahlias, Dr. Masters observed, consisted of this peculiarity, the separate heads combining to make a single large "flower." The peculiarity is characteristic of the genus *Echinops*, only the individual heads contain but a single flower each.

Fruit Committee.

In last week's issue you report in the proceedings of this Committee an award of merit to an Apple Lady Falmouth. That award has the distinguished reputation of having been made by six votes for and four against. The variety bore so striking a resemblance to high-coloured Court Pendu Plât as often seen, and beyond being soft of flesh had no other merit, not even of size, that several members opposed the granting of the award. Very different was it the case with Mr. Rivers' excellent black Grape, Directeur Tisserand, which obtained a unanimous award of merit, and will probably get a higher honour if it can be shown some two or three months later as a good keeper.

Prior to the close of the meeting the present very unsatisfactory method of voting awards was discussed, and although some difference of opinion was elicited, yet it was ultimately carried without opposition "That the Council be invited to frame a regulation requiring any awards by the Committee to be made only by a majority of two-thirds of the members present." Should the Council accede to this request almost a revolution will be effected in the present system of voting awards, as rarely do all the members vote. On the recent occasion fifteen members were present, and yet a minority of six only carried an award, four being opposed and five neutral. It will be undoubtedly an advantage that every member be obliged to vote. This rule would compel the taking of active interest in everything which comes before the Committee.

The case quoted above as to awards being carried by minorities is not at all an unusual one, and perhaps accounts for the too frequent making of such awards. Members of the Committee should not plead they do not know anything of the exhibits before them. They ought to know, as that is the object for which they are made members, and in accepting those positions they cannot shirk responsibility.—D.

ORCHIDS

Vanda Sanderiana.

This interesting Orchid was first introduced into this country in 1882 by Messrs. F. Sander & Co., and has since attained an immense popularity. It produces leaves that are upwards of a foot in length and about 1 inch in breadth. The flowers, which are borne on long racemes, average about 4 inches across. The dorsal sepal is pale rose, lateral ones yellowish with red veins finely marked; petals rose, each with a small patch of red spots; the lip is small, dull yellow with red streaks. We hope this information, with the woodcut (fig. 79), will be of service to "Young Orchid Grower," and also to others.

Vanda cœrulea.

This is one of the most charming Orchids in existence, the lovely pale blue flowers comparing favourably with those of any other kind. A great deal of variation exists among the blossoms, some being of quite a deep blue, others much paler, while some, and these are usually looked upon as the poorest, are only a shade or two from pure white. The width of the segments, too, varies considerably; the edges of these overlapping in its best forms, and these make up a beautiful and bold flower. The spikes are graceful, and freely produced on healthy vigorous plants, making a fine display during the autumn and early winter. Its culture is not difficult when a suitable position for it is found, but this is not always easy.

There has recently been a good deal of controversy in the gardening press respecting the length of life under cultivation of various Orchids, and without entering into this it may be at once admitted that there are certain species that for many years—an indefinite time, in fact—go on and flourish under our care. Year after year adds to the bulk of the specimens, and small pieces lopped off, or divided portions, as the case may be, are grown to specimen size with little trouble. On the other hand there are kinds that, although they do well for a few years in Orchid houses, ultimately find the conditions not to their taste, and a backward tendency sets in that it is difficult, if not impossible, to arrest.

In the latter category this beautiful plant I am afraid must be placed, for although instances of successful culture over a long series of years may be on record, there is no disputing the fact that Vanda cœrulea as a rule pines under cultivat on for the ever-changing, yet always correct climate of its native haunts; for the buoyant atmosphere of the hills whereon it is found in such luxuriance; for the boundless canopy of Nature instead of the strictly limited one we provide for it in our Orchid houses. To yearn for the unattainable, however, is not the fashion among cultivators, and it behoves us to do our best with the means at command.

What, then, are the conditions under which this plant is found growing naturally, and how can we best replace these under cultivation? Collectors tell us that on the Khasia Hills the temperature often drops far below the freezing point, and this very Orchid is often covered with hoar frost. During the warm season, owing to the thinness of foliage on the trees it inhabits, it must be exposed to nearly the full power of the tropical sun. This is tempered by frequent drenching rains, causing always a damp atmosphere, but none the less these conditions are much too extreme for us to imitate under cultivation, and we have to strike a balance as near as may be between them, lessening the heat in summer on the one hand, and the cold in winter on the other.

The East Indian house is too hot for the plant, without doubt, and I know of no better position for it than one close to the glass, and if possible close to the ventilator, in the highest and sunniest part of the Cattleya house. In such a position I have had the best results, for there is plenty of warmth and moisture to encourage free growth, while the abundant light and free circulation of air tends to consolidate the system of the plant and the individual leaves as they are formed. During winter, or when growth is inactive, it may have even colder quarters, for there are few in this section that rest more perfectly than the species under notice.

For years I kept several plants in a house devoted to winter flowering greenhouse plants, generally where on cold nights the temperature was frequently below 40°, and although this seems very low, I can only say that the plants were subjected to it and did well, starting vigorously in early summer, and flowering profusely every autumn. When growth is active, light dewings of this Orchid several times daily are of great assistance, but this, of course, would be discontinued in dull or rainy weather, and when the flower spikes appear. While in bloom it is well to keep in mind the fact that too little atmospheric moisture is injurious to the plants, but too much shortens the life of the blossoms by damping.

With regard to a rooting medium this may be described as the least important point in its cultivation. By this I do not mean that it will thrive with careless potting, blocking, or what not, but that the roots are not fastidious about what they lay hold of, and seem to thrive equally well about the rods of a wood basket, over the surface of rough blocks, or planted in pots of sphagnum moss. But the rooting medium must be well drained, and err on the side of poorness rather than richness, or a close heavy description of material. The smaller the receptacle in reason the better, for the roots of V. cœrulea are not nearly so ambitious in pushing away from the centre of growth as are those of most Vandas of a like habit.

They grow and thrive when coiled around each other and over the sides of the pot or basket, and as long as moisture is provided they will be all right. Insects are not as a rule troublesome, and may be kept under by ordinary vigilance, but drip must be carefully guarded against, many fine specimens having been ruined by cold icy water falling from the roof into the centre of growth. As noted above, Vanda cœrulea is a native of the Khasia Hills, where it was discovered by the Indian botanist, Griffith, many years before it was introduced to cultivation by Mr. Thomas Lobb, who sent plants of it to the Messrs. Veitch.—H. R. R.

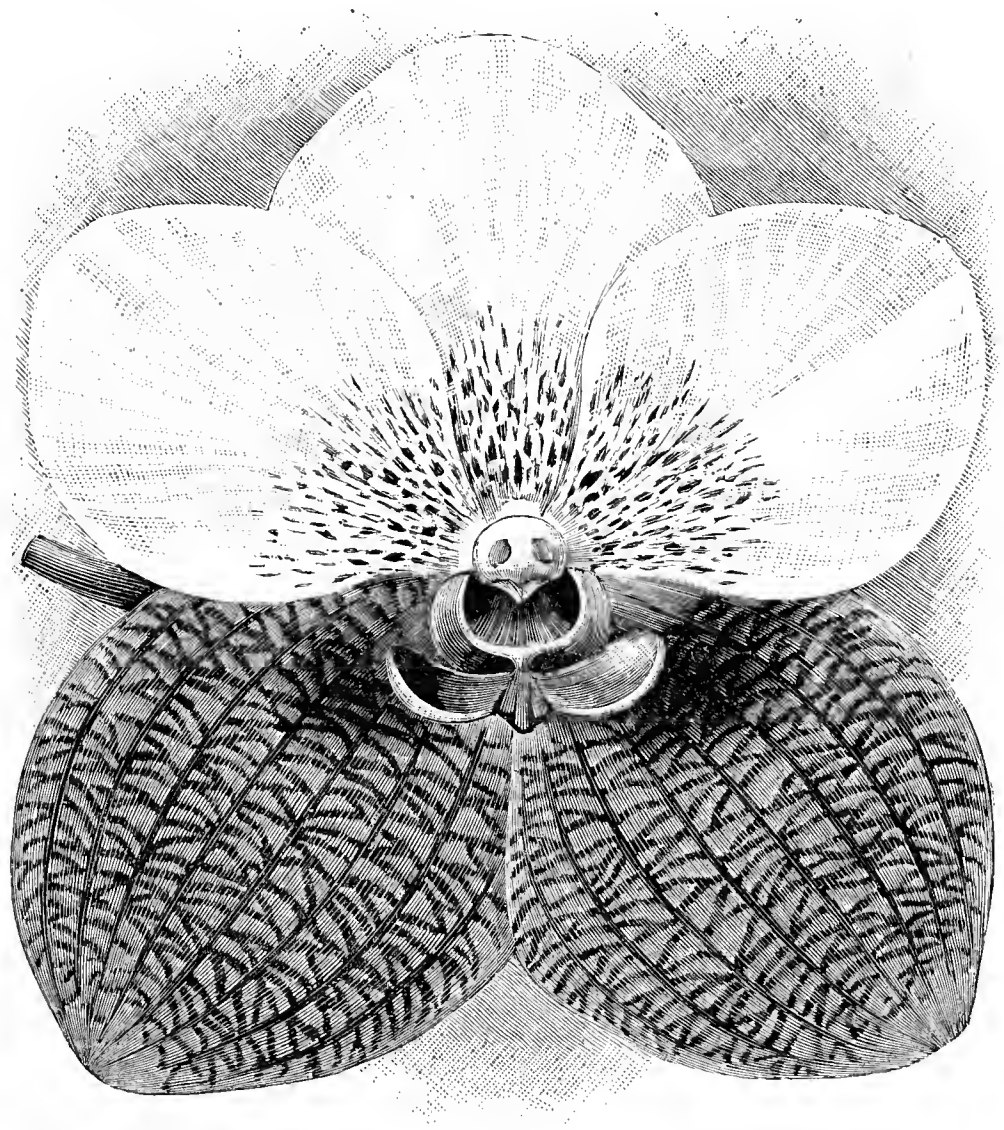

Fig. 79. Vanda Sanderiana.

BERICOTE HOUSE.

Pleasantly situated on rising ground a few miles from Leamington Spa is the delightful residence of Captain Starkey. Being in the neighbourhood a few days ago I thought I would call upon Mr. J. Tancock, the energetic gardener there, as I felt sure I should find something of interest, even at this dull season.

Although not an extensive place it is exceedingly well kept, and in summer time the grounds around the mansion must be delightful indeed, for from the grassy slopes and level stretches of lawn a fine view is obtained of the open country in front, which rises gradually up to the pretty Warwickshire town, whose waters are famed for their medicinal properties. In the plant houses I found the best of order was maintained, the plants being also in splendid health. Crotons, Palms, Ferns, and

Asparagus, of the right type for decorative purposes, were there in abundance, and Poinsettias and Gesneras added plenty of colour to the scene.

In a cool house at the end of the range I noticed a grand array of Cyclamens, plants of large size, having fine leathery leaves and a wealth of flower buds just beginning to expand. They are fine examples of cultural skill, and will, without doubt, be highly prized at Christmas time. Winter flowering Pelargoniums are also well grown here, the favourite variety being Kate Farmer, a soft salmon pink with large flower pips. Chrysanthemums made a good display in the conservatory, and although they are not grown for exhibition many of the flowers were wonderfully fine. The plants grown on the large bloom principle are found particularly useful for dotting among Palms in the conservatory, and for arranging at intervals among those grown as bushes; indeed, for such purposes a few large blooms ought to be grown in every garden.

A good sized Peach case has recently been erected. In this young trees are advancing well, and the wood being thinly disposed and not too strong, must ripen well. A few large bunches of Alicante Grapes remained in the late vinery. All the Vines are, however, old, and the borders are being renovated as quickly as circumstances will allow. On a shelf near the glass in one of the fruit houses Malmaison Carnations were to be seen in splendid condition, each leaf being perfectly free from disease and of a deep green colour.

The soil at Bericote is good, being a sound loam, rather heavy, just such a one as most gardeners delight in after it has been well worked. This is being done, and there are evidences on every hand at Bericote that Captain Starkey has a practical gardener who delights in his work, and performs with a will the duties entrusted to him and his assistants.—WANDERER.

ROSE CRIMSON RAMBLER.

How much has Mr. William Paul's recent note on this fine climbing Rose evidenced the value of euphony in a name. Who would have cared for a Rose under the name of "Engineer" or "Paniculata?" I hope that these harsh sounding appellations, whatsoever their priority, will be buried and forgotten. No name could have been happier than is that of Crimson Rambler, and evidence of its suitability to the plant has been furnished by the way it has caught on with the public. The case illustrates the need there is for more names that are of a catching and pleasing nature. We have, especially in Roses, far too many of what I may term epitaphal names, because they have served to rescue from merited oblivion so many living or dead persons never previously heard of. Very questionable honour is paid to worthy persons when flowers are named after them. Perhaps they are named in one year and found worthless and forgotten the next. Such is floral fame.—A. D.

AUTUMN PRUNING.

In many instances inexperienced growers whose Roses have made shoots 4 feet and 5 feet in length during the summer and autumn are tempted to cut them back with the view of making them look tidy during the winter. Others have an impression that when the wood has been formed and matured the sooner it is pruned the better; but all pruning in autumn is a mistake, and should never be done. Its injurious effects may not be seen immediately, but in the majority of cases they will become disagreeably visible before the summer. I have rarely known long uncut well-ripened Rose shoots injured by the severity of any ordinary winter; but when they were cut in autumn I have frequently seen them die back a considerable way from the cut part in passing through a winter of no uncommon severity, while intense frosts and bad weather killed many of them.

Again, it is well known that the buds at the tops of Rose shoots always start into growth first in spring, and when the weather is mild in February the shoots on the tops of the branches may become some inches in length; but the keen winds experienced as a rule in March destroy these to such an extent that all chance of their becoming useful ends. It is after this that the great advantage of being able to cut back the growths until sound plump buds are reached gladdens the cultivator; but with autumn-pruned plants no benefits of this kind can be experienced, as they are cut in until only a few buds remain, which may be induced to start prematurely in spring, when they are killed. If not quite killed these early growths are almost certain to be checked, and fail to become so strong or bloom so freely as later growths.

I would rather see my Rose buds quite dormant about the beginning of March, then the young shoots, several inches in length in April and May, would be free and vigorous, and this can only be properly managed by entirely avoiding autumn pruning. Some growths may be so long and straggling now that to allow them to remain so might injure the roots of the plant through their being twisted by the wind, and in such cases firm staking and tying is best; or if cutting must be done, the shoots should only be shortened back without going so deeply into the wood as to call it pruning.—ROSARIAN.

CONIFERS AND THE LATE WINDS.

THE gale that passed over this district (North Midland) on Monday, November 29th, was the most severe since the one in March of 1895. The last named did a large amount of damage, not only to property, but was also so destructive in the uprooting of fine trees, particularly the Coniferous family.

The strong north-westerly gale of last Monday destroyed or mutilated many of this family, notably a fine example growing here of the Greek Silver Fir, Abies cephalonica. This tree was feathered from the ground to the apex with healthy branches and foliage, and annually produced large numbers of its beautiful cones 7 to 8 inches in length. This year there were many hundreds of them, and their fine chestnut-brown colour was a striking feature in the autumn sunshine. The tree was 66 feet in height, with a trunk 7 feet 6 inches in circumference at 3 feet from the ground.

Although it has withstood the force of winds for perhaps fifty or sixty years, it happens that when these Silver Firs attain to a certain height their tops or heads spread out and become heavier, so it demonstrates their unfitness for the planting of avenues. The gale of 1895 was particularly destructive to the Silver Fir family, most notably Abies pinsapo, A. cephalonica, A. lasiocarpa, and A. excelsa, all upwards of 60 feet in height. The Lebanon Cedar also suffered severely, many fine specimens being blown down, and others broken about badly.

Not a tree in the long avenue of Wellingtonias here has been disturbed by the winds, and the giant Arbor Vitæ, Thuia gigantea, of which there are large numbers of fine specimens, 60 feet high, stands the strong winds well. The same may be said of Libocedrus decurrens. These three species of Conifers are certainly most useful for their wind-resisting power to anyone contemplating avenues of Conifers, but for their successful well doing, a good loam of sufficient depth is necessary. They are growing here in a soil with an average depth of 2 to 3 feet, with gravel beneath.—A. HARDING, *Orton*.

THE YOUNG GARDENERS' DOMAIN.

EARLY FORCING STRAWBERRIES.

In many establishments the earliest Strawberries are usually started early in December, and will produce fruit in March or April if desired. To maintain a continual supply it will be necessary to take in quantities of plants at intervals of about three weeks or a month.

All dead or decayed leaves must be removed from the plants, and the pots be well cleaned. Place the plants close to the glass in a temperature of 45° by night, with 5° or 10° higher in the day. After a few weeks the temperature may be raised from 5° to 10° higher. The syringe may be used twice daily in favourable weather up to the flowering stage, when it should be discontinued until after the fruit is set.

During the flowering season the atmosphere ought to be kept somewhat drier, and a free circulation of air should be maintained on every available occasion. Give the flower trusses a gentle tap about midday, as this will assist the distribution of the pollen. In many cases it may be advisable to thin out the fruit, when the remaining ones will be of much better quality. As soon as the fruit commences to swell the temperature may be raised gradually to 60° or 65° by night, with 5° to 10° higher in the day. A top-dressing of some artificial manure will prove beneficial to the fruit, but in my opinion it is best to be applied only after the fruit commences to swell. The flavour of the fruits is much improved by admitting more air.

Strawberries do not force well more than one season, so that a fresh supply of plants should be prepared annually. The soil most suitable is a strong and rich loam, with the addition of some decayed manure. Royal Sovereign is one of the best for early use.—J. F. D., *Yorks*.

CALANTHES.

THERE are many useful Calanthes, some of which are of evergreen foliage, while others, such as C. vestita, Veitchi, and Turneri, are of a deciduous nature. They generally lose their foliage about the time they commence flowering. When arranged tastefully with Ferns and other foliage plants they produce a charming display for a considerable time, while they last a long time, either as cut flowers, for which they are of great value, or when allowed to remain on the plants. Nearly all the species have striking and attractive flower spikes, the majority of which are large and of an erect habit. They are of easy cultivation, and are unsurpassed by any plant as regards their usefulness.

The compost I have seen them most successfully grown in is good fibrous loam and peat in equal parts, one-quarter part dried cow manure and silver sand. On this occasion they were grown in 6 and 7-inch pots, which were clean, and about half full of crocks. The pseudo-bulbs were sorted out, and three or four, according to their size, were placed in a pot. They had been previously rooted in boxes in a temperature of 65° by night, and from 5° to 10° higher in the day. The boxes had 1 inch of sphagnum in each, which seemed to suit the Calanthes admirably.

After potting they were kept close and well syringed about the pots, but the foliage was not wet at all. We watered them very carefully until the plants were well established, when they were removed to a temperature of 55° by night, and 10° higher in the day. A cleaner or healthier collection of Calanthes I have never seen. The greatest possible care was exercised in admitting air, and the plants were well shaded from the hot sun; but as much light as possible was afforded to them by removing

the shading as often as required. An occasional watering of clear soot water or prepared liquid manure was given each week after the pots were well filled with roots. The evergreen species should be kept rather dry during their resting season, which should commence as soon as flowering is over. The deciduous kinds require drying gradually as soon as they commence to lose their foliage until they are quite dry at the roots. These require a long and thorough rest after flowering.

Calanthes seem to be more subject to brown and white scale than any other pest. Red spider will sometimes attack them; but owing to the somewhat moist atmosphere which should be maintained this pest is well kept under. All kinds should be diligently sought for and destroyed if good results are expected. The best mode of propagation, to my knowledge, is division of the plants and preserving the smallest pseudo-bulbs, which are placed either in pans or pots and grown with the others.—J. F. D., *Yorks.*

Notes on Violets.

The Violet has always been a universal favourite, and deservedly so, for its innocent beauty and charming perfume claim the admiration and appreciation of all To insure success in the cultivation of Violets for gathering in winter, three essential points may be observed. 1, Plant early, thereby providing a long season of growth for the development and maturing of well ripened crowns. 2, Freedom from insect pests, or weak unsightly foliage and impoverished crowns will be in evidence, in lieu of dark green, glossy foliage and robust crowns. 3, Careful management after lifting throughout the winter, especially in ventilating and watering.

I have seen three methods of propagation, each giving good results. By division, selecting soft crowns which have not flowered the previous season, but merely auxiliary growths attached to the main crown by a subterranean stem, generally possessing at the junction good feeding rootlets, which also issue from the stem. By inserting cuttings early in March in boxes, using a good rooting medium, in ratio of 2 to 1 loam and leaf mould, with plenty of sand, placing in cool house or frames; and by layering the first-mentioned soft crowns or runners between the plants in a frame selected for propagation. Place about 2 inches of soil as above, having previously just loosened the existing soil. Secure the layers firmly with wire pegs or their equivalents, and water thoroughly. Syringe twice daily in bright weather, and keep the soil in a moist condition always. Roots will soon be plentifully emitted close to the crown.

This latter method is, I think, preferable. The afternoon prior to planting the plants should receive a thorough soaking, when if lifted with care sufficient soil will adhere to the plant to give it a fair start without a check. The advantage is also seen at flowering time, better colour and more substantial blossoms being the result.

The date of planting will be governed somewhat by climatic influences. For warm localities the first week in April is very suitable, but in colder parts the plants may be allowed to remain attached to the parents till favourable weather prevails. The site selected for planting should be open, and protected if possible from easterly winds. A good friable loam, in which has been incorporated plenty of Mushroom bed refuse or decomposed leaves and manure used for hotbeds, with the addition of a good sprinkling of soot, suits them well. When planting allow 12 inches asunder each way, which greatly facilitates the successional hoeings; water well, then give a light mulch to conserve the moisture. The frequent use of the Dutch hoe will be necessary during the growing season to keep weeds in subjection, as constant stirring the soil prevents undue evaporation during dry weather.

During very hot weather spraying as the sun leaves them is very beneficial to the plants, besides preventing the ravages of red spider. Should the pest make its appearance, syringe forcibly, especially the under side of foliage, with a solution of flowers of sulphur, adding a little soft-soap to aid adhesion. After the Violets have been planted from six to eight weeks, give a slight dusting of soot, and again at intervals of two to three weeks onwards, interchanging sometimes with guano. If possible manure in showery weather, or water it in. Remove weakly and surplus runners as they appear. If the soil be very light about the middle of August give the bed a good treading, as this tends to throw the strength into the plants rather than in the production of runners. This is the summer treatment; a few more lines for winter management shall follow in due course.—H. Turner.

GARDENERS' CHARITABLE AND PROVIDENT INSTITUTIONS.

The Gardeners' Royal Benevolent Institution.—*Secretary* Mr. G. J. Ingram, 50, Parliament Street, London, W.C.

United Horticultural Benefit and Provident Society.—*Secretary*, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

Royal Gardeners' Orphan Fund.—*Secretary*, Mr. A. F. Barron, The Royal Gardeners' Orphan Fund, Chiswick, W.

A Useful Almanac.—We have recently received a copy of Holloway's Illustrated Almanac for 1898, and find it contains much useful information relating to everyday affairs. This is beyond the ordinary calendarial matter, while in addition illustrations, accompanied by letterpress explanations thereto, are given of several of the sports of the world.

HARDY FRUIT GARDEN.

Planting Raspberries.—Suckers which issue from the soil some distance away from the main stools form excellent plants for present planting where it is desired to renew or extend the Raspberry quarters. The suckers selected for this purpose should possess some vigour, which is best indicated by the mass of fibrous roots attached when lifting, rather than the thickness of the canes.

The soil for Raspberries ought to be well and deeply prepared, enriching it during the operation with a liberal quantity of rich farmyard manure. The possibility of making the soil too rich is not to be feared in this case, because it is essential that the roots have good feeding in order that strong vigorous canes be produced, without which profitable crops cannot be secured. Raspberries form strong roots, which descend deeply, and near the surface a mass of fibrous roots. The presence of these latter affords a good reason why the ground previous to planting must be thoroughly prepared. The practice of digging among the plants, especially close to the stems, is not a good one owing to the certainty of destroying these roots wholesale.

Raspberry plants are usually arranged in lines or clumps of three plants. In the former method stout posts are fixed at each end of the rows, these being 5 feet apart. Three lengths of wire may be fixed along each row, stretching them tightly. If the rows are long support in the middle also. The lowest wire may be a foot from the ground, the others 2 feet asunder above. The plants may be placed 15 inches apart in the rows. Clumps should be in rows also, 5 feet or 6 feet apart. Each clump may be 3 feet from the next one, three plants in each. A stout stake must be fixed in the centre, to which the canes from each plant must be eventually trained.

In planting spread out the roots in shallow holes, and cover with fine soil distributed upon them from the stem outwards, making the whole firm without injuring the roots. Mulch the soil with short manure.

Previous to growth commencing in spring the canes of all newly planted Raspberries must be shortened to within a foot of the soil. This induces the buds at the base to push strong growths, a selection of which is retained for the following year's fruiting. Prince of Wales, Baumforth's Seedling, Superlative, and White Antwerp are good varieties.

Planting Bush Fruit.—*Gooseberries.*—This is the best season for planting either small or large bushes, but it is more satisfactory to plant those not older than two or three years. It pays to liberally manure and thoroughly move the soil in preparing the site, so that the plants may obtain a good start. Gooseberries succeed very well planted between Apple trees, if both are planted at the same time and neither crowded. When planted in a quarter to themselves the distance, both between the rows and the plants, should be 6 feet.

Growing Gooseberries against walls or espalier fences is a method which might be more freely practised, inasmuch as good crops are secured and the buds are not so frequently picked out by birds as from bush plants. The branches should be trained as upright cordons. In establishing these, shoots are trained horizontally right and left of the main stem. From these upright shoots are laid in, training them straight. As these produce side shoots the latter are stopped in summer at the third leaf. This induces the formation of spurs near the stems. The winter pruning each year consists in cutting back the summer stopped shoots to within an inch of their base.

Bushes in the open quarters are best when plenty of young wood is annually retained at regular distances without crowding. Six good and useful varieties of Gooseberries are Red Warrington, Crown Bob, Early Sulphur, Matchless, Whitesmith, and Pitmaston Green Gage.

Red and White Currants.—These fruits require identical treatment in planting, training, and general culture. Soil, aspect, and distances apart may be the same as for Gooseberries. They also succeed on walls and espaliers. The pruning must be on one principle only, whether growing the plants as bushes or upright cordons. The formation of bushes consists in originating five to seven main branches. Shorten the side shoots in summer, and in winter spur them back to the buds at the base. The main branches may extend about a foot yearly, or a little less, according to the vigour displayed—that is, the leading shoots should be pruned back in winter to the extent named, until the height desirable is reached. When the plants attain to a free fruiting condition apply liberal mulching of manure annually over the roots. Good varieties of Red and White Currants are Red Dutch, White Dutch, and Raby Castle.

Black Currants.—Healthy young plants with strong shoots must be selected. Rather moist and heavy ground, though well drained and fertile, is better adapted for Black Currants than for Red and White. The chief point in the management of bushes is to retain sufficient young wood annually to furnish them, cutting out the old.

FRUIT FORCING.

Cherry House.—The trees must now be pruned. Full-grown trees, properly attended to in stopping during growth, will require very little pruning now. Any summer shoots that have grown considerably should

be cut back to about an inch of their base, and the worn-out spurs may be shortened or removed as required. Cut out dead spurs and thin those that are crowded, always reserving sufficient for producing a crop. The terminal shoots in the case of trees extending must not be shortened, but when they reach the extremity of the trellis they will need shortening, always to a wood bud. Young trees will require to be cut back as may be necessary, the central shoots being shortened so as to originate others for filling the space regularly, but it is not desirable to start them too closely together, as that may cause the branches to press against each other, and this commonly results in gumming. Fan-training is unquestionably the best for the Cherry, as it admits of replacing any branch falling a prey to this disease, and of renewing worn-out limbs. Thoroughly cleanse the house—the woodwork with soapy water and a brush, the glass with clear water, limewashing the walls, using freshly burned lime with a handful of flowers of sulphur to each pailful of whitewash. Syringe the trees with hot water, 130° to 140°, to subdue any hybernating pests, and if infested with red spider dress with a solution of caustic soda and pearlash in equal parts, using 2 ozs. of the mixture to a gallon of water, and applying by means of a clean, half-worn, painter's sash tool, so as to wet every part evenly, especially the cracks and crevices of the bark, taking care not to injure the buds. Remove the loose surface soil and supply fresh loam, with a fourth of well-rotted manure intermixed, sprinkling on the surface a good handful per square yard of some approved fertiliser, scratching in very lightly with a fork. The roof-lights being off they need not be replaced until the time arrives for starting the trees, which should be about the middle of this month to have Cherries ripe early in May. The very early varieties will ripen sooner, such as Belle d'Orleans and Rivers' Early, these being followed by Governor Wood and Black Tartarian. Cherries must not be brought forward too rapidly, especially when forcing them for the first time. Trees under fixed roofs should be well supplied with water to keep the soil moist; but fixed roofs are great mistakes in the early forcing of Cherries, unless these are grown in pots, when they will be placed outdoors after the fruit has been gathered and wood sufficiently developed. Trees in pots are readily forced, and afford excellent fruit at the end of April or early in May, when fresh ripe fruit is not over-plentiful, Cherries are then always appreciated at table.

Vines.—*Earliest in Pots.*—The Vines started from the beginning to the middle of November to afford ripe Grapes at the end of March or early in April, require the temperature increased to 60° at night after the buds break, gradually increasing it so as to have 60° to 65° at night when they are in leaf, 65° by day in dull severe weather, and 70° to 75° by artificial means when mild. Moderate ventilation should be given under favourable external circumstances, and early, but without lowering the temperature, so as to effect a change of air, allowing an advance of 10° to 15° from sun heat, and closing at midday or soon after. It is a good plan to admit a little air at 70° under any circumstances, thus allowing the pent-up moisture to escape and entirely displace the vitiated atmosphere by fresh, but with a rising temperature, keeping 80° to 85° from sun heat, and closing so as to gain 5° rather than to lose any benefit from the sun. In sharp weather enough air will gain admittance by the laps of the glass without admitting any through the ventilators; but modern structures are so improved in close fitting lights and large panes of glass that it is necessary to admit air when the sun is powerful and the external air keen, and the object to secure is a sweet atmosphere without checking growth. Tie the Vines in position as soon as growth has well commenced, and before the shoots are so long as to be liable to damage in the process. Add fermenting materials to the bed so as to maintain the heat about the pots at 70° to 75°. These will give out a genial moisture and a little ammonia, and are far better than evaporation troughs kept charged with liquid manure. The house requires sprinkling with water two or three times a day in bright weather, avoiding a very moist and stagnant atmosphere. Disbudding should not be practised until the bunches show in the joints of the shoots, the extra foliage encouraging the formation of roots, and if the superfluous growths are gradually removed, the sap will be diverted into and strengthen those which are left.

Houses to Obtain Grapes in May.—The Vines to supply Grapes in May should be well established in inside borders, and have ripened the growths early, so as to allow of their being pruned and given a few weeks' rest before starting. Black Hamburgh, Buckland Sweetwater, Foster's Seedling, and the fine Muscat Madresfield Court are suitable. If Muscat of Alexandria be required early, the Vines must be started now to ripen the Grapes by the end of May or beginning of June. The outside borders, if any, should be protected from frost by dry leaves with a little litter over them, and in due time be covered with two-thirds of leaves to one of stable litter, mixed and moistened so as to promote fermentation and give a mild, lasting warmth. This will need to be added to from time to time, removing some of the spent material so as to maintain warmth through the winter, or it does more harm than good; yet Vines with the roots entirely outside—not by any means rare—must have warmth when early forced. The inside borders should be brought in a moist, not saturated, condition by applying tepid water, and in the case of weakly Vines liquid manure. Start with a temperature of 55° at night and 65° by day, unless the weather is severe, when 55° will suffice until the buds commence swelling; but young Vines will require the higher temperature to induce them to start promptly. If a bed of leaves and stable litter can be placed on the floor of the house and turned daily the moisture and warmth will contribute to a good break and save fuel. Maintain a rather moist atmosphere by syringing the Vines two or three times a day. The rods of young Vines should be depressed to a horizontal line, or below it, to insure the regular breaking of the buds.

Succession Houses.—The Vines to afford ripe Grapes in June, being started at the new year, will have been pruned some weeks back and kept cool and dry, but if this has been delayed it must be attended to at once, dressing the cuts carefully with styptic, patent knotting or French polish; the latter stops bleeding, but the house should be kept cool so as to cause the sap to recede rather than flow with the warmth. Dress the Vines after thoroughly cleansing the house, and supply a top-dressing of loam with some enriching material, after removing the loose surface soil, a little well-rotted manure and sprinkling of approved fertiliser on the top giving good results.

Midseason Vines from which the leaves have fallen, and most, if not all, the Grapes cut, should be pruned. Any Grapes still hanging may be cut and placed in bottles of clear rain water in a cool dry room, where they will keep much better than on the Vines, especially where there are plants in the house, and air cannot be freely admitted on that account. It is a decided advantage to prune the Vines as soon as the leaves have fallen, as it secures them a long period of rest, and any circulation of the sap is concentrated on the primary buds, so that they start promptly at the proper time. In pruning adhere to the practice that has proved satisfactory. Vines in good condition will usually give sufficiently large bunches if pruned to one, or at most, two eyes, and bunches of 1 to 2 lbs. weight are generally more in demand for home use, and even for marketing, than larger, as it is essential that the table or customer be supplied with fresh fruit. If larger bunches are desired, or the Vines from weakness do not afford bunches so large as desired, leave more growth, only take care to select sound, round, well developed buds on firm well-ripened wood. Dress the Vines, merely removing the loose bark; cleanse the house thoroughly, and put everything into proper order, so that there need be no hurry and badly performed work at starting time. Light and cleanliness are important factors in Grape cultivation, and far too often overlooked, hence the resultant disasters.

Late Houses.—Every precaution should be taken against damp. The weather has been very unfavourable to the keeping of thin-skinned Grapes, and still continues to be disastrous to such as have to be kept in houses that have flat and leaky roofs. Thin-skinned Grapes are much better cut and bottled, especially where there are plants in the house, as they keep well in any spare room that is cool and dry, it only being necessary to exclude frost and look the Grapes over occasionally for the removal of decayed berries.

Late Muscats of the thin-skinned varieties, such as Muscat of Alexandria and Canon Hall, require a drier atmosphere and warmer temperature than other kinds of Grapes, the temperature needing to be kept at 50°, and the atmosphere not allowed to become stagnant, but be freely ventilated whenever the weather is favourable. When the weather is dull and damp, gentle warmth in the hot-water pipes will be necessary to keep the atmosphere moving and expel the damp, taking care not to allow the temperature to be raised by natural means without giving air, otherwise the moisture will be condensed on the cooler surfaces of the Gapes, and spotting and decay speedily ensue. Remove all leaves as they become ripe, and strip the Vines of any as yet green laterals, but allow the main leaves to fall naturally. All the thick-skinned varieties are best allowed to remain on the Vines until about the new year, as they thereby improve in quality. Sufficient fire heat to maintain a temperature of 40° to 45° is essential, closing the house in damp weather, and secure as far as possible a dry, cool atmosphere, and equable temperature.

PLANT HOUSES.

Chrysanthemums.—Whether good bushes or large blooms are required, cuttings should be inserted where they can be obtained. It is better to wait for a time before insertion, rather than utilise growths from the stem or poor puny cuttings. Those for large blooms if inserted singly in thumb pots, will root freely, even quickly, when placed under hand-glasses in a cool, airy house. When rooted under cool conditions the plants can be grown without subjecting them to heat. All that is needed is to protect them until they can be turned outside. Where large bushes are needed three cuttings may be inserted in each pot, and properly grown these will produce an enormous supply of flowers. For this purpose only free-branching and free-flowering varieties should be selected. The stools, after they are cut down, should be kept in a cool airy structure until the cuttings have been taken; nothing is gained by placing them in heat. The plants often die, and the cuttings produced are weak, and sometimes fail to root.

Hydrangeas.—Varieties of H. hortensis that have been rooted in small pots, have prominent flower buds, and the foliage has ripened naturally, may be potted from time to time as opportunity offers. Pots 5 inches in diameter are most suitable, and the plants should be potted so that the first leaves produced are close to the rim of the pots. These plants do well if placed in good loam, one-seventh of manure and sand. Old Cucumber and Melon soil mixed together will grow them splendidly. After potting the plants should be kept in a cool, airy house for a time, when a few may be introduced into a vinery or Peach house that is just started, or any structure with a similar temperature. Plants that are kept for stock may be cut close back and rested in any cool place, and then started into growth under the conditions advised for those that have formed flower buds. Plants of H. paniculata grandiflora that were potted while their leaves were on them will have formed some roots. The shoots may be pruned close back, leaving one or two of the eyes of the last year's wood. These plants do best if plunged in cold frames, and allowed to start naturally into growth.

Lilium Harrisi.—All plants that have been removed from ashes and have turned green should be placed on shelves close to the

glass, where they will make sturdy growth. Be careful never to allow the plants to become dry, and watch for aphides, which are very liable to attack the plants in their points. Aphides are readily destroyed by fumigating the house or plants with tobacco smoke, or some of the various inventions provided for the purpose.

Cinerarias.—The latest plants of these should be transferred into larger pots and placed in a cool airy house, where they can come forward slowly. These, if cared for, and kept free from aphides, will be found useful when all the earlier plants are past their best. Do not allow plants that are well developed and throwing up their flower spikes to be crowded together so that their foliage will damp. Water during the early part of the day, ventilate freely on all favourable occasions, and do not employ more fire heat than is really necessary. Clear soot water, or other weak stimulants, should be given every other time the plants need water. Keep the plants standing on some moisture-holding base, or they are certain to lose their lower foliage, and if a dry atmosphere is maintained they are certain to be attacked by aphides.

Primula obconica.—Well developed plants will soon come into bloom if they are introduced into a temperature of 50°. If the blooms are required for cutting only they can remain in this temperature; if for the conservatory, they can be removed to that structure as soon as they are presentable. Plants that are required for later flowering may be kept cool in any light airy structure where the temperature does not fall below 45° at night.

Double Primulas.—Plants that are wanted in flower may be placed where the temperature ranges about 50° at night. They will soon come into flower and continue for a long time. No attempt must be made to keep them in a close confined atmosphere, or they are certain to damp. A moderately dry atmosphere should be maintained, with a little air on all occasions when the weather permits of it, ventilators being opened.

Justicia flavicoma.—This much-neglected plant will make the conservatory gay at this period of the year. When the first flowers are over the plants should not be cut back or thrown away, for they will flower a second and even a third time. Very frequently the second flowering is decidedly the better one. The plants may be introduced again into warmth. When well grown the dark glossy foliage of the plant is attractive, and the contrast is very striking when large plumes of yellow flowers are produced.

THE BEE-KEEPER.

Seasonable Notes.

Usually at this season all is quiet in the apiary; bees settle quietly in their winter quarters before the dark days of November set in, and as the weather is often cold and wet throughout the month several weeks will often elapse without a bee being observed on the wing. The month now drawing to a close has been so exeeptionally fine that bees have been almost daily on the wing, their merry hum being heard in all directions, reminding one of spring, instead of what is usually looked on as the most gloomy month of the year.

As showing the mildness of the weather Heliotrope is still a mass of bloom in the open air, and as healthy and fresh-looking as at midsummer. This is remarkable for the county of broad aeres, as it is one of the most tender plants, and the first to suecumb after a slight frost.

The fine weather experienced throughout the autumn will have been favourable to the bees, if they have been well eared for and previous instructions carried out. Unfortunately, through various eauses, work that should have been done early in the autumn has been postponed to a more favourable season. No time should be lost in attending to the small details of bee management, as severe weather may get in at any moment.

In the first place examine all roofs to see that they are rainproof, and if they have not been painted as previously advised it should be done at once. If extra coverings have not been placed on the frames it will be an advantage to do so. Any warm material will answer the purpose, such as old pieces of carpet, sacking, or even paper. Several thicknesses of the latter, with a piece of board placed on the top, will keep the bees warm, and no harm will happen to them during the most severe weather.

A warm cushion may be made by taking an ordinary bag and partly filling it with cork dust, or chaff, or something similar. But whatever is used a quilt must always come next to the frames, afterwards using some earpet, and then the cushion on the top of all. Cork dust, when it can be procured, is doubtless the best, as it is warm and allows ventilation. I do not advocate waterproof coverings during the winter months, as moisture will condense on them.

If bees are short of stores give them a frame of sealed food, or a cake of candy on the top of the frames. It is not necessary to remove the coverings at this season, as it may do harm. By lifting the hive bodily one may tell at once if food is required.

Packing Hives for Winter.

All will depend on the elass of hive that is used, whether winter packing is required. The above notes on extra coverings on the top of the frames is in a sense packing them for winter; but what is usually known by this term is when there is an air or open space of one or more inches left round the sides of the hive, and an excellent plan it is to have hives made in this form. They are also known as double-cased hives, and is really one hive placed inside of another, as it were.

These answer admirably for all purposes. Some bee-keepers prefer the air space being left open both winter and summer; others prefer packing the sides with a light warm material for the winter months, removing it in the spring when the weather is warm. For this purpose there is nothing to equal corn dust or Wheat chaff, the former is preferred. The packing may be placed round the sides of the hive without disturbing the bees. In all probability the quilt will be securely fastened down on the top of the frames with propolis, as it is usual for the bees to fasten down the covering that eomes in contact with the frames, and also to fill up every crevice with propolis.

All that is necessary is to lift up the outside edge of the quilt if it overlaps the frames, and fill the space between the two sides as advised above. The packing should be placed in firmly, and the bee-keeper may rest assured that if the bees are healthy and well provided with stores, the most severe frost that may be expected in this country will not harm them; and bees treated in this manner invariably come out strong and healthy the following spring.

When hives are packed in this manner a word of caution is necessary—not to be in too great haste in removing it until fairly warm and settled weather is experienced in the spring, as the inmates will feel the effect of sudden changes in the weather. It is not necessary, as I have proved on many occasions, to pack hives of this description, as I have found bees invariably winter well when the air space is left open throughout the winter. Packing, however, has the advantage of keeping the bees warmer than they otherwise would be in exceptionally severe weather. The disadvantage of having all hives with an air space round the sides is that it makes them more bulky.—An English Bee-keeper.

TO CORRESPONDENTS

All correspondenee relating to editorial matters should, until further notice, be directed to "The Editor," **8. Rose Hill Road, Wandsworth, London, S.W.**, and **NOT** to Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjeets them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at onee. All artieles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return eommunications which, for any reason, cannot be inserted.

R.H.S. Examination (*L. G.*).—If you write to the Secretary, Royal Horticultural Society, 117, Victoria Street, Westminster, enclosing a stamped direcided envelope, he will furnish you with all particulars relative to these examinations.

Worms in a Lawn (*E. A. L., Ascot*).—One of the best means of bringing worms to the surface is to dissolve a peck of newly slaked lime in 30 to 40 gallons of water. Mix the whole thoroughly well together, and allow it to stand a day or two. Then draw off the clear water and distribute it over the lawn with a large rosed water-can. Apply in damp weather, removing the worms which appear as soon as possible. If lime water is not effective try corrosive sublimate, dissolving half an ounce in 15 gallons of water. Apply after rain with a rosed can. Do not give the worms to fowls which are brought to the surface with this mixture, as it is poisonous.

Sulphato of Iron Solution for Vine Mould (*Vines*).—We have not found the solution at a strength of 15 per cent., 1 lb. of green vitriol of 1½ gallon of water, injure the current year's wood. It was not applied in excessive amount or a careless manner. We should not dress closely peeled Vines with it. The bark prevents the solution penetrating the living tissues. It simply requires to be applied as an ordinary winter dressing by means of a clean half-worn painter's sash brush, coating all parts of the rods whilst quite dormant.

Botanical Names of Pear and Apple Stocks (*W. M.*).—The botanical name of the Pear stock is Pyrus communis, and that of the Apple P. Malus; but you say "commonly used," and the botanical names of those stocks nobody knows, for they are seedlings from pips of Pears usually collected on the Continent or the perry making counties of England, and have no connection with the botanical name, being mere, and very remote, varieties. Similar remarks apply to Apple stocks. Paradise stock are varietal, originating in different countries. The Doucin is regarded as Dutch, Pomme de Paradis as French, and the Broad-leaved Paradise and Nonesuch Paradise as English.

Raising Crab Stocks (*Youngster*).—Crab stocks, so called, are raised by sowing the pips or seeds of Apples that are used in cider making, the seeds being separated from the pulp, washed, and dried. They should be sown as soon as they are available and the ground is in a suitable state, as they lose their vitality in a short time. If sown broadcast in beds the seeds must be thinly distributed, not covering them more than an inch deep with fine soil; but it is best to sow in drills an inch deep and 9 inches asunder. After depositing the seeds in them thinly cover with fine soil, and press close with the back of the spade. The situation should be open. In the autumn following the seedlings may be transplanted, placing them in rows about 3½ feet apart, and the plants 18 inches asunder in the rows, where they may remain until fit to bud or graft. Those are free. True Crab stocks are obtained from seeds of the wild Crab.

Black Currant Buds Swollen (*T. W.*).—Yes, they are infested with the Black Currant bud mite (Phytoptus ribis), and we are not surprised at the bushes not finishing their crops well for the last two seasons, as the buds then affected would more or less interfere with the supply of nourishment to the fruit. On a shoot of thirteen buds, ten are swarming with mites, several hundreds in a bud, and only three buds free from them. Trenching is of no use, though often advised, either before or after attack. The best thing is to end the mites, and the best plan will be to cut off every swollen bud at once, place them in a pail smeared inside with paraffin oil, and having a fire handy turn each pailful of the buds on it. This practical method, followed by spraying the bushes when dry with a solution of soluble petroleum, though tedious, will be found far away the best plan, as one-fourth of the buds may be thus saved for producing shoots and berries. The alternative plan is to cut the bushes down and burn the prunings, then dress the stumps with soluble petroleum; this means the loss of a crop of fruit, though in your case it must be a small one. Cut some of the worst bushes down, dress as advised, and communicate results in due time.

Diseased Malmaison Carnations (*R. Johnson*).—The "grass" is badly infested with a fungus, probably Puccinia Arenariæ, which forms small brown masses, often in irregularly concentric groups on the leaves of many Caryophyllaceous plants. The masses on Malmaison Carnation "grass" are larger than on Pinks, and are more disastrous to cultivated than wild plants, for this fungus infests a number of wild as well as garden plants of the class named; and, unless the fungus is very abundant the host plant is not materially damaged or hindered in its growth. The spores are pale yellowish brown and slender. They are abundant, and the mycelium of the fungus is unusually vigorous in the "grass" you sent. There is no remedy for these internal parasites, except by the removal and destruction of the infested growths; but the disease can be prevented by early treatment with copper, and bad as your plants are we advise your spraying them with precipitated carbonate of copper in suspension at intervals of seven days twice, and afterwards at fortnightly or three weeks' intervals. Use 1 oz. to 12½ gallons of water, merely covering the "grass" each time with a mist-like but even water film on both surfaces.

Grub in Plums (*T. W.*).—The grub, according to your description, appears that of the Plum moth, Carpocapsa funebrana, which sometimes causes the fruit to drop prematurely, thus spoiling the crop. It is very difficult to give a remedy, or even a preventive, as the moths come from neglected orchards, and even wild species of Prunus, depositing an egg in due course on each selected Plum whilst comparatively young. Thus, unless all the infested trees in your neighbourhood are treated, there will be little use doing anything. However, as you say your neighbours have used a certain article and failed, they may, perhaps, be induced to try the following, which we have found effectual in a locality where the surroundings were under control. 1, Dress the trees with a solution of soluble petroleum, following the instructions for winter dressing, for the prepared article varies in strength of different makers, and brush it well into the cracks of the bark where the caterpillar lies in a cocoon. This must be reached and the "silk" saturated with the soluble petroleum. 2, Remove all dead leaves and pieces of dead twigs and branches from under the trees and burn them, scattering the hot ashes on the ground under the trees. 3, Spray the trees as soon as the fruit is fairly set with Paris green paste, 1 oz. to 15 gallons of water, and repeat twice at intervals of a fortnight or three weeks; a shorter time if wet, a longer period if dry weather prevail.

Plants for Wall with North-West Aspect (*Ivanhoe*).—Ampelopsis Veitchi, a close clinging, free growing, miniature foliaged clinger, with leaves dying off with a purple tint; Berberis Darwini, an evergreen shrub with golden yellow racemes of flowers, only suitable for a low wall; B. stenophylla, grows much taller, and has very beautiful pale yellow racemes of flowers; Caprifolium periclymenum and var. alba præcox, free growing Honeysuckles; Corchorus japonicus, double yellow flowers, plant free growing; Cotoneaster Simmondsi, and B. microphylla, evergreen shrubs, bearing an abundance of scarlet berries in autumn; Jasminum nudiflorum, producing yellow flowers in winter. Ivies do better than anything on a north-west aspect. Hedera helix var. conglomerata, pretty for rockwork; cuspidata minor, Donerailensis gracilis, lucida, marginata aurea, marginata, marmorata variegata, and Wilkeana are handsome. Those, with Ampelopsis Veitchi, Jasminum nudiflorum, and the Honeysuckles are the most suitable.

Gooseberries in Pots as Cordons for Walls (*S. T.*).—The idea is good, and the method, if well carried out, would no doubt give fair returns under the best culture, and in time possibly equalling your estimate. You may either raise the plants as you propose or insert the cuttings in pots, and then proceed as for Chrysanthemums. The plants might be induced to make 2 or 3 feet growth in the season, but you must remember that spurs are of more importance than mere length. Pots 8 inches in diameter are large enough the first season. We have grown both Gooseberries and Currants in an orchard house, fruiting them in 10-inch pots, but we stopped them at every foot in height for spur formation. The success of the plan must depend entirely on the cultural skill and good judgment by which it may be carried out. You had better choose free upright growing varieties. You might obtain a little fruit the second year, but nothing worth speaking of. It is a question if the cordons would not be better formed by planting in rich soil outside than potting them.

Mr. Neild's Illustrated Vine (*H. S.*).—Mr. Neild obligingly supplies the following information in reply to your request:—The Gros Colman Vine that was grown in a quarter of a cubic foot of soil, and illustrated in the Journal, was propagated from a bud inserted in March, 1896. The Vine was 6 feet in length. My object in growing the Vine in such a limited quantity of soil was to confirm or otherwise my views with regard to the extravagant size of Vine borders. I should not expect the Vines to produce so good a crop next year, because the large crop had a very exhaustive effect upon them. We should have grown the Vines another year, in order to note the result, had it not been for want of a suitable house for the purpose. This year and last year they were grown in a house along with permanent Vines, but as there will be a number of lateral growths produced on those Vines next year we considered that the Vines in boxes would be too much shaded to afford them a fair trial, or to produce satisfactory results. The other varieties of Vines grown in small boxes were similar in every way to the one referred to. Information on your other question arrives too late for insertion this week.

Plants for Unheated Greenhouses (*Inquirer*).—If you have a border for a climbing plant the roof may be covered with the common Passion Flower (Passiflora cœrulea), which, hanging down in festoons, gives a very pleasing appearance and agreeable shade in summer. Of plants, Aralia Sieboldi and var. variegata, Bambusa Fortunei variegata and var. aurea, B. gracilis, Citrus trifoliata, Desfontainia spinosa, Daphniphyllum glaucescens, Elæagnus macrophyllus, Eugenia ugni and var. variegata, Eurya latifolia variegata, Fabiana imbricata, Grevillea rosmarinifolia, G. sulphurea, Laurus nobilis (Sweet Bay), Ligustrum sinense floribundum, Olea fragrans, Photinia ovata, Veronica Andersoni and var. variegata, Yucca filamentosa, and Y. recurva. Those are all evergreens, and would form a good setting for any hardy flowering plants that might be introduced in pots, such as bulbs in spring, Pelargoniums, Fuchsias, Begonias and others in summer, and Chrysanthemums in autumn. The Chusan Palm, Chamærops excelsa, and Fortune's Palm, C. Fortunei, are suitable for a cold house. The great difficulty is the freezing of the soil in the pots during winter, and then thawing rapidly. This may be to a great extent overcome by keeping the soil rather dry and protecting the pots in severe weather with dry material.

Blood Manure (*Leumas*).—The blood manure recipe, to which you allude, was given to Dr. Hogg by Sir Daniel Cooper, Bart., and first inserted in the "Horticultural Directory." The failure to produce the manure may have arisen from the weakness of the acid. The muriatic acid (solution of hydrochloric acid gas in water) of commerce usually contains 32·6 per cent. of real hydrochloric acid, and has a specific gravity of 1·16, while the saturated solution (and no doubt intended by Sir D. Cooper) of the gas has a specific gravity of 1·21, and contains about 42·4 per cent. of hydrochloric acid. In addition to the probable weakness of your muriatic acid, blood four days old is not sufficiently rancid; it requires to be kept until it "begins to smell," then the protosulphate and muriatic acid being mixed and poured on it the result will be an inodorous powder. The powder may be used at the rate of 2 ozs. per square yard as a top-dressing to all kinds of plants in pots or borders, or crops either indoors or outdoors. Perhaps the formula was not given in proper form before, and hence it may be repeated, as you say the blood still remains in clots and the remainder still liquid. "Muriatic acid, 4 ozs.; protosulphate of iron, 4 ozs.; blood, 16 lbs. As soon as the blood begins to smell strongly pour upon it the muriatic acid and protosulphate of iron previously mixed, and it will be reduced to an inodorous powder, which will keep any time, and is of a fertilising strength equal to guano."

Growing Ismenes (*Amateur*).—These plants will do very well in a mixture of good turfy loam, a fifth of decayed manure or leaf mould, and a tenth of sand. The plants require abundance of water, with all the sun possible while growing in spring and summer; less water, and to be stood in the full sun in order to ripen them in autumn, and little water while at rest in winter. Your plants are probably going to rest now. Water sparingly until the end of January, then keep the soil moist until the plants start growing, when they should have copious supplies of water. They can be stood out of doors in the summer months if desired, housing them in October.

Vines for a Greenhouse (*L., Reading*)—The greenhouse with a due west aspect would answer for Vines in an inside border. We should plant them about 3 feet from the front wall, and take the rods up so as to reach the trellis, fixed about 15 inches from the glass and that distance from the front. This would keep the stems from the hot-water pipes. The Vines would be best trained with two rods each, the canes having all the buds rubbed off or shoots pinched, but the two uppermost, and these taken right and left to form the rods. Plant the end Vines 3 feet 4 inches therefrom, and the other Vine midway of the distance; thus you would have three Vines, and with Black Hamburgh, Foster's Seedling, and Gros Maroc a good succession of fruit. You could only grow Tomatoes whilst the Vines were young, for when the rods are formed there would not be sufficient light for them to do well. You might grow the plants in pots for a short time, say one or two years, so disposed as to get as much light as possible. Better not plant them in the Vine border, but they may be grown against the back wall either in pots or planted out.

Names of Fruits.—*Notice.*—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. *In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing.* The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. *They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state.* (*C. F. C.*).—1, Golden Reinette; 2, Lord Suffield; 3, New Hawthornden; 4, Catillac; 5, Uvedale's St. Germain. (*B. J.*).—1, Winter Nelis; 2, Bergamotte Esperen; 3, Souvenir du Congrès. (*S. T. G.*).—1, Bedfordshire Foundling; 2, Hormead Pearmain; 3, Winter Greening; 4, Braddick's Nonpareil; 5, Calville Rouge d'Hiver; 6, Scarlet Nonpareil. (*L. B. K.*).—1, Beurré Superfin; 2, Thompson's; 3, Cellini; 4, Newton Wonder.

Names of Plants.—We only undertake to name *species* of plants, not varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*G. N. S.*).—Æchmea fulgens. (*A. F. D.*).—1, Probably a Tricopilia, but so crushed as to render positive identification impossible; 2, Pilea muscosa; 3, possibly Fuchsia gracilis variegata, send when in flower; 4, Panicum variegatum. (*C. A.*).—1, Davallia canariensis; 2, Nephrolepis tuberosa; 3, Selaginella Martensi; 4, Adiantum pubescens. (*E. R. S.*).—1, Lælia anceps; 2, Pleione lagenaria. (*P. J.*).—1, Pernettya mucronata; 2, Pyrus torminalis; 3, Melilotus officinalis; 4, Agapanthus umbellatus variegatus.

EDITORIAL NOTICE.—**It is particularly desired that all communications, parcels, catalogues, and newspapers intended for the** EDITOR, **be sent direct to 8,** ROSE HILL ROAD, WANDSWORTH, **S.W.**

TRADE CATALOGUES RECEIVED.

Dammann & Co., Naples.—*Orchid-flowered Cannas.*
A. Findlay, Markinch, N.B.—*Potatoes.*
P. J. Looymans & Zonen, Oudenbosch, Holland.—*Trees and Shrubs.*
W. Sydenham, Tamworth.—*Violas and Pansies.*

WE are informed that the business carried on by W. H. Willcox & Co., engineers stores, oil refiners, &c., has been converted into a private limited liability company. The management will be as formerly. In consequence of the increase of business, the firm has been compelled to take additional offices, and while retaining the warehouse, 34 and 36, Southwark Street, the offices are now situated at 23, Southwark Street, to which all communications should be sent. No shares are being offered outside, only among the employés, who have an opportunity of subscribing for any shares they may wish.

COVENT GARDEN MARKET.—DEC. 1ST.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	1 0	to 3 0	Grapes, lb.	0 8	to 2 0
Cobs	22 6	24 0	Lemons, case	11 0	14 0
Filberts, 100 lbs.	0 0	0 0	St. Michael's Pines, each	3 0	8 0

VEGETABLES.

	s. d	s. d.		s. d.	s. d.
Asparagus, per 100	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, ½ sieve	0 0	0 0	Onions, bushel	3 6	4 0
Beet, Red, doz.	1 0	0 0	Parsley, doz. bnchs.	2 0	3 0
Carrots, bunch	0 3	0 4	Parsnips, doz.	1 0	0 0
Cauliflowers, doz.	2 0	3 0	Potatoes, cwt.	2 0	4 0
Celery, bundle	1 0	0 0	Salsafy, bundle	1 0	0 0
Coleworts, doz. bnchs.	2 0	4 0	Seakale, basket	1 6	1 9
Cucumbers	0 4	0 8	Scorzonera, bundle	1 6	0 0
Endive, doz.	1 3	1 6	Shallots, lb.	0 3	0 4
Herbs, bunch	0 3	0 0	Spinach, pad	0 0	0 0
Leeks, bunch	0 2	0 0	Sprouts, ½ sieve	1 6	1 9
Lettuce, doz.	1 3	0 0	Tomatoes, lb.	0 4	0 0
Mushrooms, lb.	0 6	0 8	Turnips, bunch	0 3	0 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz.	6 0	to 36 0	Ferns, var., doz.	4 0	to 18 0
Aspidistra, doz.	18 0	36 0	Ferns, small, 100	4 0	6 0
Aspidistra, specimen	5 0	10 6	Ficus elastica, each	1 0	7 0
Chrysanthemums, doz.	4 0	9 0	Foliage plants, var., each	1 0	5 0
,, ,, single plants	1 6	2 0	Lilium Harrisi, doz.	12 0	18 0
Dracæna, var., doz.	12 0	30 0	Lycopodiums, doz.	3 0	4 0
Dracæna viridis, doz.	9 0	18 0	Marguerite Daisy, doz.	4 0	9 0
Euonymus, var., doz.	6 0	18 0	Mignonette, doz.	4 0	6 0
Evergreens, var., doz.	4 0	18 0	Myrtles, doz.	6 0	9 0
Erica hymalis, per doz.	9 0	15 0	Palms, in var., each	1 0	15 0
,, gracilis, per doz.	6 0	9 0	,, specimens	21 0	63 0
,, various, per doz.	8 0	12 0	Pelargoniums, scarlet, doz.	2 0	4 0

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms	4 0	to 6 0	Mignonette, doz. bnchs.	2 0	to 4 0
Asparagus Fern, bunch	1 0	2 6	Mimosa or Acacia, bunch (French)	0 9	1 0
Bouvardias, bunch	0 6	0 8	Narciss, white (French) dozen bunches	1 0	2 6
Carnations, 12 blooms	1 0	3 0	Orchids, var., doz. blooms	1 6	12 0
Chrysanthemums, 12 bnchs.	2 0	6 0	Pelargoniums, doz. bnchs.	4 0	6 0
,, ,, 12 blooms	0 6	2 6	Roses (indoor), doz.	0 6	1 0
Eucharis, doz.	4 0	6 0	,, Tea, white, doz.	1 0	2 0
Gardenias, doz.	2 0	4 0	,, Yellow, doz. (Perles)	1 6	4 0
Geranium, scarlet, doz. bnchs.	4 0	6 0	,, Red, doz. blooms	1 0	1 6
Hyacinths (Roman) dozen bunches	6 0	9 0	,, Safrano (English) doz.	1 0	2 0
Lilac (French), bunch	3 0	5 0	,, ,, (French) per doz.	0 9	1 6
Lilium longiflorum, 12 blooms	4 0	6 0	,, ,, ,, per 100	5 0	7 0
Lily of the Valley, 12 sprays	1 0	2 0	,, Pink, doz.	1 0	2 6
Marguerites, doz. bnchs.	2 0	3 0	Smilax, bunch	1 6	2 6
Maidenhair Fern, doz. bnchs.	4 0	8 0	Tuberoses, 12 blooms	0 3	0 4
			Violets, doz. bnchs.	1 6	2 0
			,, Parme (French), bunch	2 6	3 6

ABORTION IN COWS.

A STRAW will show the way of the wind, and it is curious how easily a subject or topic for an article may be suggested.

We are anxious at all times to interest and instruct our large circle of readers, but as we can never know them all personally we often wonder if we succeed in our efforts. People have such diversities of views, such wide interests, and most of us must confess to some or other hobby. We sometimes wish our friends were not so diffident in making suggestions. If in our power we would gladly, by means of a short article, clear up any doubtful points, giving all the information we could; we should feel then that we were of real service to our readers.

A remark in a letter lately received from a friend caused us to think that the subject of "abortion in cows" might be treated profitably; at any rate we hope to show that, dreadful as this disease is, it is possible to keep it in check.

The remark above referred to read as follows: "Another cow aborted, this makes twenty-two this season." This occurred on a dairy farm in the Midlands, a farm celebrated for Stilton cheeses, where the cows are the leading feature and the rent-payers. It is

capital grass land, and the tenant is a man always out and about. He thoroughly believes in a master's eye, and is a clever practical man. He is ably seconded by his active wife, who may, in the summer months, be found in her dairy much earlier than we should like to see ourselves out of bed. We mention these facts because we think they have a certain bearing on the case, and we feel we must look for a "first cause" that appears to be totally out of this gentleman's control.

All scientists agree that abortion is the outcome of over-civilisation. We do not want to be misunderstood. We mean this: It was for many years the object of breeders to produce the very best animals of the kind—best in quality and shape; best as meat producers at an early age, and the best mothers—*i.e.*, milk producers. This applies equally to sheep as well as horned cattle. We have arrived at something very near perfection; but we have made the life and the surroundings too artificial, and we have to pay the price.

Perhaps some of our readers think the subject is not so serious as to merit consideration. We will only mention the result of the inquiry of one gentleman living in a small town in North Yorks, on this question. We think facts speak for themselves. He took his own house as the centre, and considered the cases occurring within a four-mile radius. He does not consider he had knowledge of all the cases, as he found the owners of cows for some time very reticent in supplying information; but when we state that he had nearly 400 cases—authenticated cases—200 of which occurred within two miles of his house, we may fairly consider the subject needed investigation.

The investigations were spread over seven or eight years. None of the herds appear to have been very large ones, twenty-five cows forming the largest. Now the gentleman interested in this set of investigation was of opinion that the majority of cases arose from the consumption of hay or grass infected with "ergot," which is a fungoid growth infesting our grasses and food cereals.

In several cases where abortion occurred in a herd, upon change of hay the plague ceased. This might be only accidental, but it is a curious fact. To set against this, we have experiments tried by Professor Brown, where he fed in-calf heifers with ergot-infested hay, and when the supply of hay was exhausted, ergot, in a pure form, was administered without any evil effect.

In reading an article by Mr. C. Stephenson, of Newcastle, we are struck with some very lucid remarks he makes, and we think he hits the right nail on the head. There are, he says, two distinct kinds of abortion —one the result of accident, and spoken of as "Sporadic," the other, which assumes an epidemic form, or, more properly speaking, enzootic. He first considers the condition of life. High feeding and no exercise; bad, insufficient food, and exposure to the elements. Bad water, too, is an active agent in producing this disease, and close, ill-ventilated, dirty sheds. After attacks of foot-and-mouth complaint or other diseases, a cow will often readily abort, and the taint, "so often unsuspected," of tuberculosis, is often at the root of the evil.

When cows are out at grass, abortion in its early stages may not be easily detected; when up in sheds, the first symptoms ought to be noted, and the cow instantly isolated, and her standing disinfected with quicklime. All substances should be carefully destroyed, burned if possible, and the cow must regain her normal health before being allowed to breed again. This in a first case; after a second, fatten and kill. We give a cow the benefit of the doubt the first time; the second marks her as an inveterate sinner, and she must be cut off in her prime. This not only for her own sake, but for fear of causing the disease to spread, as it is quite possible for infection to be communicated to other cows. Cases have been often known where an unsuspected unhealthy animal may do endless mischief.

One thing is certain, cows are among the most excitable of animals, and in the case of a cow aborting when in company of other in-calvers, the excitement is abnormal, and the owner may consider himself fortunate if he gets off without further loss. Cows, too, are most inquisitive, and will investigate carefully any nasty matter they may find lying about.

Whether from it they become infected with some germ, or whether the smell alone may do the mischief, we cannot say, hence the necessity of close attention to in-calvers, and the careful removal of obnoxious matter. If possible (and this is really an important matter) split up the breeding herd into small bodies, and thus should abortion take place in one herd the area of infection is circumscribed, and further danger arrested. Plenty of disinfectants in the sheds is most desirable. Above all things, if the cow is designed to breed again give her ample time to recover her normal state of health. Cases of abortion have arisen on farms where for years they have had a clean bill of health, and these cases arise where a new cow has been imported, whose earlier career is wrapped in mystery.

No one sells a really good honest cow if possible unless there is some just cause, and people never like to "crab" their own goods There has been a proposition that all cows which have aborted should be marked in some permanent way; and the buyer then buys at his own risk. The losses incurred are too serious to be lightly considered—loss to the individual, and loss to the consuming public.

All men are to be treated as innocent till proved guilty is our admirable English law, and it is well to treat all diseases as infectious till they are proved to be otherwise.

WORK ON THE HOME FARM.

Autumn work is almost completed—at any rate, it ought to be, for the winter quarter is just at hand. Farm operations, however, cannot be ruled by time in a hard-and-fast way, and we have to make the best of the seasons as they are presented to us. One thing only is certain—the farmer's tasks, like the brook, go on for ever.

The same may be said as to the work of farm horses; still, on many farms the horses have more rest days in winter than in summer, and it is often the case that the farmer applies the axiom of "No work, no pay" to his horses as much as to his men. But is this fair? If the farmer takes a holiday, does he, for the day, confine himself to a diet of dry bread? Hardly so; therefore it is hardly fair if he, when he leaves home, takes the granary key away in his pocket, and leaves the waggoner with an empty bin and nothing but the straw or chaff (dry bread) for the horses until his return.

When horses are working hard they require well keeping, and there is nothing to be said against reducing the large ration when the need for it no longer exists; but sudden violent changes of diet are good for neither man nor beast, and should be avoided. This particularly applies to winter feeding, for a change to the animal's natural food (grass) during the warmth of summer must be beneficial, or Nature be at fault.

The natural foods available for summer or winter are good to follow and use; grass and Clover, straw or hay in their seasons; but horse-keepers in their choice of the adjuncts to these are most likely to err. For instance, Oats are a perfect food, but often indigestible as well as dear. The idea of many farmers is to give the strongest, as they think—*i.e.*, the hottest, food—viz., Maize and Barley—during the hard work of Turnip time; but during hot weather starchy foods should not be used, a mixture of Oats, bran, and beanmeal being an excellent working food for summer weather.

When we are approaching winter, however, things are different, and we think that for a winter horse diet there is nothing better than 56 lbs. of maizemeal and 28 lbs. of bran per horse per week. If 10 lbs. of linseed cake or 4 lbs. of linseed meal be allowed per horse, to be put in the water-tub (kept in the stable under lock and key), the horse being watered from that tub (after a good stirring) and from nowhere else, there should be little need for the services of the veterinary surgeon.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ .0″ W.; Altitude 111 feet.

DATE. 1897. November.	9 A.M. Barometer at 32°, and Sea Level.	9 A.M. Hygrometer. Dry.	9 A.M. Hygrometer. Wet.	9 A.M. Direction of Wind.	9 A.M. Temp of soil at 1 foot.	IN THE DAY. Shade Temperature. Max.	IN THE DAY. Shade Temperature. Min.	IN THE DAY. Radiation Temperature. In Sun.	IN THE DAY. Radiation Temperature. On Grass.	Rain.
	Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Inchs.
Sunday 21	30·741	46·0	45·8	calm,fog	45·4	50·1	40·3	52·1	35·8	—
Monday 22	30·691	42·4	42·4	S.	45·2	49·1	38·8	57·9	33·1	—
Tuesday 23	30·513	41·4	41·2	N.E.	45·1	41·9	4 [illegible]	46·1	36·2	—
Wednesday.. 24	30·423	39·4	39·4	N.	44·8	45·0	36·0	45·9	37·9	0·010
Thursday.... 25	30·248	44·1	43·4	N.E.	44·7	49·9	39·4	67·9	40·1	—
Friday 26	30·531	33·3	30·7	S.W.	43·2	50·3	28·0	56·7	23·9	0·034
Saturday ... 27	30·080	50·3	48·6	W.	43·1	52·9	33·5	54·9	28·7	0·311
	30·462	42·4	41·6		44·5	48·5	36·7	54·5	33·7	0·355

21st.—Fog all day, very dense and dark about 11 a.m.
22nd.—Slight fog early; bright sun at 9.45 and fine day; fog again in evening.
23rd.—Slight fog all day, extending to great height in afternoon and causing darkness.
24th.—Fog all day, and very dark from 11 to noon.
25th.—Milder, with frequent sunshine in morning; overcast afternoon.
26th.—Slight fog early, but bright sun all morning; overcast from 2 p.m.; rain in evening.
27th—Mild and overcast, with rain from 4.30 p.m. to 11 p.m.

Temperature just the average, rainfall again below it.—G. J. SYMONS.

Journal of Horticulture.
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OUR FRUIT SUPPLY.

FOREIGNERS' PROFITS THAT SHOULD BE OURS.

UNDER the above heading, we find an article in the "Daily Mail" which, whether exact or not in respect to the whole of the figures presented, and granting that the great bulk and value of imported fruit is such that could not possibly be grown in this country, the article is not the less interesting and significant. It tells us clearly, to put the matter in a nutshell, that if we will not grow what the nation needs, in the supply of our national fruit, other countries will make good our deficiencies; or, in other words, they will do as the Danes have done in the supply of butter—get the upper hand in our markets.

"But," it may be asked, "can we help ourselves in the matter?" The answer is that not a few British cultivators of fruit are helping *themselves* to more profit than could be possibly obtained under the orthodox system of agricultural tillage and pasturage—a profit, it may be reasonably suspected, at least equal to that obtained by cultivators in other lands, who have to send their goods thousands of miles to our markets.

How do they manage it? The answer is simple. It is because, as a rule, fruit is *cultivated* in a systematic and intelligent manner by our rivals in production over the sea, also placed on our markets in the most tempting condition; while at home, as a rule, similar methods are not adopted. It is true there are exceptions, and these prove in a small way, and to a limited extent, what might be more general if the same methods were pursued by the many, who have opportunities, that are practised by the few.

It is not suggested that our hardy fruits can be grown profitably all over the United Kingdom. There is an enormous area of sites and a great variety of soils in which this cannot be done; and it is certain that many an attempt has been made to "make money" out of growing fruit where the essential concrete conditions were lacking, and the attempts of necessity ending in failure. On the other hand, in instances innumerable, where soils and situations were not unfavourable, the rough slipshod methods and haphazard routine, which are apparent almost everywhere, have nullified the effects of the natural advantages that existed, and

which might have been turned to good account if thorough cultural work, founded on knowledge and the requisite commercial rules of procedure, had predominated.

It is well to know what other nations are doing at present, and the preparations they are making for the future. The enterprise of peoples in other lands has been too long unknown, or if known ignored. We cannot in this island home of ours, which does not grow half enough food for the sustenance of its inhabitants, afford to remain in ignorance of what is being done elsewhere, nor rest apathetically in reliance on the old easy ways of the past, as if these were adequate to the requirements of these modern days, and those which must inevitably follow.

What may be regarded as new lands—in comparison with the long and densely populated patch of the globe on which so many are struggling in crude and rude ways to live—have an advantage over us in one important respect. They have no patriarchal orchards of rubbishy varieties of fruits, especially Apples, to rely on. They have had to begin with young trees, and in beginning they have begun with the best varieties for attaining the object in view. There, *plus* intelligent methods in management, rests the secret of the success that has been attained at our expense.

Much has been published from time to time on our old orchards and their restoration that it is feared has done as much harm as good, and, perhaps, in some instances, more. It is well to make the best of old trees to enable them, where possible, to be more useful than before; but if with this endeavour the action of their owners ends, as it has in many instances ended, we are bound to lag behind in the character of the national fruit supply as compared with that from newer fields of production placed in competition with it.

A great deal of the so-called renovation of ancient fruit trees amounts to mere patching and pottering, and can be of no permanent value unless done under the supervision of really competent men, and of no great service then in the absence of their seeing that necessary attention is given to the trees the following year. If the supply of fruit is desired to be increased and improved fresh sites should be chosen, the soil thoroughly prepared and planted with young trees in wisely chosen varieties, at the time that endeavours are being made to invigorate the old and enfeebled which are not too far gone to respond to sound treatment. In no other way can so much benefit be derived in localities which are favourable to fruit production; but unfortunately in too many instances attempts to mend ancient orchards, by certain and sometimes peculiar methods of doctoring, are regarded as equivalent to the planting of young trees, and this most important work is consequently not done. It is unfortunate that it should be so, but it is a fact—a fact founded on a fallacy.

Under those circumstances it must be apparent that home and foreign growers of fruit do not work under equal conditions, and we are unquestionably handicapped by our thousands of starveling trees and mixed medley of varieties, against their still more thousands of the youthful and vigorous bearers of superior fruit. It is only the well grown produce of young trees that can compete with any chance of success with the fruit that comes from such trees, wherever or how far distant they may be growing. It is only by choosing varieties wisely, and sites and soils prudently for growing them, planting the best, and the best only, and tending the trees properly that we can hope to maintain even our present unenviable position. Rely on the old and neglect planting the young, and there can only be one result—certain and sure retrogression. It is time, however, to come to the digest above referred to, and which has called forth these observations. Here it is, and let all who are interested make the best or the worst of it, as they may feel disposed.

Curious facts are revealed when we investigate the condition of our supplies of raw fruit. We have to depend mainly for cheap fruit upon Continental countries. This applies as well to the hardier fruits of the northern latitudes as to the produce of the southern lands of Europe. In the temperate climate of the British Isles the culture of Apples, Pears, and Plums could not be difficult and should not be unprofitable. But the taste for fruit as a wholesome and delicious diet has far outgrown the extent and yield of British orchards, which now supply but an insignificant portion of the fruit we see on sale. Stand before any of the cheaper fruit stalls of London and note how little of all these varieties have been home grown—the Apples are principally from the west of Europe or Australasia, or the northern hemisphere of America.

Great Britain, out of its 32,000,000 acres of pasture and arable land, uses not quite 225,000 acres for fruit trees; those are the outside limits of the British orchards. Through the south-western shires of Devon and Somerset, Hereford and Worcester, are spread, like a rich scroll, the chief orchards of England, with Kent on the other side; and so insignificant are the fruit tree areas of Scotland and Wales that even Cornwall equals, if it does not surpass, the combined totals of both Wales and Scotland. We do somewhat better in small fruit—there has been steady increase; we have more than doubled the acreage devoted to Strawberries, Gooseberries, Currants, and other small fruits, in seven years, from 32,776 acres in 1888 to 68,000 acres now. It is not a prodigious effort for all England; but the growth of small fruit in the remainder of the United Kingdom is trifling.

The inattention given to fruit culture in many parts of the British Isles is surprising. The south-west of Ireland, for instance, has a climate corresponding with that of Devonshire; and these counties are well adapted for growing the same productions as Galicia and the Asturias, in Spain.

Perhaps the occupiers of British land have a very inadequate knowledge of the enormous quantity and value of the fruits we take into the United Kingdom from abroad. The increase, too, is by leaps and bounds. Twenty years ago the average sum spent by each head of the population in the twelve months on imported fruit was calculated at 1s. 10d. Now, each member of a much-enlarged population spends 3s. 4d.; that is on foreign fruit only. In 1880 the import did not exceed 7,000,000 bushels; but within ten years (in 1890) it had risen to 10,000,000 bushels, and more recently it has increased to 14,000,000 bushels. The money value of this enormous supply of foreign fruit is £4,779,000.

For Apples and Pears alone we pay to foreign countries now £1,500,000 sterling. Is it not astonishing that, for fruits so hardy and thriving, and requiring less care than most agricultural produce, so large a sum as £1,500,000 leaves this country in a year. Between 4,000,000 and 5,000,000 bushels of foreign Apples come into the British Isles in twelve months, to supplement our own orchards; to this fact Londoners may attribute the cheapness of the Apples, which sell from 2d. to 4d. per pound.

We have, fortunately, the greatest Apple orchard of Europe almost at our doors. Belgium is not quite one-third the size of Ireland, and, after England, it is the most densely populated country in Europe, and it is, moreover, a country of small holdings; but its arable land is in many parts cultivated like a garden, and it exports to us now, in a year, more than 1,000,000 bushels of Apples. And not Apples merely. Belgium has taken to the cultivation of various fruits for export—Pears, Plums, and Cherries, in addition to Apples—on the same thorough and extensive scale that Denmark has followed in dairying.

The vast territories of the United States send us only a little more Apples (1,400,000 bushels), and Canada sends us a little less, about 1,080,000 bushels.

Belgium gives us everything—Grapes, Cherries, Plums, Pears, Apples, even Oranges and Lemons. Here is a lesson and a model in agriculture.

Spain, however, outstrips Belgium, not in variety, but on the grand total; it sends us over 6,000,000 bushels of fruit, mostly Oranges and Grapes; and Spain's contribution almost equals what we receive from the rest of Europe. This she owes to the popularity of the Orange. The consumption of this delicious fruit has been increasing among us at a furious rate. Four years ago we had only 4,500,000 bushels of Oranges for our year's supply; now we receive 7,500,000 bushels, for which we pay over £2,000,000, and 5,500,000 bushels of the total come from the sunny lands of Spain, where the commonest of all the sweet Oranges, round in shape and thick of rind, is cultivated in immense profusion.

The Oranges now on sale are the splendid variety which is grown at St. Michaels, and the Azores send us in the year about 50,000 bushels. The luscious Navel Orange of South America comes here through Brazil, but from that source we only receive from 10,000 to 13,000 bushels. Indeed, seventeen foreign countries give Oranges to the British Isles; no other fruit is so extensively supplied, or comes from so many different lands. Switzerland gives us no fruit whatever, and the imports from Greece and Russia are almost nil.

The quantities of fruit sent in the course of a year to the mother country by the colonies are surprisingly small. Apples, which deteriorate very little during long ocean voyages, make the bulk of the supply. Canada alone sends more than 1,000,000 bushels of Apples; and Tasmania and the Channel Islands also contribute, though not to a large extent. Outside Apples, the fruit from the British possessions

is trifling—no Cherries whatever, very few Lemons, less Plums; and hardly any Grapes and Pears, except from the Channel Islands and the Cape of Good Hope.

From the Cape we receive about 1500 bushels of Grapes, and 40,000 bushels from the Channel Islands; these exhaust the trade in Grapes. Between 18,000 and 19,000 bushels of Pears are sent by the Channel Islands. Malta gives about 6000 bushels of Oranges. But all the fruit from all the British possessions does not exceed 1,300,000 bushels, which is about one-thirteenth of the total supply. One small Continental country, Belgium, far exceeds the quantity which the British possessions contribute.

But the colonies are now learning the art of safely transporting tender raw fruits across the ocean. Their few experiments hitherto have been failures; for instance, South Australian Oranges last autumn, and Canadian Pears two years ago; but they were not hopeless failures—they pointed out the way, and the possibilities of the colonial fruit trade with the British Isles are immense. The trial shipment of Canadian Pears decomposed from the heat engendered in the railway cars on the journey to Montreal. Since that experience the fruit-growers of Ontario, and the Government of the province, have consulted, and used their fresh knowledge in the organising of a system of cooling stores and refrigerating railway cars and cold steamship chambers, in which to preserve delicate fruits from self-destruction due to ripening *en route*. These measures, it is hoped, will allow Grapes to be transported without losing their bloom, and preserve the delicate skins of Peaches, and the firmness of Pears.

The Government of Ontario has undertaken to pay the entire cost of the new experiment, and has guaranteed against the loss the fruit growers who have promised to contribute supplies to the first shipments. If the trial succeeds, next season the fruit-growers of the Niagara district will, according to the agreement, take over from the Government all the buildings and responsibility.

This interesting experiment will deal with Pears, and Grapes, and Peaches, in the first place—of which we do not now receive any from Canada It is regarded with much hopefulness, and will be extended, if successful, to Strawberries, and other fruits and vegetables. We need, therefore, have no fear of the decline in quantity or increase in price of so wholesome and agreeable a diet as raw fruit.—T. O. Moore.

DECEPTIVE APPEARANCES.

Readers of horticultural papers are indebted to scribes of the perambulating order for numerous valuable hints. But for them many successful practices would never come to light, and, all things considered, note-taking "chiels" are indispensable adjuncts to the horticultural world. If, however, we concede this point, it does not follow that these critical observers of our failures and successes should be regarded as altogether infallible. In reality, they in their turn must submit to the chastening influences of criticism, more or less friendly in character, according to circumstances. A casual visitor to a garden is not always admitted behind the scenes. He may be able to glean much useful information from those who accompany him in his rounds, and it is just possible that he may be hoaxed. He may be able to form his own opinion upon certain factors in the success or failure attending the cultivation of different fruits or flowers, and there is also the possibility of his being deceived by appearances.

Let me give a few instances of what might have proved misleading information and deceptive appearances. On inspecting a comparatively young orchard in Essex I found Apple, Pear, Plum, and Filbert trees, Gooseberry and Currant bushes, Strawberries, Asparagus, and other vegetables thriving grandly in what at first sight appears to be a large bed of gravel. Nowhere else have I seen better crops or finer fruit of some varieties of Apples on comparatively young yet very vigorous trees. Each variety was represented in long rows of a hundred or more, with scarcely a failure anywhere. Had I not been in the secret the chances are that a paragraph would have conveyed the astonishing assertion that fruit trees thrive better in smooth gravel, or the contents pure and simple of a gravel pit, than in a good loamy ground. As a matter of fact, about one-half of the soil in that large orchard is composed of smooth pebbles, one-quarter of sandy or gritty soil previously mixed with it, and the rest added loamy soil and manure. Only the stones are in evidence, but beneficial as may be the effect of these it would not be correct to give them all the credit. This instance also affords a good object lesson in what may be done by perseverance and the exercise of common sense. It was the added soil and liberal dressings of manure that were needed to make this stony ground fertile, and unless these had been given the fruit trees would have failed to become profitable.

A few years ago it fell to my lot to assist a well known expert in determining what might be advantageously done in the direction of converting a derelict farm at Bromham in Wiltshire into a profitable fruit-growing establishment. The soil generally was found to be very light and sandy, and apparently better adapted to the growth of Carrots than anything else. After closely observing the vegetation, including tree and hedgerow growth, of the farm, my colleague confidently asserted that the ground was not only more fertile than it might appear to a superficial observer, but that it was also capable of great things in fruit production if properly treated. Annual visits to this farm have amply satisfied me that the deductions were perfectly sound. The soil only requires plenty of manure, that of a nitrogenous character more especially to make it remarkably fertile. The fruit trees all grow strongly, but are yet most productive; Strawberries succeed remarkably well, many acres of them being grown, while the vegetables are equally satisfactory.

What is even more surprising to the uninitiated is the fact that Cucumbers under glass succeed admirably in this loose sandy soil, as also do Tomatoes, to the growth of which several long houses are mostly devoted. One span-roofed house, about 150 feet long and 30 feet wide, is wholly devoted to Grape-growing, and the Vines are planted in the ordinary sandy soil of the farm. The growth of these Vines and the crops of Gros Colman produced have been the talk and admiration of the district. What surprises gardeners most is the nature of the soil in which they are rooting. When I recently went through this vinery the dry, loose, much-trampled surface presented the appearance of a sand-bed, but appearances were misleading in this case. Mr. Vallis is satisfied with his sandy soil, but he does not forget to apply blood manure of his own preparation freely to supply the elements needed to meet the requirements of his heavily cropping Vines. The men who form Vine borders, and not those who take charge of them a few years after, best know what ingredients were employed, and casual observers are not competent to form very decided or reliable opinions upon what has been done in the way of ameliorating conditions.

Wishing to cover the whole of the border inside of a large vinery I own with a mulch of some kind to prevent the too rapid loss of moisture and to keep down dust, we last summer used strawy manure as far as the heap would go, and covered the central pathway with 2 inches of spent tanners' bark. Heat, moisture, and trampling favoured the comparatively rapid decay of the bark, and before very long Vine roots found their way into it, these forming fibres freely. Tanners' bark was also used as a mulch among Tomatoes, and where kept sufficiently moist, was fully occupied by healthy roots. Fruit growers who paid us visits were not slow in perceiving and condemning the tanners' bark; but on one occasion I overheard my foreman coolly remark to one more than usually critical gentleman that it was the best form of mulch that could be employed, and seeing that the crops were good an erroneous impression was conveyed. I should not think of using tanners' bark as a mulch if anything better were available. I consider this another case that may be regarded as deceptive in appearance, and might have misled the shrewdest of critics. Instead of giving all the credit to the soil in which Grape Vines carrying superior crops are growing, let me urge that visitors who report on these successes the necessity for attaching more importance to the general all-round treatment accorded.

My list of deceptive appearances is by no means exhausted, but I will be content to refer to two more only. Last season I and a friend paid a visit to a well-known specialist in Chrysanthemums, Begonias, and Tomatoes. The latter under glass were then at their best, and we were most impressed with the crops produced by a large number of roof-trained plants. The plants were confined to single stems in the usual way, and from the lower part of the trellis to the ridge were grandly furnished with clusters of handsome fruit. Apparently they only had a ridge of soil about 1 foot wide, and not so much in depth to root in. The proprietor without so much as a ghost of a smile stated that such was really the case, and also that he did not manure very freely. Having had an all-round experience both with Tomatoes and those who grow them we were not "had" in that way. The slate staging supporting the soil had previously been heavily covered with ashes for pot plants to stand on, and we found this completely matted with roots. Tomatoes can be grown successfully wholly in ashes, and as a matter of fact they will form more feeding roots in a bed of ashes, similar to that just alluded to, than in the narrow ridge of soil.

One more instance of appearances deceiving, which tells rather against myself, and I have done. This time the one most responsible was misled by appearances, as well as numerous gardeners who "gave us a call." Two Cucumber plants were, early in the year, planted in small mounds of soil on slates covering a water tank, heated by hot-water pipes. Twice top-dressings were given, each plant eventually having about one and a half bushel of soil to root in. Throughout a long season those plants remained in a healthy, productive state, without apparently forming many roots. When they came to be cleared off the water in tank underneath was crowded with active root-fibres, and it was these that principally supported the extraordinary top growth.—W. Iggulden.

NUT GROWING AND PRUNING.

I HAVE often wondered why it is that Nuts are grown in so few counties as a cultivated crop. This cannot be because the soil and climate are not adapted for Nut culture, because in many—I might almost say in all—parts of England we find the common Hazel Nuts produced in great profusion during warm seasons. The true explanation of this state of affairs may perhaps be found in the fact that many years ago the culture of Nuts was begun on a small scale in a few places, and by degrees extended to the districts around. Such in time became noted for their Nuts, and an impression was created that they could not be so well grown in other parts.

The success of the Kentish men in regard to Nut growing is not, however, solely accounted for by their soil and climate, but because they have practised an intelligent method of culture. Around Maidstone—a town which has lately suffered so greatly from a terrible epidemic—Nuts are largely grown. The soil there is in many instances very stony, but it is generally of fair depth, and has beneath it a strata of rock known as Kentish rag. The surface of the county is also extremely hilly, and the long level expanses of fields, such as we meet with in many counties, are not often seen in this part of Kent. From the above description it is easy to note that such land must be perfectly drained, and from the fact that Hops and fruit of most kinds thrive on similar soils in the neighbourhood, we may calculate that those soils are by no means deficient in fertility, although the inorganic matter they contain is largely in excess of the amount to be found in low lying districts, where the alluvial deposits of ages have formed a deep rich soil in which quickly growing garden or farm crops delight.

Those readers of the *Journal of Horticulture* who scan this note will doubtles recall to mind many stony soils and sloping banks which have come under their notice during the course of their peregrinations, or they may perhaps have land of a similar description under their charge which they have hitherto been unable to turn to profitable account. Let me advise them to take a bold course at once, and plant such places with trees of the Kentish Cob Nut. Good nuts are always in demand in both large and small establishments, and there are few gardens in which a sufficient supply is grown.

In preparing the soil for planting the work should be done thoroughly, because Nut trees, when well managed, will last at least a hundred years; and although the subsoil may be poor, it is necessary to loosen it so that the roots work freely in all directions. Trenching or double digging must therefore be practised; burnt refuse or thoroughly decayed manure may with advantage be worked into the subsoil if it is very poor, but none will be needed for the surface soil. When this trenching is done large stones will often be encountered; in all instances they should be removed, so as to secure a uniform depth of at least 18 inches. Small stones and others of less size than half a brick may be left, as the roots of Nut trees seem to delight in working their way between them in search of the particles of soil around; and this without doubt favours the production of short-jointed twigs such as the female flowers are produced upon.

PLANTING.

Strong trees ready for planting in their permanent positions may be obtained from the leading nurserymen at from 6s. to 9s. per dozen. Such have a clear stem about 18 inches in length, and from five to seven strong shoots. Young trees of this description are far better than older ones which have been cut back several times, as they establish themselves quickly, and enable the cultivator to secure the following season the requisite number of branches to form a well-shaped tree. Nuts require abundance of sun and air; it is therefore necessary to plant them a good distance apart. Some set them about 12 feet from stem to stem, others allow them a distance of 15 feet. I prefer to plant at the latter distance, and I consider that in many of the Kentish plantations the trees have been planted too closely.

If the distance settled upon is 15 feet, Currants or Gooseberries can be planted between, these to be cut away as the Nut trees extend. Apples may then be grown as a top crop, if standards are planted 30 feet apart, and these will to some extent protect the Nuts from spring frosts when in flower. In the actual work of planting of course it is necessary to cut away the jagged ends of roots, spread them out evenly over the soil, and not bury them too deeply, advice which applies with equal force to all kinds of fruit trees, and which has been so freely dealt with in the pages of the Journal recently that it need not be enlarged upon now. There is, however, one matter which requires noting—viz., if the soil is very poor and stoney, the finer portions ought to be carefully selected to place over the young roots, then when they become thoroughly established they are well able to take care of themselves. After planting but little attention is needed during the first year, save that of keeping down weeds by a free use of the hoe during the summer months.

PRUNING.

In many gardens where only a few Nut trees are grown, no particular system of pruning is adopted, except that branches are cut out here and there to admit light. Good crops are sometimes obtained when only such limited attention is given, but the trees carry a good deal of useless wood, and under a good system of pruning the crops are more regular, and the Nuts larger. A well-pruned Nut tree was to me in my school days an object which commanded admiration, and I looked upon a Nut tree pruner as a wiseacre whose knowledge was so profound that ordinary mortals could never hope to grasp it. I have, however, learned since that the work is simple enough when we once learn to distinguish between fruit-bearing and barren shoots, provided we also start with a young tree, instead of having to take our initial lesson in pruning on an old and neglected one.

After planting, the young shoots are usually left unpruned for a year, and the only regulation needed during the summer is to stop any shoot that shows signs of becoming unduly strong. The following winter these shoots are shortened back to within 6 inches of their base, this will cause strong leaders to grow the following season to form the foundation of the tree. Throughout the summer the side growths must be pinched to five or six leaves to secure a strong leader; and in the following winter these leading shoots ought to be cut back to within 9 inches of their base, taking care to prune to an outer bud. When growth commences in spring two leaders may be allowed to grow from each of these shoots, and thus the requisite ten or twelve branches are obtained. In order to encourage the saucer-like shape required, these branches must be tied out to pegs driven into the ground, or be kept out by means of a wooden hoop placed in the centre of the tree.—KENTISH MAN.

(To be continued.)

CESTRUMS.

THOUGH several genera of Solanaceæ furnish species which are more or less useful during winter as greenhouse decorative plants, it is questionable whether any single genus is more useful than Cestrum—or, as it is known in some places, Habrothamnus—at that season. Two or three species can be grown in pots with fairly good results; most of them planted in beds and supported by stakes will make bush plants, but to be seen at their best they should be planted against a pillar or wall, and trained loosely, so that the ends of the branches will hang gracefully from their support. When grown in the latter way it is difficult to conceive a prettier sight than a well-grown and well-flowered specimen of either of the species mentioned below. The period of flowering is also a recommendation, for, with four species a supply of flowers can be had from July to April, and odd inflorescences are not uncommon during the other months of the year.

Those best for ordinary purposes are C. elegans, aurantiacum, fasciculatum, roseum, and Newelli. The one most generally cultivated is C. elegans. It is a Mexican plant, and does best when grown against a wall or pillar. The individual flowers are red in colour, 1 inch long, tubular, and produced in large clusters. As almost every branch is terminated with flowers its worth is apparent. It is at its best from December to March, though a large plant is rarely without flowers.

C. fasciculatum is very similar in appearance to C. elegans, but the blooms are looser and longer, while the individual flowers are shorter. It commences to flower about September and keeps on until February C. roseum, like the foregoing, is a Mexican plant. It differs from the other two mentioned by the leaves being a little smaller and more abruptly terminated at the apex, and the flowers rose-coloured instead of red.

C. Newelli is one of the gems of the genus. It is quite distinct in growth, foliage, and flowers. The shoots are stronger, the leaves quite as long, but wider, and thicker in texture than in C. elegans, and the inflorescences are larger and not quite so loose as in that species. The colour of the flowers is scarlet. The flowering period is from Christmas to the end of April. Anyone wishing for a good pillar plant should give this a trial.

C. aurantiacum is very different in general appearance, but quite as useful. It is a native of Guatemala. It can be grown in pots with fairly good results, but looks at its best when the main stems are tied to a pillar and the young flowering growths allowed their freedom. The flowers are orange yellow, about three-quarters of an inch long, and produced in large, loose, terminal inflorescences. It flowers twice during the year, the first time about July, after which the growths break back and another brilliant display is made from the end of October to the middle of December.

With regard to cultivation no special treatment is necessary. Given a winter temperature of from 40° to 45°, and fairly rich soil, they will grow and flower well. After flowering (when the plants have attained the required size) they should be spurred back to two eyes. It is better, where possible, to grow them cool, as they are then not troubled so much by insects. After trying a selection of the species mentioned, one and all cannot fail to admit their worth as showy, easily cultivated plants, for the pillars or walls of conservatory or greenhouse.—K. R.

ORCHIDS

Vanda Agnes Joachim.

It is not by any means every day that new Vandas find their way to the exhibitions of the Royal Horticultural Society at the Drill Hall, and when one is shown it is certain to attract attention. On June 15th of this year Mr. W. H. White, Orchid grower to Sir Trevor Lawrence, Bart., Burford Lodge, Dorking, sent a hybrid resulting from a cross between V. teres and V. Hookeriana named Agnes Joachim, and of which we now give an illustration (fig. 80). The flower was very lovely, and well worthy of the first-class certificate that the Orchid Committee bestowed upon it. The petals and upper sepals were delicate rose, while the lower sepals were pure white. The colour of the lip was purplish rose.

Pleiones.

These Orchids make a bright and pretty show during the dark, dull, wintry days, and their popularity seems to increase every season. Looking through a large trade collection recently, I remarked upon the small stock of these, and found that the demand for them had sensibly increased during the last few years, and this particular nurseryman had a difficulty in keeping up his stock of some of the more popular kinds. As a genus of garden plants they are perfectly distinct, but most botanists now refer them to Cœlogyne, a genus they very closely resemble in floral structure, but differ widely from in habit and general appearance. Their culture, too, is quite different, and as I do not remember noting them in the Journal, possibly a line on this may be interesting.

Few Orchids keep to such a regular routine, flower and grow so constantly and regularly, as Pleiones. Each season they need fresh compost; every spring they commence growing about the same time—though this time naturally varies with the different species—and they seldom refuse to flower if properly treated. Although they are probably strictly epiphytal in their native haunts, they need a good substantial compost to get the most out of them under cultivation, and the proper time to attend to this is just after the flowers are past.

Prepare a mixture of about equal parts of peat fibre, loam, and chopped sphagnum moss; add to this a good sprinkling of finely broken crocks and charcoal, and mix all thoroughly. The size and quality of the receptacle will vary according to circumstances and the fancy of the individual grower. Some prefer large broad pans, and excellent they are for the purpose, but personally I like small pots better. These are much more easily arranged in any class of group or other display of flowering plants, and as the plants at the time of flowering have no foliage on them, a large panful looks just a little garish.

But perhaps it is only a matter of fancy. At any rate, the compost is the same in all cases, and whatever is used the drainage is a very important point to consider. Fill the pans about two-thirds of their depth with crocks, and cover these with a layer of rough sphagnum. Pull the old plants to pieces, carefully separating every bulb, and as all the old roots will be dead, cut all these off excepting a small tuft to help to hold the bulb in position. Be very careful not to damage the new roots, if there should be any, but if taken directly they have finished flowering, not many of these will be present. Fix them so that the base of the bulb is barely buried, and dispose them equally over the surface at about 2 inches apart, giving them a slight rise to the centre in order to throw off superfluous moisture.

Dibble the compost firmly yet carefully about the roots, and place them at once in their growing quarters. The best position for them is one similar to that recommended for the warm section of Odontoglossums, but in the cool end of the Cattleya house they will also thrive. Hardly any water is needed after potting—in fact, it is harmful for a week or two; but when the young roots commence to push into the new compost the supply must gradually increase. When both root and top growth are active a very liberal supply is necessary, for they are thirsty plants when thoroughly healthy.

The moisture must be kept going until the growth has fully developed, when a short and sharp resting season is necessary. Red spider and scale are their worst insect enemies, the latter being especially fond of the foliage. These must be kept under if good results are looked for, frequent spongings being the best way to do this. There need be no fear as to leaving the flowers on the plants until they fade, as no harm is thereby done. To conserve them over as long a season as possible let them be arranged in quite a cool house, and be careful not to bruise them or to sprinkle them with water, as their texture is very delicate.

P. Hookeriana is one of the better known kinds and peculiar in retaining its foliage, or partially so, while the plants are in flower. It comes from the Himalayas, where it was discovered by Sir J. D. Hooker in 1849. It is rather variable, the typical form having rosy purple sepals and petals and a paler lip, the latter spotted with chocolate brown. The beautiful P. humilis is a dwarf grower with a very finely coloured lip. This is roundish with a fringe of long white hairs, the ground almost entirely covered with the brightest amethyst purple stripes and spots. The sepals and petals are pure white. It is one of the oldest known species, but was not introduced to this country until 1849, when it was sent to Messrs. Veitch by their energetic collector, Mr. Thomas Lobb.

P. lagenaria was sent by the same collector, and this has become perhaps the most popular of all the species. It has bright rosy lilac outer segments and remarkably fine highly coloured lip lined with purple, rose and golden yellow. P. maculata bears large flowers, which are pure white on the sepals and petals, the lip rather profusely spotted with purple and having a yellow centre. P. præcox and its variety Wallichianum are two fine kinds, the outer segments longer and

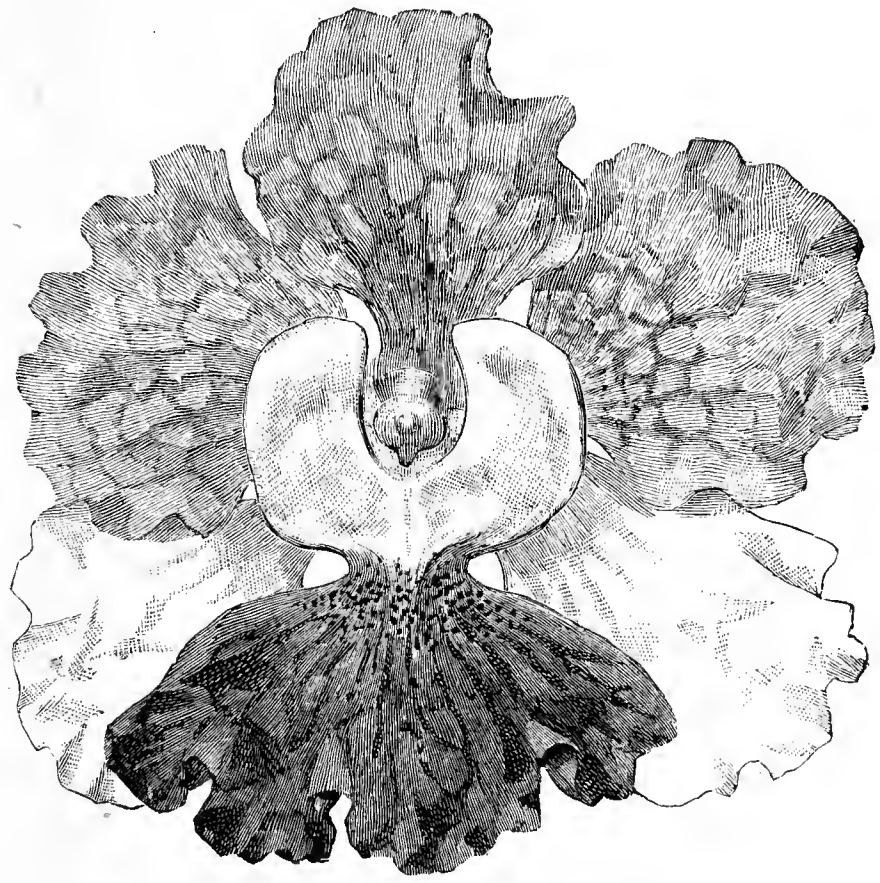

Fig. 80.—Vanda Agnes Joachim.

narrower than those of most other kinds. In the type these are pale rose, but the variety shows more colour. Both are natives of the Himalayan range, the type being introduced with P. Hookeriana, the variety many years later.—H. R. R.

ROOT EELWORMS IN TOMATOES AND CUCUMBERS.

Last year a great deal was written upon eelworms and their destruction. I promised Mr. G. Abbey that I would try some of the substances he recommended, and if I were successful in destroying the pest, I would give the honour to him to whom it was due.

Twelve months ago, when pulling up the old Tomato plants, I found at least 200 out of 4000 attacked by root eelworm. Strange to say, 95 per cent. of these were the plants next to the path. When visiting my friend's nursery, who had plenty of eelworm, did I carry some of them on my shoes? If so, it only shows how careful we ought to be; but to return again to our subject. I knew that to allow the pest to go on unchecked was not to be thought of, as that meant loss in future crops, and poor crops spell ruin nowadays.

After a great deal of consideration it was decided to use basic slag and kainit, for this, if it destroyed the eelworm, would also furnish food to the future crop. Having decided what to use, the next question was, How much of each to apply? I knew that to put on a few ounces per yard would be like throwing the substances away, so the hands went to work spreading what we thought to be a good dressing. The scales were next used to weigh out a similar lot, and the weighing proved that we were applying two pounds (2 lbs.) to the square yard. After the basic slag was spread we gave the soil a dressing of kainit. The same methods were used; but in this case only twelve ounces (12 ozs.) per square yard was applied, and this quantity made the soil look as if a snowstorm had fallen. The basic

slag and kainit were then forked into the soil, and left for the rest of the winter. In February the soil was again dug over with the fork, and the Tomatoes planted. They have now been again taken up, but not the slightest trace of eelworm is present on any of them.

A Soluble Phenyle Failure.

I should now like to pass a few remarks upon some trials with soluble phenyle that came under my notice this year. A batch of young Cucumber plants growing on a nursery where eelworm was known to exist were watered with soluble phenyle, not one part in ninety-six parts of water as advised, but one part of phenyle in 384 parts of water. When I saw the plants a week after the dose was given they looked as if they had received a severe check. In the same house I saw thirty empty pots, and on inquiry I learnt that Cucumber plants were growing in these similar in size to those to which I have just referred. Every one, however, was killed because they were watered with a solution of soluble phenyle—one part in ninety-six parts of water. One part of soluble phenyle in 384 parts of water was applied to Cucumber plants growing in borders, and to quote the words of the owners, "the plants hung their heads like wet clothes." Some plants growing in the borders were also killed when soluble phenyle was applied to them at the rate of one part in ninety-six parts of water. Perhaps some of your numerous readers have tried soluble phenyle; if so, will they kindly favour us with their experience? Mr. Iggulden and "By-the-Sea" might send a few lines of comment on the above case, re-stating the quantities of the "remedy" applied, with results.

I have yet to learn what soluble phenyle contains to make its application valuable to crops as food, as stated so many times in the *Journal of Horticulture*. Perhaps Mr. G. Abbey will kindly inform us.—W. Dyke.

[There has evidently been a mistake somewhere by someone, if not more than one. If in the experience of one person one part of soluble phenyle in ninety-six parts of water is safe, while another person finds a solution four times weaker dangerous, the subject obviously demands close investigation.]

THE GLOOMY TIME.

The sad days are upon us now, and the garden has little left to charm. Winter has as yet but breathed upon us with bated breath; he has not launched upon the flowers his fierce, cutting winds, which, like poisoned arrows, bring death in their train. Yet though he has come with almost invisible presence, we cannot but feel that he is here. No longer do we delight to linger over the flowers. No longer do we stay to admire the lustre of the petals, the beauty of the leaf. If we venture among the plants it is for a brief stay, and our enjoyment is more than tempered—it is saddened, by the death of the flowers. Leaden skies, weeping as they lower, hang over us. The silver lining is not in sight, and, human-like, we are filled with the mourning of the time. Through the fast thinning Whitethorn hedge the sea looks cold and grim and forbidding. From the hedge the brown and yellow leaves flutter and fall. The Clematis on the archway is a network of branches, no longer covered with leaves and flowers. Only a few of its seeds remain, and soon these will, like the others, float in the wind as their feathered awns catch the breeze. Herbaceous flowers are but skeletons of the dead; bare and brown, they are waiting until they are cleared away. As we look upon the garden and its inmates, we think of the songs and stories of the season's sadness—how poet and prose writer have told its tale. We seem to see through all the pain-worn poet, David Gray, and to hear his prayer—

> O, Winter, wilt thou never, never go?
> O, Summer, but I weary for thy coming.

Yet this man, thirsting as it were for the joy of the golden hours, could yet behold with ecstasy the winter sunset and the "eternal moon," finding in these something to allay the passionate longing for the resurrection of the glad summer time.

So may we, as we have done before, find our love of the garden, if unsatisfied, at least rewarded, by the revelation of some beauty in the midst of the shadows which overhang. The robin pipes a cheerful song as he sits near us. So may we find cheer amid the gloom. But for the shadows we would not enjoy to the full the light which follows when they are swept away. They are not for ever, and their coming gives us that change we desire. As Sir Edwin Arnold says in "The Shadow of the Cross:"—

> We know how weary the dawns would go,
> Lacking the promise of placid eves;
> We know how fiercely the hours could glow,
> Without the cool green dusk under the leaves.

These times, too, give us the opportunity and desire for other phases of beauty—other aspects in which the garden can give us enjoyment and satisfaction.

We see with, as it were, new eyes, and in these shadowed days are receptive of other, if more sober, joys. It is now that even the moss on the grey wall, the Stonecrop, and the Houseleek beside it or on the roof, acquire a new beauty. The moss, refreshed by the rains and undried by parching winds, is bright as emeralds. The heps of the Sweet Briars in the hedge are scarlet, and glow even in the gloom, so plentiful are they yet when frost has not driven the birds to clear the serried branches. The Cotoneaster is beaded with its dull red berries which before winter flies away will give the birds many a needed meal. The Mossy Saxifrages are mounds of brightest green, and the evergreen plants give cheer amid the decay around. The "Ivy green," of which Charles Dickens sung so heartily, is bright on the wall and the trellis. The Holly, with its glossy, prickly leaves, is never so welcomed as in this season, when its scarlet berries shine like jewels upon their branches. The Euonymus by the window is glossier than when the sun looked down upon it in dazzling splendour instead of, as now, weary looking with hiding behind the clouds. Now, too, we begin to realise the worth of some features of other plants which passed unnoticed when we were too much engrossed with the colour and beauty of the children of the light. Among these are some silver or silver grey plants to which we may devote a portion of the space which remains.

In the rock garden there is a good bush of the hoary Lavender Cotton, known to botanists by a name we almost shrink to write. It is Santolina Chamæcyparissus var. incana. What things are done, and what names given under the guise of science! For pity's sake we never, in speaking of it, use the many-syllabled name, and, in lieu, call it Santolina incana, or use the English name of Hoary or Silvery Lavender Cotton. It is a flowering plant, but its flowers are small, rayless, and yellow in colour, and its beauty lies in its silvery and attractive foliage. It looks as if powdered over, and a good bush, unless when thoroughly wet, is very pleasing on a dull and cloudy day. It grows rapidly on a light, dry soil and submits uncomplainingly to cutting back and reducing in size. In some cold gardens it is a little delicate, but with me it gives no trouble.

Hardly silvery, yet light enough in its glaucous green to give a brighter tint in its dark surroundings, is Othonnopsis cheirifolia, a succulent looking plant I have spoken of before, but from a different point of view. It is an uncommon looking plant with its flattened foliage, and now and then will give us a flower or two in the depth of winter. Even now some buds of this Barbary Ragwort seem as if a week or two would cause them to open into yellow Marigold-like blooms. Look into the little arbour whose lattice-work is covered with Roses all flowerless now, but not leafless yet. There is silver here also, but it is the silver of the penniless "Money-in-both-Pockets"—the Honesty. The outer coverings of the seed vessels have gone. The "money" (the seed) has fallen, and only the inner lining with its silver white colouring is left. It is still coveted for its use in the house as in long past years, but some plants are always left to keep up the stock from self-sown seedlings. A colony of these has been in the arbour for a year or two, and is equally pretty when in flower in spring and now, when showing the silvery linings. A little earlier than this they look shabby, but the compensation has come at the present time. Very pleasing, too, just now is a variegated form of Cheiranthus alpinus, which reminds one of a halcyon day at Carton. It originated there, and is known as the Carton Wallflower. Its green and white foliage is pretty now, and is at all times worthy of observation. Close by is a variegated form of Saxifraga Guthrieana, a very distinct gold and green leaved plant, resembling nothing more than the well-known Arabis lucida variegata, but more refined in every way. These variegated Arabises, of which there are several, are also bright and give the variety we seek at this time.

There are mounds of Alyssum saxatile—now in quaker grey, but adorned in spring with a mantle of cloth of gold. There are, besides, carpets of silvery Anthemises and Antennarias, and others of like colouring. Nor are these beauties of leaf-colouring all. There are waifs and strays left from the dispersal of the flowers. Some are weary with the struggle against the season's power, and look out wan and faint upon us as we pass. Crimson and pink Gladioli, Asters, Scabiouses (the Mourning Widows), some sprays of Alyssum gemonense, a very few Antirrhinums, a few spikes of Veronica parviflora, a small number of Violas; Linum flavum, whose yellow pointed buds cannot fully open from want of sun—these are present, with others besides. Potentilla alchemilloides, with its white flowers, has a partner in Geum pyrenaicum, a young plant of the latter giving its yellow flowers.

A bunch of double rose-coloured Colchicums has disconsolate, drenched rivals in the various Crocuses yet in bloom. There is a late-produced spike of Eryngium Oliverianum; there are annual and perennial Chrysanthemums, and here and there a scarlet or yellow Nasturtium is to be seen on the trellis. These, with a few others, are in company with double Primroses, a few Christmas Roses, a stray picking of Violets, even now "sweeter than the lids of Juno's eyes or Cytherea's breath," and other adventurous spring flowers, which the mild time has cheated into fancying it the new, and not the old year.

The shadows are here and over us, but they are only such; and we feel that behind them is the light which shall shine yet again. The clouds are leaden, but there are streaks and lines, which show that they will break up and pass away, giving us once more the garden's joy-giving beauty.—S. ARNOTT.

HARMFUL AND HARMLESS GARDEN MOTHS—12.

DURING the spring season, when there is so much to occupy the time and attention of gardeners, many plants are liable to the insidious attacks of the early brood of caterpillars, which sometimes escape notice until the mischief done can only be partially remedied by their removal. Thus, slim looper caterpillars often haunt our Roses while they are leafing; small, but hungry, and, extending themselves along the twigs, are overlooked by the gardener when they are young, their colour being green; fortunately the eyes of some birds are sharp. As they grow, occasionally the colours become darker; such is the fact with the caterpillar of the moth that is rather oddly called the shoulder stripe, or Anticlea badiata, which comes out during March to deposit eggs on the Dog Rose, also on the garden species, specially the Briar kinds. Green at first, this caterpillar afterwards has the head orange and black, the sides being shaded with purple, the back having numerous dots of white. It is frequent in the English counties, but not abundant enough to be mischievous. Also in the spring we see about gardens a less common and prettier species of the genus, A. derivata, or the "streamer;" the barred wings have a delicate gloss; it flies rather briskly by day. The green and red caterpillar eats Rose leaves during May, occasionally it is found on Honeysuckle.

The Dutch farmers have for centuries been famous for their Cabbages; at a time when plants of this tribe were not much grown in Britain, they were imported from Holland for the tables of the nobility. Perhaps the moth known as the flame carpet (Coremia propugnata) is more common in that country than with us; anyhow, the Dutch were the first to discover that the caterpillar fed on the Cabbage. It is of moderate size and greyish, marked with pink, occurring upon the food plant in spring, also in summer, since there are two broods each year. This is found throughout our islands, though not an abundant species. The moth, which is pale grey banded with chocolate, having a few white lines, flies about at dusk in May and August, but is seldom seen, or at least recognised. It is not a Cabbage foe needing to be hunted down by us.

Scarcely a garden throughout England fails to furnish us with specimens of the yellow shell moth in June or July, this being fond of lurking amongst evergreens and thick shrubs, from which it often flutters on the near approach of a footstep, only to seek shelter again speedily. This moth, called by science Camptogramma bilineata, has not only a couple, but many lines upon the yellow surface. Most of these lines are brown; three, however, are white on the upper, and two on the lower wings. This is a species which, when once observed, we are pretty sure to remember again if we come across it. The caterpillar feeds about fields or garden lawns upon a variety of grasses; it is green and yellow; during the day it hides amongst the roots, or under stones and clods. We may turn it up in April or May, but it is not deemed a caterpillar injurious to the grass crops.

I do not profess to know why an allied, but less species, received its Latin name of C. fluviata, but the English one of the "gem" is intelligible. Upon each fore wing is a white spot, enclosed within a dark ring, and when the moth is seen at rest where there is but little or dim light, this spot shines out like a gem, contrasting with the black surrounding. The wings are chiefly greyish-brown in the male, brick red in the female moth. It is a species which, from some unexplained cause, is commoner in the London suburbs than elsewhere, and is on the wing during July. The caterpillar feeds on groundsel in the autumn, and hides under the lower leaves; it is found both brown and green.

A pretty moth, which has rather distinctive markings, and occurs about gardens and hedgerows during the summer, is the small waved umber, Phibalapteryx vitalbata. Its wings are long for the size of the body, pale brown, with wavy lines of darker brown, two small black spots on the fore wings; the body is banded. In the autumn we may notice its caterpillar upon Clematis, or now and then upon Honesty. It has a fancy when at rest for making itself a sort of ladder between two leaves or stalks, by holding on across with the front pair and the last pair of legs. It is much wrinkled and warted, of some tint of grey, on which are blackish spots and stripes. About equal in size, lighter coloured, and indistinctly marked is the moth called the "fern," for no reason that I know of, since the food plant is Clematis. It is also P. tersata. This species is chiefly seen in the East and South of England. The caterpillars, which are brown, grey, and black, feed at the same time as the preceding, but only at night. If touched they drop, coiling up their slender bodies into a sort of Catherine's wheel. Allied to these is the larger and handsome moth, the tissue (Scotosia dubitata), which visits gardens in September to regale upon the honey their flowers afford, the females hybernating. The wings are brown but suffused with a rosy gloss, varied with white and grey. It is reared upon the common Buckthorn of our woods and hedges.

Then we get in gardens sundry representatives of another group of these geometer moths, the Cidarias, most of which are, in entomological books, called carpets, though really their markings are of a varied character. Several species make themselves conspicuous at the end of autumn by flying about the Ivy bloom, that of the Laurustinus, the winter Jessamine, and late garden flowers. The red-green carpet, C. siterata, is barred with red, the general colour being greenish grey; it hybernates amongst Ivy, or hides in sheds and outhouses; its caterpillar is seldom noticed, it has been taken on Apple, Lime, and Oak. Very similar in appearance and habit is the autumn green carpet, C. miata, a more abundant species, which the gardener may chance to disturb in its winter slumbers while he is pruning or tidying up. It is a harmless species, the food of the caterpillar being principally Birch and Elder leaves.

Only in the North of England do we find about gardens the netted carpet, C. reticulata, a moth with quite a style of its own; for upon the deep brown of the fore wings are arranged numerous white lines, which give a netted or tesselated appearance to the species. Its season of flight is July; the caterpillar is seldom discovered; it is one of the few which subsist upon the Impatiens Noli-me-tangere. Common throughout the British Islands is the small phœnix, C. silaceata, remarkably variable in colour and markings; its caterpillar is occasionally found on some species of Epilobium, specially E. angustifolium, in shrubberies; it is slender, pale green, dotted with brown. If touched it shows displeasure by shaking the head backwards and forwards until the annoyer departs. Larger, and also variable, but having fewer markings, which are black and white on the brown ground colour, is the phœnix, which greets us on July evenings, though in neither of the kindred species is there anything to suggest resemblance to the bird of fancy.

The Latin name of another moth, Cidaria ribesiaria, tells a fact in its history, the food of the caterpillar being Currant or Gooseberry leaves. It is not a scarce species, occurring in many counties of England and Ireland, but has not yet been reported as numerous enough to be hurtful to the bushes. About the middle of June the caterpillars are full fed, being dark green, having along the back eight lozenge-shaped black marks, which enclose white dots. The chrysalis is enclosed in a slight cocoon, the moth emerging during July, when eggs are deposited on the bark, remaining unhatched till the spring. Upon the Red and Black Currant, again, feeds the caterpillar of the Spinach moth, oddly so called, the C. dotata of Linnæus. A sluggish caterpillar of yellowish green, long and thin, yet a hearty eater, as some spare people are. Mr. Doubleday and others have noticed its effects upon the foliage of the bushes occasionally; it lies quiet, at full length, upon the twigs during the day, feeding after dark in April and May. The moth nearly resembles others belonging to the family. To add one more species, the treble-bar (Anaitis plagiata) is sometimes seen about gardens in May and August; the caterpillar lives upon some species of St. John's Wort or Hypericum. A peculiarity of this insect is that both moth and caterpillar are adorned with wavy lines.—ENTOMOLOGIST.

CHRISTMAS ROSES.

THE majority of persons who possess handsome specimens of these plants will be looking forward to the annual display of their welcome flowers, the better forms of which are so justly prized at this season of the year. The thought of attempting to transplant the roots at this time would undoubtedly appear somewhat ridiculous, as no doubt it would be to some extent were it recommended generally; but it is not, nor is there any occasion to disturb these specimens so long as the possessor is certain that they have abundance of suitable soil for their requirements, and the plants themselves by the luxuriance of their foliage and the abundant supply of their flowers afford ample proof that they are in good condition.

What I have to say just now about these very desirable plants is more especially directed to those who may be thinking of making new plantations, and my advice is to plant at once and not delay till the arrival of spring, a season that suits many of our best hardy plants admirably, but is altogether wrong for the "niger" section of this family, and particularly does this apply to all those localities where the soil is light or sandy, or, what is equally bad, a soil which for summer is overdrained.

Though not particular as to soil itself, these Hellebores are most happy in rather heavy loamy land, the depth of which cannot be too great, and finally a cool moist position where a free circulation of air is continually going on. Some few years since the whole of my Hellebores were planted on one of the open quarters, and though cared for as well as circumstances would permit, their appearance indicated the position was unsuitable, but better quarters were obtained for them, and they now grow in luxuriance between hedges of Oval-leaved Privet, well repaying by their rapid increase.

The full heat of summer sun they cannot endure, nor do they require the incessant cold and shade that a 9-inch wall affords. The shelter and shade they need is only partial, and should be afforded them by evergreen hedges wherever possible. This kind of protection is of great benefit, and in many instances the plants which are nearest the hedge, in spite of the latter robbing the soil by its mass of roots, as well as keeping off the rain, are decidedly more vigorous and the foliage more abundant than are those plants 5 feet away, and which have in consequence a far greater share of summer sun than those nestling at the foot of the hedge.

From these facts, then, it may be gleaned that a partially shaded spot is what they thoroughly enjoy, and such a one could, if sought after, be found in almost any garden ; for a couple or three shrubs or Conifers would supply the need if properly placed, and what more beautiful and useful than large handsome patches of these old-fashioned perennials? Not only does the foliage appreciate protection from sun and heat, for the roots also are equally fond of moisture, or, more correctly, of being continually cool, to insure which some amateur growers bury blocks of sandstone in the soil. But while admitting the great benefit accruing from such treatment, I fear it is too elaborate for the majority of those who grow Christmas Roses. Three feet depth of well enriched soil they fully value, and for dry, hot, much-drained soils, cow manure may be employed freely, keeping it a few inches below the roots at planting time.

No period is equal to the early autumn months for planting, and the earlier the better, thereby insuring as many newly formed roots as possible. When well established, these plants are much benefited by bountiful supplies of liquid manure in autumn and winter. I much prefer giving it to them at this time when the soil generally is well charged with moisture, for then it lies about the surface and descends gradually to the roots below ; while, if given in the summer time, it quickly passes through the soil, and affords little or no help to the plants themselves.

It is worthy of note that the varieties of Helleborus orientalis, as also H. colchicus, H. antiquorum, H. guttatus, and H. purpurascens, do not suffer in the same degree either from the effects of sun or spring planting as the varieties of Christmas Rose, and may therefore be planted in more open positions, and over a more extended period, without incurring any risk. Many of this last named section have very handsome foliage, which, coupled with their more or less beautiful and curious flowers, are always productive of good effect in the herbaceous border, the rockery, or the shrubbery.—H. E.

THE CHIEF ELEMENTS OF PLANTS.

THE generality of vegetable products are found on analysis to be composed of one-half carbon and one-half of the constituents of water—oxygen and hydrogen. Thus an ordinary sized Oak tree, weighing about 60 tons, contains some 30 tons of carbon. So also the immense quantity of sugar used is composed half of the same constituents.

The first idea that presents itself to the mind is that the enormous proportion of a solid element must be derived from the earth ; but chemistry demonstrates that the earth loses but little weight through the growth of plants. The following experiment, made nearly a century ago, is conclusive on this point :—Two hundred pounds of earth were dried in an oven and put in a large earthenware vessel, the surface moistened with rain water, and a Willow tree, weighing some 5 lbs., planted in it. For five years this was daily watered ; the Willow grew and flourished, and to prevent the earth from becoming mixed with the dust blown by the winds, the surface was covered with a perforated metal plate, suitable for the admission of air only. At the expiration of the five years the Willow tree was removed, and found to weigh over a hundredweight and a half, exclusive of the leaves which had annually fallen. The earth was taken out of the pan, again dried in the oven and reweighed. It had lost 2 ozs. only.

Thus a great substance had been produced, but from what source? It was concluded as a matter of course that the tree derived its increase in its contents from water, and it was left to later scientists to show that it is from the air we breathe that the solid element is obtained which enters so largely into the structure of the vegetable kingdom. The chemist can decompose the carbonic acid in the atmosphere, and produce solid carbon, but he is compelled to admit that the same process is performed by the leaves of trees in so perfect a manner as to put into the shade his skill.

The volume of carbonic acid produced by a healthy adult is so great that it is computed a million people exhale 165 tons of it every twenty-four hours. In the state of exhalation this gas is poisonous, but its deleterious effects are neutralised in a great degree by its diffusion through the air, and being continually decomposed by plants, which absorb it into their system as food, retaining the carbon, and emitting the oxygen, and so purifying the air whilst sustaining themselves.

Thus it appears to be the task of the vegetable kingdom to sustain the uniform balance of the constituents of the atmosphere. For we see no vegetable grows in vain ; from the stately Oak to the grass in the fields every individual plant is serviceable to man. If not always distinguished for some special virtue, yet ever taking part in the process of cleansing and purifying the atmosphere. In this connection such opposite plants as the fragrant Rose and the Deadly Nightshade alike co-operate. Nor even is the herbage nor the woods that flourish in the most remote and unpeopled regions unprofitable to us, nor we to them ; for the winds are constantly conveying to them our vitiated air, effecting a twofold purpose —relief to us and nourishment to them.—WM. NORMAN BROWN.

Notes & Gleanings

WEATHER IN LONDON.—Since our last issue went to press we have had a small taste of winter in the form of a very sharp frost. This occurred on Friday morning, and continued over the greater portion of the day. Saturday was also cold, but changing ; rain fell in the evening. There was a suspicion of snow in the morning, but it was very slight. Sunday was fine but not particularly bright. There was a heavy rain and wind storm on Tuesday night. Wednesday opened wet, but was fine later.

—— WEATHER IN THE NORTH.—From the 1st to the 4th inst. frosts averaging about 6° were a welcome change from the dull and wet weather preceding, and these days were generally bright and fine. Since then there has been a recurrence to former conditions. Monday was fair, but in the evening a good deal of rain fell ; the night was stormy, and Tuesday morning boisterous and wet.—B. D., *S. Perthshire.*

—— ROYAL HORTICULTURAL SOCIETY.—The last meeting this year of the above Society will take place next Tuesday, the 14th, in the Drill Hall, James Street, Victoria Street, Westminster, 1–4 P.M. The Fruit, Floral, and Orchid Committees will meet as usual at twelve o'clock. A lecture on "Sporting in Chrysanthemums" will be given at three o'clock by the Rev. Geo. Henslow, M.A., V.M.H.

—— NATIONAL ROSE SOCIETY.—The twenty-first annual general meeting of the National Rose Society will take place at the rooms of the Horticultural Club, Hotel Windsor, Victoria Street, Westminster, on Thursday, at 3.30 P.M. to receive the report of the Committee, to pass the accounts, to elect the Committee and officers for the ensuing year, and for the transaction of other general business.

—— MR. JAMES BATEMAN.—We regret to have to record the death of this talented botanist and horticulturist, which occurred at Worthing, on November 27th. His interest in orchidaceous plants was intense, and besides inducing friends to send him plants, he sent out collectors at his own expense. The deceased produced a work entitled "Orchidaceæ of Guatemala," which was superbly illustrated with coloured plates, and also a "Monograph of Odontoglossums." He was one of the first to advocate a more rational system of growing Orchids, and thus did much for their popularisation. Mr. Bateman had attained to the age of eighty-six when he died.

—— ISLE OF WIGHT.—The monthly meeting of the Isle of Wight Horticultural Improvement Association was held at Newport on Saturday last. Dr. J. Groves presided over a large attendance of members. Mr. C. Martin, Clarence House Gardens, East Cowes, read a thoroughly practical paper on the "Cultivation of Crotons, Caladiums, and Dracænas." The lecturer dealt in detail with every phase of culture. Mr. W. W. Sheath, Macrocarpa, Ventnor, greatly added to the interest of the paper by staging specimen leaves of Crotons and Dracænas ; he also gave his experience as a grower of these useful plants. The subsequent discussion was entered into by many of the members present. Mr J. H. Silsbury, Shanklin, staged a fine bloom of the new Chrysanthemum Julia Scaramanga, which was greatly admired. The Association is developing latent talent in horticultural subjects, and continues to increase numerically. The annual meeting will be held on January 8th.—S. H.

—— BARDNEY MANOR HOUSE.—This is the residence of John Sharpe, Esq. A large garden adjoins the house, where many good hardy herbaceous plants find a congenial home. Apples and Pears are largely grown, and the vegetables show the result of careful selection. A conservatory is gay with Chrysanthemums. Other things are grown here, both for affording pleasure and profit combined, notably Grapes, Peaches, Tomatoes, and Tea Roses. Of the former large quantities are grown, the varieties hanging now being Gros Colman, Alicante, Mrs. Pince, Madresfield Court, Muscats, and Lady Downe's. A large dry loft serves the purpose of a Grape room. Racks are arranged to the roof as well as in the centre, for bottles, and in these many hundreds of bunches will be preserved in good condition till the spring. A large house is devoted to Tomato culture, and for testing the merits of numerous varieties, one of the best being Sharpe's Plentiful, a cross between Perfection and Glenhurst Favourite.—A VISITOR.

—— THE "DEVONIAN" POTATO.—This is the temporary name of a new Potato which has come into the hands of Mr. O. Thomas, of the Royal Gardens, Frogmore, and which I have been favoured to taste, after being well cooked. Not any time since the days of the once famous Victoria have I been enabled to taste so delicious a Potato. The flesh is tinged with yellow, as all the best flavoured ones are. It is flaky, starchy, soft right through, and quite delicious. Mr. Thomas will send some to Chiswick to grow there next year. The variety is of a longish flat form, some tubers almost kidney shaped; skin white, and roughly netted.—A. D.

—— MONUMENT TO THE LATE BARON VON MUELLER.—It is proposed to erect a monument of grey granite, 23 feet high, over the grave of Baron von Mueller in St. Kilda Cemetery, and donations are invited for that purpose by the late investigator's executors. Botanists will be pleased to know that the Baron's supplemental volume of the "Flora Australiensis," upon which he had worked for years and was preparing for the press at the time of his death, together with two volumes on his administration as Director of the Botanical Gardens, embracing a biography and complete bibliography of his writings, are to be published. His executors will feel favoured by the loan of any of his letters, or the communication of incidents in the Baron's life which his friends deem to be worthy of notice in his biography. Subscriptions for the monument, or material for the biography, should be sent to the Rev. W. Potter, "Vonmueller," Arnold Street, South Yarra, Victoria. —("Nature.")

—— ASTER TARTARICUS.—One of the most useful of late blooming herbaceous plants is Aster tartaricus. Very nearly all our native sorts, of which there is such a large variety out of bloom, but just as they are over and one thinks the herbaceous display is past for the season, out comes this beautiful Asiatic species. There are not many leaves besides the radical ones. The flower stalks arise to a height of 4 to 5 feet, carrying masses of large, light blue flowers at the summit, and these flowers are in perfection a long time. I write this, says Mr. J. Meehan in an American contemporary, on October 28th, and should it not freeze before, I am sure there will be a good display for two weeks yet, and there has been a two weeks' display already. This beautiful species spreads rapidly from its roots, soon forming strong clumps. It will be valuable for forming masses to give late flowers. There is no other herbaceous plant that I know that approaches it in appearance or in its value for autumn display.

—— A GARDENERS' MISTAKE.—Under this heading we referred last week to a case then pending at the Nottingham Assizes. The information was condensed from reports that were sent to us by three correspondents. We have now sent for publication the result of the trial as follows: — "Thomas Harwood Crasp, gardener, on bail, was indicted for embezzling sums of £4, £2, £1 14s., and 11s. respectively, moneys received by him on account for the Right Hon. Francis John Savile Foljambe, at Osberton, on September 15th, 1896, and other days. Mr. Etherington Smith appeared for the prosecution, and Mr. Snow Fordham for the defence. The prisoner had been employed by Mr. Foljambe for a year and three-quarters as head gardener, at a salary of £100 a year, with extras in the shape of rent, coals, &c., and it was his duty to sell flowers and produce from the garden, and render an account through Mr. Kaye, his master's agent. The allegations now were that prisoner had sold flowers to a Mrs. Mellish, a florist and greengrocer, at Worksop, to sell again, and had not accounted for the money. The Judge, in summing up, pointed out the impossibility of the prisoner forgetting about the money, and on the Jury finding him guilty, sentenced him to two months' imprisonment with hard labour." The nature of the defence was indicated last week. We can, of course, say nothing against the sad and severe sentence; but as to the "impossibility of forgetting," we happen to know that "forgetting" to send in accounts for money legitimately due is the reverse of an "impossible' occurrence. The sender of the above paragraph (from the Sheffield "Daily Telegraph"), and himself an employer of gardeners, adds: "Everyone I know deeply regrets that such an able man as Crasp should have got into this difficulty, and everyone deeply sympathises with his wife and family." Mrs. Crasp is in the greater need of sympathy as the victim of a double misfortune, for we are informed that her father died on the day of the trial. Her husband is admittedly one of the most competent of gardeners, and few men could have had better testimonials as to character and ability than he had from noblemen who appreciated his services. The importance of scrupulous exactitude in the discharge of duties of whatever nature is strongly enforced by this lamentable case.

—— ROYAL METEOROLOGICAL SOCIETY.—At the ordinary meeting of the Society, to be held at the Institution of Civil Engineers, Great George Street, Westminster, on Wednesday, the 15th inst., at 7.30 P.M., the following papers will be read:—"Daily Values of Non-Instrumental Meteorological Phenomena in London, 1763–1896," by Mr. R. C. Mossman, F.R.S.E., F.R.Met.Soc.; "The Rainfall of Seathwaite, Borrowdale, Cumberland," by William Marriott, F.R.Met.Soc.

—— SUSSEX WEATHER.—The total rainfall for the past month at Stonehurst, Ardingly, Sussex, was 1·71 inch, being 1·96 inch below the average. The heaviest fall was 0·59 inch on the 27th. Rain fell on twelve days. The highest temperature was 59° on the 18th, the lowest 28° on the 26th; mean maximum, 49·25°; mean minimum, 39·15°; mean temperature, 44·20°, which is 1·43° above the average.—R. I.

—— NOVEMBER WEATHER AT DRIFFIELD.—Mean temperature at 9 A.M. (corrected), 44·41°; wet bulb, 43·35°. Mean maximum, 49·43°; mean minimum, 39·37°; highest, 56·8° on the 13th and 20th; lowest, 28·8° on the 16th. Mean of maxima and minima, 44·4°. Mean radiation temperature on the grass, 35·62°; lowest, 22·5° on the 16th. Rainfall, 3·04 inches; number of rainy days, twenty-one; greatest amount on one day, 0·6 inch on the 14th.—W. E. LOVEL, *Observer, York Road, Driffield.*

—— NOVEMBER WEATHER AT HODSOCK PRIORY.—Mean temperature, 45·1°. Maximum in the screen, 58·8° on the 20th; minimum in the screen, 28·2° on the 23rd and 30th. Minimum on the grass, 16·7° on the 30th. Number of frosts in the shade, five; on the grass, thirteen. Sunshine, thirty hours, or 12 per cent. of the possible duration. Rainfall, 2·02 inches. Rain fell on seventeen days; maximum fall, 0·66 on 30th. Rainfall from Jan. 1st, 20·53 inches. Difference from av., 2·65. Mild and very dull. Dry till the last few days, which were stormy.—J. MALLENDER.

—— WEATHER AT DOWLAIS.—The following is a summary of the weather here for the past month:—Average maximum temperature, 48°; highest reading, 62° on the 18th. Average minimum, 34·7°; lowest reading, 21° on the 29th. It was below freezing point on eleven days. Total rainfall, 5·03 inches, 2·65 of which fell on the 12th and 13th; greatest fall, 1·50 inch, which fell on the 12th. Rain fell on thirteen days The wind was in the N. and N.W. on seventeen days; very strong and cold for the first week, very thick fog every day of the second week, and culminating with the downpour referred to above. There were nineteen sunless days.—WM. MABBOTT.

—— THE WEATHER LAST MONTH.—November gave us much fog, and sixteen days were wholly without sunshine. It was also remarkable for a very high reading of the barometer, 30·708 inches, which is the highest reading here since 1893. The wind was in a southerly direction nineteen days. Total rainfall—1·42 inches; this fell on seventeen days, and is 0·98 inch below the average for the month; the greatest daily fall was 0·29 inch on the 14th. Barometer (corrected and reduced).—Highest reading, 30·708 inches on the 21st at 9 A.M.; lowest, 29·026 inches on the 28th at 10.30 P.M. Thermometers.—Highest in the shade, 58° on the 12th and 13th; lowest, 27° on the 26th. Mean of daily maxima, 49·23°; mean of daily minima, 38·50°. Mean temperature of the month, 43·86°; lowest on the grass, 23° on the 26th and 30th; highest in the sun, 84° on the 10th. Mean temperature of the earth 3 feet deep, 47·70°. Total sunshine, forty hours thirty-five minutes; there were sixteen sunless days.—W. H. DIVERS, *Belvoir Castle Gardens, Grantham.*

—— HACKTHORN HALL.—Calling the other day at Hackthorn Hall near Lincoln, the residence of E. W. Cracroft, Esq., I saw the splendid Black Hamburgh Grape Vine which was planted by the present gardener twenty-seven years ago. The house is about 50 feet long, and the Vine is planted in the centre about 5 feet from the back wall, and having a cane running right and left to the ends of the house. From this are ten other canes at regular distances trained downwards to the house front, with shorter canes from the main stem to the top. The Vine is wonderfully healthy, and is still carrying a heavy crop of well coloured bunches averaging about 1 lb. each. The total crop this year is nearly 500 lbs. Mr. Popple allows the Vine to break naturally, using a little warmth in the pipes as the berries begin to colour. A large piece of ground in the gardens is enclosed with wire netting for the cultivation and protection of small fruits, such as Currants, Gooseberries, and Raspberries. The plan has been adopted for many years with the most satisfactory results. A capital lot of Chrysanthemums in full flower filled the greenhouse. All the most useful varieties for cutting and decoration were represented. To show the mildness of the autumn, it may be mentioned that many Cactus Dahlias were in flower on November 22nd.—G. W. CUMMINS.

—— We are requested to state that Mr. Archibald Forbes, son of Mr. John Forbes, Buccleuch Nurseries, Hawick, was married on the 3rd inst. to Miss Eleanor Snowdon, eldest daughter of Mark Currie, Esq.

—— Chislehurst Gardeners' Association.—The balance of £5 15s. 6d. which was taken at the exhibition of Chrysanthemums held in St. Mary's Hall, Chislehurst, on November 17th, under the auspices of the Chislehurst Gardeners' Mutual Improvement Association, has been equally divided between the Cray Valley Cottage Hospital Fund and the Royal Gardeners' Orphan Fund, each of these institutions receiving £2 17s. 9d.—H. Yoell, *Hon. Sec.*

—— Small Holdings.—The "Rural World" has received the following account of a sale of land to small cultivators:—A most interesting land sale, said to be quite a new departure amongst friendly societies, took place at the Warwickshire village of Broughton Astley the other day. A six-acre field belonging to the society was marked off into plots for homestead allotments, and put up to the competition of members. It realised £350—just about £60 an acre—a remarkable price for village land in these days of depression. There were fifty-four lots, averaging an eighth of an acre each. Every plot was sold, and the competition was very keen.

—— Morden Cottage Garden Society.—At the monthly meeting of this Society, held at the Village Club, on December 2nd, a lecture was given by the Hon. Sec., Mr. J. H. Rewcastle, on Chemical Manures. Commencing with a sketch of the discovery and history of the manures, Mr. Rewcastle went on to describe, in an interesting and instructive manner, the practical use to which such manures may be put by cottage gardeners, who are often unable to obtain farmyard manure in sufficient quantities to properly nourish the plants. The different kinds of manure; the crops to which they should be applied; the times and seasons when they are most useful, were carefully pointed out; and at the close of the meeting, a paper prepared by the lecturer, containing full particulars as to quality, proportion, and price of chemical manures was handed to each person present. An interesting discussion and hearty vote of thanks to Mr. Rewcastle brought the proceedings to a close.

—— Veronica speciosa.—Of the many species of shrubby Veronicas which have been introduced from New Zealand this may be looked upon as one of the most showy and useful. Strictly speaking it cannot be called a hardy shrub, though in favoured localities it will stand outside uninjured through mild winters. The type, with its handsome, glossy, oblong foliage and dense cylindrical racemes of light blue or purple flowers, is well known and extensively grown as a window-box plant. The garden varieties, however, which are infinitely better as far as flowers are concerned, though not quite so hardy, are not so well known. A selection will be found worth growing in pots, outside, during summer and autumn, and lifted into a cool frame or greenhouse to flower during winter. A few of the best varieties are Constellation, Eclatante, Lemoine, and La Seduisante, which produce red flowers on racemes 2 to 3 inches long, with peduncles half that length, and Madame Chrêtien, with blue flowers on racemes quite as long. Besides being useful when in flower, large plants would be found useful where evergreen shrubs are in demand for house decoration.—K.

—— Tropical Fruit in New York.—An interesting collection of tropical fruits reached New York recently from the Botanic Gardens in Grenada, a British possession, the southernmost island in the Windward group. The consignment was shipped on October 23rd. A delay of ten days in entering the fruits at this port, due to the unusual character of the invoice and the want of established rates of duty, proved fatal to many of the more perishable kinds, but enough survived to give distinct character to the stock in one of the fruit stores on Broadway. These West Indian fruits included especially juicy Oranges of excellent quality. The Limes were remarkably good, and sold for forty cents a dozen. An unusual offering in this city were Citrons, the fruits of Citrus medica, familiar to housekeepers in their candied peel; there were undersized green fruits and mature ripe specimens. In this unique collection Sapodillas, the fruits of Sapota achras, were fortunate in showing to better advantage for the long time consumed in reaching customers, since these are at their best when more than fully ripened, and the greyish earth-coloured globular fruits were in the juicy sugary stage. A single specimen of the brownish-yellow fruits of Lucuma mammosa was exhibited, and some of the large brown nuts. Alligator Pears were among the fruits lost through the delay, and the few Bananas which were yet edible were remarkably good in quality, the yellow fruit of medium size having rich, creamy white flesh, while the red Bananas were of especially fine flavour. The latter, one of the most rare of all fruits in this market since the supply was cut off by the Cuban war, found eager purchasers. Several bundles of stick Cinnamon also sold readily. Among choice offerings now regularly in trade are Gros Colman Grapes, from England, and from Newport, the former costing $1 75c. a pound, and the latter 26 cents less. Hothouse grown Cucumbers and Tomatoes are as bright and attractive as the most showy of fruits.—("Garden and Forest.")

—— Grapes at Tilehurst.—Reading what Mr. Bradley wrote to you with respect to a house of Grapes at Tilehurst, Reading, of which he seems to have sent you a photo, I ventured to make a calculation as to the number of bunches each rod in the house was carrying, based on his own statement that there were in the house 4635 bunches. The house is 157 feet long, and on either side the Vines are planted at 5 feet apart, that gives thirty Vines on each side, and sixty in all. Each Vine has two fruiting rods. Mr. Bradley does not make clear whether the inner Vines are still existing or are removed. In any case each rod or rods has but 15 feet of rafter to cover. Now making the actual length of rod in each case to be 15 feet, that gives at the rate of 30½ bunches to each 15 feet of rod. Certainly, a very heavy crop indeed. The variety is Black Alicante, and ordinary bunches of that variety should average fully 1½ lb., and rather small at that weight. That should give 57 lbs. of Grapes to each 15 feet of rod. That would be out of all proportion, of course. If the crop be really so heavy it is not to be wondered if some bunches weigh 3 lbs., that the average weight per bunch should not be less than 1 lb. as to get so low an average many bunches must be under the pound. With roots 2½ feet apart and foliage and bunches so dense, it is no matter for surprise if the house was too dark to admit of a proper illustration being taken. I cannot but think that this cause is rather one of Grape production than of Grape cultivation.—A. D.

EATON HALL.

As a short article on Eaton Hall appeared in the pages of the *Journal of Horticulture* on July 9th of the present year, it would be superfluous to enter into any prefatory remarks. Suffice it to say that Mr. Barnes, who is head gardener to the Duke of Westminster, is successful in keeping the houses at all periods of the year in a gay and dressed appearance, no easy task where there is a considerable demand for decorative flowers.

The corridor, 360 feet long, is filled from end to end with a double line of Chrysanthemums on each side, which, with the climber-clad roof, forming a grand arcade of flowers. The Chrysanthemums were grown as bush plants, which becomes a necessity where flowers in quantity are in demand. As I do not profess to be a Chrysanthemum specialist, I shall only note a few varieties, mostly Japanese, which were in evidence. These comprised Edwin Beckitt, Gloire du Rocher, Source d'Or, Val d'Andorre, Souvenir d'Haarlem, Roseum superbum, Niveus, Phœbus, Rose Wynne, and Gorgeous. Single Chrysanthemums, which will be probably more largely grown where there are many vases to fill, were represented by Mary Anderson and George Cameron, both white and pure gold, a rich yellow.

Salvia splendens and S. rutilans were here in scores, and very bright they looked. Amongst the roof climbers in flower were Habrothamnus elegans, Brugmansia suaveolens, Abutilon Boule de Neige, Acacia lophantha, and Cassia corymbosa. The Water Lily house was as usual a picture of effective arrangement. The miniature groups of plants rising from a groundwork of Panicum and Ferns were in perfect harmony. Among the kinds utilised are Begonia John Heal, Impatiens Sultani, Reinwardtia tetragynum, and the delicate purple Justicia speciosa, as well as Coleus and Crotons.

On the eastern side of the corridor, and at right angles thereto, are eight plant houses, including the Water Lily house mentioned. One is a Palm house, and another gay with Cyclamens in flower and baskets of Asparagus deflexus hanging over the walk. Epacris and large Camellias, Malmaison Carnations in excellent health, winter-flowering Zonal Pelargoniums, mostly single flowered, and in full bloom, were seen in various structures. On the western side of the corridor, as lean-to against the wall, are four other plant houses, one of which contained about 300 plants in flower of Plumbago rosea, mostly in 6 and 7-inch pots. The next house was filled with very vigorous Arum Lilies in 7 and 10-inch pots. Bouvardias were in another division, while suspended from the roof were baskets of Centropogon Lucyanus. I also saw several fine plants of Peperomia arifolia argyrea.

Cœlogyne cristata, in the best of health, was largely represented. I only entered four of the Orchid houses. These were of teak wood, and their arrangement is something like what an Orchid house ought to be. They were in two ranges, in the first of which were healthy plants of Cattleya labiata autumnalis, now in flower, while Cypripedium insigne was flowering freely. The plants were arranged amongst Adiantum cuneatum as a groundwork, relieved by elevated plants of Adiantum farleyense in 7-inch pots, the fronts of the stages being draped with Panicum and Selaginella denticulata aurea. The next range had one division, with Calanthe Veitchi, C. vestita oculata, and C. vestita lutea in flower, and another was gay with Dendrobium phalænopsis Schröderianum. There were also several plants in flower of Cypripedium Harrisianum and C. Charlesworthi, the plants being arranged with Ferns interspersed as before mentioned. The stages were edged with Panicum and the lovely blue Saintpaulia ionantha.—F. Street.

REST IN PLANT LIFE.

Is it absolutely correct to assert that "it is an indispensable part of the great plan that all life should have rest?" I ask this because, being the opening sentence in your first paper of last week's issue, I felt that it constituted either an unquestioned dictum or set up an empirical theory. I am, perhaps, rather sceptical with reference to many assumed physiological "truths" in relation to vegetable life, for the somewhat obvious reason that, not only is our present knowledge of plant physiology somewhat restricted, but from time to time we find new ideas put forward that seem to be contrary to previous views, and these new ideas gradually develop into established facts. Now, I put aside all reference to animal life, because animal life and vegetable life are so essentially dissimilar.

In relation to the latter life, however, I ask the above question, because I see that in tropical countries, and in tropical houses here, there seems to be none of that "rest" which is found in vegetation in cold or temperate climes. Tropical Palms, Ferns, Crotons, Dracænas, indeed a large variety of ordinary plants, have to be kept at home as they are in their native habitats—always growing. If they cease growth at all, relatively it is only when temperature is reduced and natural requirements are not furnished. But such conditions are not furnished to enforce rest, but merely to suit the gardener's necessities. There is in the case of all this tropical vegetation absolutely no proof that what is empirically termed "rest' is necessary.

But what is with vegetation this so-called "rest?" True, we see in deciduous or herbaceous plants complete defoliation in the autumn, and, apparently complete cessation of growth. That may be as much due to the reduced temperature of the season, just as the increased temperature of the spring time compels active foliage production. But if the temperature of January or February, with general absence of sunlight were continued on into June or July, would the trees and shrubs put forth leafage then simply because they had had their customary season of apparent rest, or would they remain resting until warmer weather compelled activity? It is very evident that in considering this matter we have to separate "rest," if such be an essential element in plant life, from dormancy or inaction enforced by low temperature.

What are plants, shrubs, or trees doing during what is termed this resting season? Are they like the seed which seems not to have changed in any sense from the time gathered in the summer till sown in the following spring? Rest is a relative term, because it may mean one thing or another. Thus to some it simply means sleep, a kindly torpidity, without change of any sort, a mere waking up to find just what went to sleep. How vegetation can be in any sense benefited by such rest it is hard to understand. Then there is the wider and more apt interpretation of the term "rest," which means in this case recuperation; a common assumption, yet perhaps not the correct one, seeing that recuperation means making good some exhaustive effort, and where do we find exhaustive efforts in vegetable life, seeing that every effort of growth rather strengthens than exhausts?

It may be said that the fruit tree which carries an unduly heavy crop of fruit must recuperate, as it has in carrying the crop suffered exhaustion. How is that proved? There is really no proof that the tree or Vine or bush has become exhausted, but the soil in which the roots range may have become so and needs replenishing with food, or time is required to enable the roots to go farther afield to find soil that is not exhausted. Oh, but it will be said, if the tree be not exhausted, how is it that it does not produce a crop of fruit the following year? That is not good argument, because it is so obvious that whilst the tree is carrying a fruit crop it could not manufacture fruit buds. It is not recuperation to say that in producing fruit buds the following year it was getting it. The tree is simply doing one thing or another because it is not possible in one season to do both.

That fact is so well recognised in fruit culture generally, that thinning down of crops to suit the capacities of the tree or Vine, and yet enable it to perform fruit bud production, is invariably practised. In this case the cultivator recognises that heavy fruit crops cannot be produced with mature fruit buds the same season. But after all, whilst vegetation so largely goes into an apparent state of rest in the autumn, whether natural, and of necessity, or whether enforced by low temperature, we see all evergreen vegetation not resting, because if no growth be apparent it is absolutely certain that all the forces of life are active. Leaves whilst existent and green must perform their respiratory functions. If these cease the leaves must soon fall. If leaves be active sap must be active, and rods must be active. This being so in the case of evergreens, where comes in that rest which is said to be thus indispensable? Has any plant physiologist ever yet given a lucid explanation of the causes which in one class of plants enforce evergreen leafage, and in another entire annual defoliation, and in the same climate, soil, and environment?

Do trees or shrubs that become defoliated in the winter really remain inactive? Does the lower atmospheric temperature congeal or harden the sap in the wood, causing it to contract or to expand, yet being absolutely torpid? and do the roots also get into the same condition? Surely whatever may be the case with the wood it is not so with the roots, for these are more or less active in winter, and we know that they exhibit in winter considerable absorbent powers. We also know that trees or shrubs apparently dormant, if lifted and replanted, will put forth fresh rootlets, evidencing activity. Even with respect to herbaceous plants that have no wood growth during winter, there is no proof that the roots are dormant or inactive. Now there is good reason to believe that, unseen, the roots are assisting to create crowns or shoots that shall produce the plant growths of the succeeding year.

The subject is an almost illimitable one, and needs to be approached with very open minds and an entire absence of egotism. Knowledge, based on generally received ideas, may after all be very far from exact. Probably there is nothing in gardening of greater interest than is found in plant physiology, not least for the reason that even yet there seems to be so much that remains unknown or unexplained.—A. D.

The Bondage of the N.C.S.

Is the National Chrysanthemum Society the slave of the Aquarium authorities? This is a pointed question, that every member of the N.C.S. should ask himself. "A. D." (page 503) hits in terse terms the keynote of the situation, and I have for some time past attempted to show in Committee that we are under the thraldom he indicates.

It would be well if every member would ask himself whether the Society, as now constituted, is holding its own in the furtherance of its objects, as the premier Chrysanthemum Society, against the rapid strides and successes gained by several provincial centres; also, whether the 700 or 800 members of the N.C.S., who are working so unselfishly and zealously for the cause of the Chrysanthemum, are reaping anything like the reward for their labours that they ought to receive, and which they would receive were they not fettered hand and foot by the present position of affairs. By usage and custom for several years past the Society seems to have parted with its original birthright – independence; in exchange for a mere cover, in which to display the productions of exhibitors.

After the many pointed remarks made at the Jubilee dinner (1896) at the Hotel Metropole, by several gentlemen who were present, and deeply interested in both the Society and the culture of the Chrysanthemum, several of the executive felt that it was time to face this matter boldly, and as a matter of duty. Mr. Bevan, the Chairman of the Floral Committee, and several others who were loyal to the object, proceeded to try and see if it was possible to make preparations for a change.

Printed circulars were sent to the thirty-six members constituting the General Committee, setting forth the objects of the proposed meeting. Most of the members of this Committee responded to the invitation, and a long and fair discussion ensued; but as soon as affairs were turning to a practical issue, and apparently going against the Aquarium Company, there was shown on the part of some of the higher officials a decided disinclination to further the objects of the meeting.

The Aquarium authorities were extolled for the good they were doing for the Society, and the members present were told that if the exhibition was taken away from its present home, the said officials would each of them withdraw their services from the Society.

It was also stated that if we left the Aquarium, the Directors of the Company would institute an exhibition of their own against us. The amount of subscription given to the Society by the Company was held out to us as a great blessing. The persuasive eloquence of a few exercised its influence over some others in opposition to the existing state of things. Two evenings were consequently spent in fruitless discussion, finally ending in a complete farce. Those who took a prominent part for the removal of the show felt that time and money had been wasted, and they are yet regarded by their opponents as cantankerous obstructionists to the progress of the Society, whereas they are as earnestly desirous of extending its influence and increasing its power as the most pronounced aquariumists can possibly be.

Let us look into matters fairly and dispassionately. Turning to the financial statement for 1896 I find that prizes and medals to the amount of £839 10s. were paid as follows:—

	£	s.	d.
September show	20	7	6
October	40	15	0
November 1st	464	13	6
November 2nd	155	10	0
December	54	13	6
Medals (all shows)	103	10	6
Total	£839	10	0

On the other side I find that the Royal Aquarium Company gave towards the working expenses—

	£	s.	d.
October show	75	0	0
November	175	0	0
December	50	0	0
Total	£300	0	0

It would appear from this that the Society received no support from

the Aquarium Company towards the September exhibition, though the gate money went to them as usual.

On the October meeting, with the exception of the medals awarded, the value of which I am unable to separately define, the Society appears to have been the gainer of £34 5s., the difference between the prizes paid and amount received from the Company towards that exhibition. But for the two November meetings (four days) the Society paid away £620 3s. 6d., or £445 3s. 6d. more than the amount received from the Aquarium Company. On the occasion of the December Show the Society paid in prizes £4 13s. 6d. more than was received. This refers only to prize money and not to the working expenses.

On the year's working as shown by the balance-sheet, there was a turnover of nearly £1650, while the Aquarium Company is only shown to have contributed £300 towards the work of administering that heavy amount, unless I am allowed to add what I find in the report that they "increased their special donation to the Jubilee fund from £75 to £100."

There is one thing done by the enterprising Company which, to my way of thinking, was not very commendable—namely, that when the Directors of the Aquarium Company discovered that the Society was compelled to give admission tickets in return for subscriptions received towards the special Jubilee fund, they demanded a commission on the amount collected, and £19 13s. 4d. stands in the balance-sheet as having been paid to them as a commission on Jubilee subscriptions. Fellow workers, think of this! Does it not rather take the gilt off the "special donation" referred to?

Three or four hundred pounds may appear a large sum on the face; but when this amount is granted the grantees have no further trouble or toil. They simply pocket the gate money, the amount of which must be very considerable.

As business men it is no doubt the duty of the Directors to earn the best dividends they can, and they very properly (from their point of view) make the best of the N.C.S., but in my opinion, and in the opinion of many others, our National Society should occupy a much higher *status* than that of a feeder, as in this case.

The N.C.S. does the work, pays for all labour, printing, stationary, clerical assistance, and everything else that is necessary for producing and maintaining the show, so that if the Aquarium authorities were to institute for themselves a series of exhibitions as held last year, instead of having to provide the amount quoted from the balance sheet above, they would find that it would cost them four or five times the amount as paid by the Society—viz., £1600.

Greater London contains a larger population than the whole of Scotland, but we read of some 40,000 persons attending the recent Edinburgh exhibition, and of the gate money amounting to £1000. Is the income of the N.C.S. from visitors to its shows increasing proportionately; if not, why not? if it is, where goes the money? After twenty years the Society has a reserve fund of only £101 18s. 2d.

Several other provincial towns take surprisingly large amounts as gate money, and it is not unreasonable to surmise from the crowds who visit the Aquarium on our exhibition days that the Company must realise a very large sum through the kind agency of the N.C.S., and by the efforts of those who toil on behalf of the Chrysanthemum, and who desire to see our "National" Society stand in a free and independent position worthy of its name.

No doubt a good deal might be endured if the Society were granted the convenience and accommodation desired, or even if the Company regarded it as worthy of the first consideration on their exhibition days. Instead of this we have to put up with any part of the building; bad light, no attempt made to separate the public from the judges while the awards are being made, and if refreshments are needed by the numerous members and friends, who are principally gardeners, many of whom have travelled a long distance, no distinction is made, but the fashionable West-End lounge prices are charged to all alike.

Remonstrance appears to be of no avail; as an instance, we were recently deprived of a portion of the ground floor for staging purposes. A protest from the Committee was sent to the Company. The answer that came back may be interpreted thus:—"We have the power to prevent you from using the body of the hall on this occasion, and we do not intend to let you have it for your next exhibition." So verily we are slaves to the Aquarium Company—a fact to which some of the principal officials leading the Society appear to be blind—and not infrequently use their persuasive eloquence in further fettering the Society to its present incongruous abode.—J. W. MOORMAN.

P.S.—Since writing to you on the subject of the N.C.S., the Journal is to hand, bringing a reply from "One of the Executive" to "A. D." I also have been one of the executive for a few years past, and am reluctantly obliged to write in an opposite strain to my colleague, whoever he may be.

He says the "public appreciation" of the November show is "demonstrated" by the thousands who visit the place. Nothing of the kind. It is rather the enthusiasm engendered amongst growers, showing the popularity of the flower, with the chance of meeting old friends. This has more to do with bringing them there than anything else.

His praise of the arrangements being both "desirable and appreciative," and his boldness, not to say audacity, in favourably comparing the show with the large Temple exhibition of the R.H.S., which is held under canvas, is ludicrous, for there can be no proper comparison.

The exhibits of the N.C.S. are from necessity so split up in various parts of the building that a crowd of persons go away without seeing half the show. Great credit is due to the superintendent, Mr. R. Dean, in making the best there is to be made of the space at his disposal, and were it not for his extended practical experience in matters of arrangement, I fear all would be confusion worse confounded.

The same number and quality of blooms staged in a suitable building would not deprive the "popular element" of its "annual display," but enhance its value in preserving the flowers and giving effect a thousandfold.

"One of the Executive," after his attempt in lauding the "advantages" obtained by holding the exhibition at the Royal Aquarium, confesses that "the members of the executive are fully aware of certain disadvantages." There are many disadvantages, and the only prominent so-called "advantage" is the contributions from the Directors in lieu of the gate money, which would otherwise go into the coffers of the Society instead of swelling the dividends of the Company.

As to "labour,' "difficulty," and "anxiety," we have plenty now. The Secretary told us as recently as the annual dinner that the "difficulties," "anxiety," and "amount of labour" were so great, that it became to him a most serious matter.

The printed balance-sheets are the best proof of the heavy expenses now annually incurred. Edinburgh this year realised £1000 for gate money alone on three days only. The Aquarium authorities had the privilege of thirteen days' takings at the doors last year, spread over four separate exhibitions, and yet this is regarded by "One of the Executive" to be to the advantage of the "National."—J. W. M.

THE N.C.S. AND THE ROYAL AQUARIUM.

To state as "A. D." does, that the National Chrysanthemum Society is the slave of the authorities of the Royal Aquarium, we may regard as a figure of speech. He neither knows nor can know anything of the arrangements made between the Society and the Royal Aquarium, and without this knowledge any statement he may make in reference thereto must savour of the romantic. He might just as well state that the Royal Horticultural Society is the slave of the London Scottish Rifle Volunteers or the Temple.

There are always two sides to a bargain of this kind, and the N.C.S. can be safely trusted to look after its own interests, which it does do. The co-operation of the Society with the Royal Aquarium has resulted in the Society prospering beyond the most sanguine expectations of its warmest friends. It is now far away the strongest, most influential and widely known of all the special floricultural societies, and every week witnesses accessions to its members.

It is enabled to hold four highly attractive exhibitions annually; to broaden the area of its practical work, especially in the direction of extending a knowledge of and the culture of the Chrysanthemum; it attracts to the Aquarium yearly thousands of persons to see the Chrysanthemum in its fullest glory and beauty during the last four months of the year; new interests in it are aroused, and new devotees worship at its shrine in consequence; the very centre of London has opportunities for witnessing magnificent displays of the golden flower provided by the Society, without the N.C.S. in any way trenching upon the work done on the circumference by the circle of metropolitan societies affiliated to it; it is enabled to prepare and publish editions of descriptive and classified catalogues, which are widely distributed and accepted as standard and authoritative works of reference in all parts of the world; it is able to pay its prize money promptly and fully and satisfy all demands made upon it; it can extend a helping hand to the many societies affiliated to it in all parts of the country and abroad, and to many who are not in close union with it; it is gradually building up a reserve fund; and all this while maintaining an entirely independent autonomy as the best administered special floricultural society.

The Society is able to do all this because of the co-operation and valuable assistance furnished by the Directors of the Royal Aquarium. I alone perhaps know the full extent of the valuable assistance, directly and indirectly contributed. I unhesitatingly assert that all this is largely due to the fact that the Royal Aquarium is the home of the exhibitions of the N.C.S. The arrangement is mutual, friendly, just, and honourable; and it has existed for a period of twenty-one years.

I have had experience of most of the large flower shows held in London during the past forty years. I know the enormous labour they entail; their overwhelming details; their appalling expenses; the anxieties and uncertainties inevitable to them; their load of responsibilities; and the disheartening dread of failure. I have seen some launched under apparently the most auspicious promise become financial wrecks. On no consideration could I be prevailed upon to assist in carrying out a large flower show in London if I had to bear a share of any financial responsibility. If "A. D." or anyone else could have placed in their hands the details of the actual cost of such an exhibition as that held at the Royal Aquarium on November 9th last, and see that all dependence for any return of the same was on the uncertain takings at the gates, they would then understand why I would decline entering upon any of the risks they appear to desire the N.C.S. should undertake.—RICHARD DEAN, *Secretary, National Chrysanthemum Society.*

[This and Mr. Moorman's letter above are two of the strongest communications from the respective standpoints of the writers which have yet appeared, and the excellent tone, with the convictions pervading them, undoubtedly adds weight to both. Let their supporters follow the examples

set of keeping personalities in the background, and discuss the subject on its merits, then will their letters be inserted. We do not wish to publish anything that will jeopardise personal friendship.]

SEEING that everyone knows who pens the signature "A. D.," just as well as if blazoned in full length, I can easily conceive how the individual who signs himself in last week's issue "One of the Executive" must have chuckled over the way in which he was girding at me, and yet keeping his own anonimity. It is such fun to sit behind a wall and in safety fling stones at known passers-by. However, let it pass, and the writer be as happy as he deserves.

I wrote on the subject of the Chrysanthemum Show and the Aquarium because of, first, what I have seen there, and secondly, what I have read of grand show successes elsewhere. When we read of what is done without the aid of variety shows and other "attractions," I ask, is it not a disgrace to the N.C.S. and London that it should be unable to run its shows in a building where the effect of all the splendid products sent cannot be fully seen and pleasingly enjoyed? Would any other Chrysanthemum society in the kingdom endure all the noise, hubbub, darkness, discord, and inconveniences that the N.C.S. has to endure? Certainly not one. When members of the executive bitterly complain as they have done, no wonder an evident advocate for the R.A. is nasty with me.

Did I feel alone, and write for myself, it would be of no consequence, but the sting of the matter lies in the fact that what I think everybody whose opinion is worth anything thinks the same. Will my critic tell your readers how much (first) the R.A. Directors contribute towards the November show, and then (second) tell them how many thousands during the three days the show is open go to the R.A. to see the Chrysanthemums solely? Is it not under the mark to put the number at from 12,000 to 15,000? And is not that relative to London but a small number compared with the attendance seen at Liverpool, Hull, Birmingham, Edinburgh, and other towns? Without doubt the November show brings some £600 to £800 into the R.A. treasury.

When we see cattle, dog, bicycle, and other specialist shows at the Agricultural Hall crowded and huge successes, why not a great Chrysanthemum show also, where a grand effect could be obtained? There is ample light, no noise; and the show would not be so much divided that half of the visitors never find the major portion of it.—A. D.

IF there are no better arguments to be adduced in favour of the Royal Aquarium as the place for the shows of the N.C.S. than those given in

Photo by Mr. A. Bilcliffe, Redhill.

FIG. 81.—CHRYSANTHEMUM JULIA SCARAMANGA.

the letter of "One of the Executive" (p. 531), then, surely, the verdict must go to "A. D."

"One of the Executive" tells us that "the public like the arrangement of the exhibits." Save upon the principle of the "Three Tailors of Tooley Street," I am at a loss to understand your correspondent's qualification for speaking for the public. My own experience is that the immense majority of people, exhibitors and the general public, strongly condemn an arrangement which deprives the show entirely of all general effect, and consigns the choicest exhibits to positions where want of sufficient light renders it impossible that the judging can take place under conditions fair to the exhibitor. How can "colour" and "freshness" be adequately measured in the dark dens of the Aquarium galleries?

And we have been going from bad to worse. A few years ago a major portion of the exhibition was arranged in the body of the hall, and something of a general effect was thereby secured. Now all this is changed, and permanent shows occupy the space once devoted to the flowers.

There has, in my opinion, been but one argument in favour of the Royal Aquarium, and that has been the difficulty of naming an alternative position, but if things go on in the future as they have recently gone on in the past, even this argument will cease to be sufficient; it will be merged in the general conclusion that if better cannot be done, it will be preferable that there should be no show at all.

On the other aspect of the Aquarium surroundings I will not enlarge. There will always be persons who like what others do not, so it must come back to the old *de gustibus non est disputandum;* but I must protest against any analogy being suggested between the "music and singing" permitted by provincial societies and the "music-hall assistance" furnished by the Royal Aquarium. I thank "A. D." for his "annual growl."—SIGMA.

IT is usual at this time of the year to find "A. D." spoiling paper over the shows of the N.C.S. Of course, they are not pleasing to himself; but all the same, it seems absurd for him and others to rail at the executive for holding the shows in the Aquarium without giving the slightest information or even a suggestion as to where they can be better accommodated. It is easy to grumble, and those who indulge in that ancient exercise should surely try to suggest remedies for what they assail. Do critics like easy ways? No great intellectual effort is displayed in naming such places as Hull, Edinburgh, and Birmingham; but where in London can "A. D." find such buildings available as in the places named?

Turning to "E. D. S.," if he were to obtain information about the financial situation of the N.C.S. he would probably find some reason for cutting up the exhibits, and arranging some on the ground floor and others elsewhere. He evidently does not know the exact position of the Society, but simply follows others in the easy old way of grumbling. As a Chrysanthemum lover he is deserving of attention; but as a helper out of what he conceives to be a wrong position lamentably fails.

We all know how the exhibits were cut up at the last show, and how bad the light was in certain portions of the building; what we want to know is how to remedy existing grievances. Give us some practical suggestions, or sensible criticisms tempered with feasible argument and sound advice; that is surely what most readers look for, not carping reflections, but so far look in vain under the signatures above cited.—AN IMPARTIAL OBSERVER.

[A very close "observer" too in the Chrysanthemum world, but evidently cannot see any way of evading the "grievances" which he admits. Others must try and solve the problem—a task, we suspect, by no means easy of accomplishment. Both sides shall have equal opportunities for fair discussion, devoid of unpleasant personal allusions. These are the greatest of hindrances to the attainment of the legitimate objects that controversalists have in view.]

HULL AND EAST RIDING CHRYSANTHEMUM SOCIETY.

THE Committee of this Society met on 30th ult., and fixed Wednesday and Thursday, November 16th and 17th, as the dates of the 1898 show. It was resolved unanimously to invite Messrs. Geo. Gordon, E. Molyneux, J. W. Moorman, and J. Wright to be the judges. The amount awarded in prizes at the recent show, it was stated, was £34 more than in 1896, and general satisfaction was expressed at the excellence of the exhibits. The Treasurer's statement had not yet been made up, but it was not expected that any profit would be made; the Society, having a good reserve fund, prefers to increase the value of the prizes instead of adding to the funds. About £230 had been awarded in prizes, exclusive of challenge plates, value 40 guineas.

The Society is much handicapped for want of a sufficiently large building in which to hold the show, and in consequence of the dangerously crowded state of the hall in recent years the Committee decided to raise the price of admission on the concluding evening. Notwithstanding this drawback about 9000 persons visited the show, and the receipts were above the average.

YELLOW CHARLES DAVIS.

YOUR correspondent, "R. M." (page 532), states that he has a sport from Charles Davis of a soft yellow colour, and asks if anyone has seen anything similar to it. I have had several yellow Charles Davis this year, but I did not regard them as sports. Several of my gardening friends, on seeing the blooms, exclaimed, "What 'yellow' have you there?" The variety in question frequently comes yellow when the buds are taken too early. If "R. M." had selected a bud from the next growth I fancy there would not have been much yellow about it. I have also had pure white blooms of Viviand Morel.—J. FOLKARD, *Sand Hutton, York.*

IT may interest "R. M." to know that when Charles Davis received its first certificate it was for soft yellow blooms, and not the bronzy buff shade so much appreciated at the present time. It is quite easy to obtain blooms of the colour described by "R. M." of this variety; in fact, he makes known the *modus operandi* when he says the flower appeared on the plant not more than 3 feet high and from the first crown bud. I write this note for the benefit of "R. M.," that he may not be disappointed eventually after taking the trouble to fix the so-called sport and growing the plants afterwards.—E. M.

JULIA SCARAMANGA.

THOUGH this Chrysanthemum was seen once or twice in the season of 1897, it was not until this autumn that it attained to any peculiar prominence. At several shows it has had a place in the stands, and has made itself a very great favourite, eliciting much admiration from competent critics. It was shown at the Drill Hall on November 23rd by Mr. W. Wells, Earlswood, receiving an award of merit, and was also staged by the same grower at the N.C.S. on the 22nd ult., when a first-class certificate was given. By the courtesy of Mr. Wells, who placed a photograph at our disposal, we are able to give an illustration (fig. 81) of the variety, which was raised by Mr. Silsbury as a seedling from Viviand Morel, and is one of the best growers in cultivation. As may be seen, it builds up a fine flower, of which the long, narrow, curling, twisting, and intermingling florets are pale rosy bronze, inclining to terra-cotta in colour. If it maintains its promise it will become an extremely popular variety.

CHRYSANTHEMUMS AT TWERTON-ON-AVON.

AMONG the hosts of Chrysanthemums cultivated there are not many varieties, even at the present day, which suit the grower of cut flowers for market in every respect, and it is especially at Christmas time, when the demand is the greatest and the supply the least satisfactory.

As a rule, in this neighbourhood at least, all the best free-flowering varieties are over, and this year, owing to the continuance of remarkably mild weather, they are earlier than usual; but Mr. M. Coombe, Twerton-on-Avon, Bath, has managed by a little scheming to have a grand lot, which will just be in at the right time, and I have no doubt he will reap a rich harvest. His nursery is considerably elevated, and consequently comparatively cool for the locality. Besides this natural advantage, his houses have their sides and ends made up entirely with moveable boards, so that in a few minutes he can take down or put up a considerable portion of them, according to the state of wind and weather; and as we have had no frosts to hurt anything till a day or two ago the plants have been very much exposed to the elements, both by night and day, nearly all the time. The result is a batch of Niveus, not yet fully expanded, that is worth going some miles to see.

Nothing can beat Niveus for Christmas if you can keep it, and Mr. Coombe has evidently solved the problem. A good few W. H. Lincoln are grown, and a small quantity of Lord Brooke, but Niveus is there in thousands. Another thing I noticed, there is no leaf rust. I had begun to think Niveus and leaf rust were inseparable, but now I know it is not so.

I do not know how it is in other places, but in Bath if you have a dozen bunches to sell nine of them must be white and one or two yellow. Other colours are not wanted in quantity. You may sell an odd bunch of a good bronze, but as a rule you may keep the darker varieties and undecided shades for your own private use.—WM. TAYLOR.

STAGING CHRYSANTHEMUMS AT SHOWS.

"SADOC" (page 532) is quite right in supposing that I had not seen the report of the Edinburgh Show when I penned my previous article on this subject (page 503), but wrong in thinking a perusal of that report would have caused me to hesitate before writing it. I know that in previous years good prizes have been offered at Edinburgh and other places for flowers shown on long stems, and that those classes have been fairly well filled by growers from a distance.

Let me, however, point out that there is a wide difference between giving a very valuable prize in one class for flowers staged with long stems and stipulating that the flowers shown in all classes shall be set up in that way. Provided that sufficiently large prizes can be offered to compensate growers from a distance taking the large amount of extra trouble entailed, they will always be ready to put in an appearance; but few, if any, societies can afford to do this, and I have no hesitation in repeating, that if any society is bold enough to try the experiment, it will have to depend upon local exhibits, except in those classes in which they offer very substantial prizes.

At one important show two or three years ago I counted twenty-five lots of Japanese in one class—that for twenty-four distinct varieties. The first prize was £10. Now let me ask "Sadoc" if he honestly thinks as many fine exhibits would have been set up in that class if the schedule had required the flowers to be shown on long stems, the amount of prize money offered and the number of varieties required being the same? If he can answer yes, then his argument may be a strong one; if he cannot, then it falls to the ground. I confess that I like to see blooms staged with long stems, yet I think the drawbacks to the general adoption of that plan are too great to be overcome under present circumstances, without lowering the high standard of excellence at present maintained at the great shows.—OLD EXHIBITOR.

Naming Chrysanthemums at Shows.

It is time Chrysanthemum societies insisted upon having the names of the blooms printed or written clearly, and placed in such a manner that officials and visitors can see at a glance what the names are intended to represent. Too often the wrong name is placed against certain blooms, whether designedly or not I cannot say, but occasionally I am compelled to act upon the assumption tbat they are so misnamed to be misleading for an obvious purpose.

However, this latter is not the object for which I write this note, as in other ways I can deal witb wilful misrepresentation. Some societies stipulate that the names of cut blooms shall be written on labels supplied by the society. Such a plan renders the naming of the blooms a uniforu arrangement. Too often we see the names scratched on two half sheets of note paper in pencil, and very unintelligible, too, is the writing. These said sheets of paper are laid on the stand, and more often they are found on the floor than anywhere else. When such names are badly written, and only partly written—for instance, Alcester for Lord Alcester—it is most difficult for visitors to copy correctly the names for future guidance in forming a collection, especially if they are purely beginners.

No method of naming cut blooms on stands that I have seen is so good as that adopted by Mr. Fowler, Taunton. He has affixed to the front of his stand an arrangement of wire, which has space for three stout cards, on which the name of each bloom in the row above is plainly printed. Visitors and all concerned can see at a glance what each bloom is, and I have never seen one wrongly named on his stands. Surely what one man can do others migbt copy in some form, even if they do not to the extent of printing the names. Cards with the name plainly written would suffice. Small square envelopes, affixed to the stand by the adhesive flap, answer well, as abundance of space is available on each for the three names.

Committees of all societies, where the exhibitors are lax in naming, would be doing a public good if they strongly notified in their schedule that all blooms must be distinctly named. It is not only a distinct inconvenience to visitors on the show day that bad naming is reprehensible, but there it does not end. Visitors are charmed with certain blooms in a stand, take the naue there given, and order plants from some Chrysanthemum specialist, who naturally sends the variety named. After ten months labour and attention have been expended, the variety turns out to be something else. Of course the vendor is blamed for not sending the variety true to name. Thus wrong naming is a complete nuisance to all concerned. Some exhibitors do not even take the trouble to name their blooms at all. A remedy is easily found for such omissions.—E. M.

Chrysanthemum Notes.

Now that the exhibition season has run its course, growers must needs settle down to the preliminaries of another year—resolutions made respecting future action, selections for various purposes, solicitations for advice from specialists, exchange of cuttings from friends, as well as tbe yearly purchases in up-to-date novelties from the nurseries.

Among the amateur portion of the Journal readers, Mr. Molyneux's always welcome selections of the best exhibition sorts will be anticipated, and on their behalf might I be allowed to ask your able correspondent to give us his notes early, so that growers who rely on the selection so generously given during the past few seasons may be able to complete their list and order their new additions in good time? Mr. Molyneux has already shown by his notes on judging groups and plants that his interest in Chrysanthemums and growers does not abate. I fully endorse his remarks respecting the prominent feature groups convey in the exhibition hall, and agree with him that they add as much, if not more, to the general beauty of a show than all the cut blooms. This is a bold assertion to make before so vast a number of cut-bloom exhibitors; but it is, nevertheless, a fact, for what comparison would there be in an exhibition without groups, and one with the centre or sides of a hall fully occupied? I repeat that grouping, when artistically carried out, is a finer feature, though not so generally popular a one as the cut blooms.

With all the wealth of variety, both in old and new kinds, it seems strange that societies follow so strictly on orthodox lines, giving prizes for mixed collections, varying only in numbers. With such a really first-rate assortment of whites and yellows—in fact these colours are much more numerous than any others—how easy it would be to vary the display by having classes for, say, twelve white, in not less than six distinct sorts, and the same in yellow shades. At provincial shows, no doubt, there is a difficulty in instituting new classes such as this for want of funds, but such is not always the case. At some of the leading shows there are classes for the reflexed section, one that seldom finds good support, and is the least effective of any. Were these displaced by a similar number of yellow or white varieties, without any material difference made in the value of the prizes, a much more interesting contest would result. The classes for six of one sort are useful, but they would, I think, be more so were a larger selection of sorts allowed.

Single varieties obtain scant recognition from exhibitors or societies, and although their numbers are added to yearly by new seedlings, they are not receiving the attention from growers their merits deserve. Tbey find a place in some of the prizewinning groups, and lend a lightness and finish to the front, where in small pots they are so much needed. From among the large numbers of sorts the dainty Miss Rose seems the most popular at present, but even this is spoilt by being grown into large bushes.

Many of the leading varieties appearing on the show board are among the best for decorative purposes. That fine white, Mrs. H. Weeks, has been a particularly prominent one for cutting into sprays. Phœbus, another favourite of the year, too, is equally pleasing in bush form, as is also Golden Gate. In the incurved, Globe d'Or, Major Bonnaffon, and Bonnie Dundee give very fine cutting material. At the present time Cecil Wray, Niveus, Lady Lawrence, Mrs. Bruce Findlay, Florence Davis, and Amos Perry are making a good display. Plants intended for late flower are much influenced by the mild weather, Golden Gem and L. Canning with others being in a very forward state.—W. S., *Wilts.*

[Have our correspondent and Mr. Molyneux been in telepathic communication? When the former was penning his appeal the latter was probably at work on his selections. The first portion of these appears in this issue. Classes for whites, yellows, and crimson, much on the lines suggested in the third paragraph, have been instituted and were at the N.C.S. November show a distinct success; they were also particularly effective at Winchester.]

Treatment of Chrysanthemum Cuttings.

Cultivators differ in their treatment of Chrysanthemum cuttings after insertion. Some follow the generally recognised orthodox method of placing the pots containing the cuttings under hand-lights or in a frame, covering the latter with a light which can be removed entirely or opened to any extent. The same principle is followed when the cutting pots are placed in any portable box and covered with loose panes of glass. Tbe main object in these metbods is to exclude a too free circulation of air, which causes rapid evaporation from the leaves, thus preventing ready rooting. The soil, too, can be kept in a uniform condition of moisture, rendering the possibility of its becoming sour through frequent applications of water less likely to occur. When properly carried out, this is, I think, the best method to follow. It involves daily attention in wiping the glass dry, so that damping may not be caused by the accumulation of moisture upon the glass.

Another method of treatment is sometimes adopted with success. This is to place the cutting pots on the shelf of a greenhouse near the glass. I sbould hesitate to mention this method had I not seen it successfully carried out; but it was not in a large, dry, airy structure. The cuttings were lightly syringed frequently, thus preventing the atmosphere becoming unduly dry, and the leaves sbowing distress by wilting. I have tried rooting cuttings in a vinery, syringing or dewing them over every day; but though I was successful in rooting the majority, it was a rather slow process, and not equal to the more rational way of protection from free evaporation.

Short sturdy cuttings which have attained vigour by exposure to light and air are the most likely to succeed under this method, but weak or sappy cuttings may succumb. In any case there must be greater efforts made by the leaves to supply the needful circulation of sap, so that roots can be formed. Under very favourable conditions the plan is good, and when it can be carried out readily it is worthy of adoption.

Propagation by means of a little bottom heat is favoured by some. It requires considerable attention in preventing the deposition of moisture on the glass of the frame or box to such an extent as to drop into the hearts of the cuttings, causing rapid decay. When the first roots have been formed, too, the growth will rapidly extend and be weakened if air is not freely given.

Whatever method is employed it is essential that the details for carrying it out to the best advantage be studied and acted upon. Cuttings will probably root readily under the full exposure system as tbe sap becomes more active in spring, but as a rule a little confinement, so as to keep the leaves fresh, is the best incentive for quickly establishing the cuttings.—E. D. S.

Chrysanthemum Leaf Rust.

Mr. Briscoe-Ironside's interesting notes on this parasite (page 532) accord with species of Puccinia generally, the infection always ascending, the leaves first attacked not communicating the disease to those below, but above them. The lower leaves, therefore, show the most "rust," because the first and fullest developed, while on the younger leaves the specks are few, or appear so, for a time, being only less advanced. Evidently the first infested leaves were attacked when comparatively young, even the lower being blacked and destroyed before the disease was noticed. This occurs very commonly in the case of all "rusts," not a great number of disease spots appearing on the leaves in the early part of the season, hence some time must elapse before spores can be produced in such numbers as to insure general infestation.

As for the disease emanating from the roots, the idea is not by any means without precedent, for the late Mr. T. A. Knight found Pear leaf rust appear in the first leaves of seedling Pears, the parents of which had been infested, and the Rev. M. J. Berkeley also considered that Wheat might be infected with Uredo linearis by the roots. It may be possible for the pro-mycelium or first growth from the Puccinia or resting spore to enter as the rootstock sucker of the Chrysanthemum, and thus pass in the leaf into the atmosphere, there to develop the pustules, or at least one, and the spores from this seize on the other parts of the leaf and those forming above it. It is more likely, however, that the pro-mycelium produces its spores above the surface of the soil, and these infect the leaves immediately above the earth.

No doubt excessive root moisture would favour infection by inducing a softer condition of the leaf tissues, but as without eggs there are no chickens, so there cannot be any Chrysanthemum leaf rust without the pre-existence of germs. This continuation was first demonstrated or suggested by the eminent Italian naturalist, Spallanzani, in opposition to the absurd doctrine of spontaneous generation, and verified by Professor Tyndall.

The Chrysanthemum leaf rust, however, was not noticed until the spring of this year, and then on cuttings, which goes a long way to verify Mr. Briscoe-Ironside's statement of the disease coming from the soil; but no specimen of these plants was examined, and not until August, 1897, was the disease pronounced decisively in both the Old and New World. Why did not the parasite appear before if it were a widespread species?

Evolution in parasitism certainly attends the development of the "host," or rather over-cultivation. We raise, and to the highest possible degree cultivate, new varieties of particular species of plants—*e.g.*, Potatoes, Chrysanthemums, and parasites, apparently. Whatever in this may be due to cultural errors and mistakes, it is perfectly clear that the only cause of infection can come from some pre-existent germ evolved into form and possessing power capable of contending with the different circumstances, and the only way to grapple successfully with the enemy will consist in cultural selection, and striving for a race affording the largest measure of resistance. This and repression comprise the chief features of evading and preventing the spread of parasites.—G. ABBEY.

SELECT NEW CHRYSANTHEMUMS.

JAPANESE VARIETIES.

FOR the benefit of Journal readers generally, as a reminder of the good things that ought to be added to collections of the "up-to-date" cultivator, but more especially for those who have not the opportunity to judge for themselves, I present my annual list of what I term the sterling varieties of the year.

Having travelled at least 2000 miles during the first three weeks of November in visiting shows in one capacity or another, I have had favourable opportunities to see the new varieties under various conditions. The following notes were taken from personal observation, therefore should they differ somewhat from catalogue descriptions in the matter of colour, detail, and floret formation, it is because the blooms inspected did not come up to the published description of the vendors.

The complaint is fairly general this season that the number of really first-class novelties is fewer than usual. Perhaps this is accounted for by the high standard set up by critics appointed to discriminate upon the merits of the new varieties before they receive the hall mark of excellence. Unfavourable comments are frequently heard from disappointed exhibitors regarding the non-awarding of certificates for blooms thought by themselves deserving of recognition. Responsible members of committees have a public duty to perform, and generally speaking they do it fearlessly. I am distinctly in favour of withholding certificates where varieties are not an improvement upon existing ones.

I think, perhaps, if those responsible were to refuse certificates to so many of what I call mongrel-bred incurved varieties, instead of granting them, they would be upholding a desirable standard in this section. The inclusion of varieties that cannot truthfully be termed incurved is a step in the wrong direction, and one that cannot be the means of upholding a high standard in this section.

As the Japanese varieties are so much more favourably received by the public generally, I will place them first on the list.

Mrs. W. Mease.—When I say that this is a pale primrose sport from the much esteemed Madame Carnot, I need offer no apology for placing it first on the list. Last year, in the hands of Mr. Mease at Downside, it came as a root sport, and this year remained perfectly true. Those who saw the magnificent bloom in this grower's stand at the November show of the N.C.S. will not readily forget it. So good was it that it received the award as the premier Japanese bloom in the show in spite of the dozens of handsome specimens of its parent scattered over the Westminster Aquarium. The bloom in question measured 9 inches wide and 7½ inches deep. The colour is a soft shade of primrose, totally distinct from G. J. Warren, which is really a yellow-flowered variety.

Mary Molyneux.—This is from American seed and was raised by Mr. N. Molyneux, Rookesbury Park, Fareham, in 1896. It is safe to describe this variety as the finest Japanese incurved Chrysanthemum in cultivation. The florets are long, broad, and, what is important, they incurve loosely. The blooms are fully 9 inches in diameter. The colour is unique, a warm rosy peach, suffused with silver. The inside of the florets is flushed purple. As the growth is somewhat tall, and the wood brittle, when grown to produce exhibition blooms each branch must receive a separate stake as support. Almost every shoot produces a full sized bloom, whether the plants are topped or grown on the natural system.

Royal Sovereign.—Also belonging to the incurving section of Japanese, with loose florets, this makes a deep fine bloom. The orange-yellow colour is pleasing and distinct.

Ella Curtis.—The formation of the florets of this reminds one of Boule d'Or. The colour is rich golden yellow, shaded with chestnut and bronze. It is a promising variety.

Robert Powell.—An incurved Japanese, with broad florets. The colour is terra-cotta, shaded with bronze, lined and flushed with purple.

Lady Ridgway.—I became acquainted with this several years since, having received it from the raiser in the Isle of Man. It also belongs to the incurved type. The florets are broad, building up a massive flower, telling well on an exhibition stand when in good condition. The colour is somewhat difficult to describe. The base is amber, with a purple suffusion, each floret tipped with gold when young. The inside of the florets terra-cotta.

Madame Philippe Rivoire.—One may best describe this as a much magnified Souvenir de Petite Amie.

Madame G. Bruant.—Blush white, suffused purple, is the colour of this variety. The florets are of medium width, irregularly incurving. A flower was depicted on page 411 of the *Journal of Horticulture* for October 25th.

Royal Standard.—Perhaps the deepest of the crimson varieties. The florets are broad and flat. A little more depth would make this one of the most striking varieties in cultivation.

Werther.—This is an improvement on Lady Randolph Churchill, not only in colour, but in size.

George Foster.—An English-raised seedling of the incurved Japanese type. It is handsome, though the florets are somewhat irregular. The colour is pure yellow. (See illustration in issue of November 25th, page 507.)

President Nonin.—The colour of this, apricot yellow, should insure it careful attention. The florets have a long base, while the points widen out and incurve loosely.

Admiral Ito.—Very promising is this pure yellow variety. The florets are quite erect, fluted and twisted at the point.

Miss Hunter Little.—The narrow florets, twisted at the points, of this variety forcibly recall Criterion. The rich yellow colour is pleasing.

Lenaivee.—Although granted a first-class certificate by the N.C.S., this is, in my opinion, hardly up to the standard in point of quality. The type of bloom is moderate. An exhibitor would style this variety "too thin." The florets are narrow, incurving loosely. The colour, soft pink or peach, is pleasing.

Mdlle. Laurence Zédé.—This is a closely incurving Japanese with narrow florets. The colour, rosy plum, is distinct.

Surprise.—The carmine crimson colour of the flat florets, with the dwarf habit, should make this a desirable decorative variety.

Lovely.—Coming from America, this is an incurved Japanese variety of the palest yellow. The flower is deep and good.

Mrs. F. A. Bevan.—The colour of this American variety is flesh pink. The florets are of medium width, curling slightly at the tip. It is distinct and good.

Mrs. G. Carpenter.—In formation of floret this resembles Viviand Morel, but it is larger in all respects. The colour, rosy mauve with silver reverse, is distinct.

Master H. Tucker.—Young blooms of this incurve roughly, while later ones reflex. In the latter stage it is perhaps preferable, as the colour is more striking. The inner side of the petals is rich dark red, reverse bronze.

Georgina Pitcher.—This desirable variety has long, drooping, curling and winding florets, lemon in colour.

Mrs. John Ritson.—Viviand Morel is the parent of this variety. The colour is ivory white.

Moor Park.—A seedling from E. Molyneux, raised by Mr. Haggart, this belongs to the incurved section of Japanese. The colour is golden bronze on the reverse, and terra cotta on the inner side.

Madame Louise Remy.—A pure white sport from Mrs. C. H. Payne, and, like its parent, a monster.

The following varieties I noted last year are deserving of extended attention.

Australian Gold.—I have been disappointed with this, having seen only one perfect bloom. It was indeed charming, fully 8 inches in diameter, and 6 inches deep. It made as splendid a specimen of a Japanese Chrysanthemum as anyone could wish to see. The florets were semi-drooping, while the colour was of a pleasing rich golden yellow.

Mrs. H. Weeks.—This has well borne out the high opinion previously formed of it. It builds up a massive bloom of the finest quality

Mrs. J. Lewis.—About the end of October and early in November this has produced some enormous blooms. It is one of the best of white flowering varieties, and being dwarf in growth it is all the more desirable.

Australie.—The colour of this not having been consistent, the variety has been somewhat disappointing.

Mrs. C. Blick.—Instead of the dull white it possessed last year in colour, it is pure white, making up into a full massive bloom admired by all, and has improved on acquaintance.

Modesto.—Perhaps the stock was somewhat weakened by propagation, but certainly this has not maintained its promise. Amongst yellows it is pre-eminent.

Amiral Avellan.—Though unique in colouring, the short florets of this somewhat detract from its appearance. It was largely grown judging from the number of blooms met with at the shows.

Lady Hanham.—This has worthily won its way to the front. The colour, golden rosy cerise, is pleasing. As is well known, it is a sport from Charles Davis, itself a sport from Viviand Morel.

James Bidencope.—With its pleasing colour of rich rosy amaranth with silvery reverse, this makes itself distinctly seen where staged. —EDWIN MOLYNEUX.

(To be continued.)

ROYAL AQUARIUM SHOW.—DECEMBER 7TH AND 8TH.

THE last Show of the year of the National Chrysanthemum Society was held on the above dates. Naturally it was not very large, but quality made up for quantity throughout. As a matter of fact, it was one of the best late exhibitions we have seen. The arrangements, too, were highly creditable, and the plan of turning the visitors out during the judging is most commendable, and should be adopted permanently.

There were four entries in the class for twenty-four Japanese, Mr. W. Messenger, gardener to C. H. Berners, Esq., Woolverstone Park, Ipswich, taking the leading position with a capital stand. The varieties

represented were Madame Carnot, E. D. Smith, Golden Gate, Col. T. C. Bourne, Niveus, Beauty of Castlewood, C. W. Richardson, Graphic, Mutual Friend, Rose Wynne, Silver King, Mdlle. M. A. de Galbert, Miss M. Blenkiron, Simplicity, Etoile de Lyon, G. C. Schwabe, and Ialine. Mr. W. Slogrove, gardener to Mrs. Crawford, Gatton Cottage, Reigate, was a creditable second, and Mr. N. Davis, Framfield, third.

In the class for twelve incurved, Mr. W. Neville, gardener to F. W. Flight, Esq., Twyford, was a very decided first, his blooms being beautifully finished, and of fair average size. The varieties were Ma Perfection, Miss Dorothy Foster, Bonnie Dundee, The Egyptian, Major Bonnaffon, R. C. Kingston, and John Fulford. Mr. T. Robinson, gardener to W. Laurence, Esq., Hollingbourne, Kent, coming second; and Mr. A. Sturt, gardener to N. L. Cohen, Esq., Englefield Green, third. There were four exhibitors in the class, but the competition was not very keen. Messrs. R. Bassil, gardener to D. H. Evans, Esq., Pangbourne; W. Neville, and T. Robinson took the prizes in the order named for six incurved, distinct.

For twelve Japanese, distinct, Mr. W. Messenger went to the front with a very even stand of capital flowers. The varieties were practically the same as in this exhibitor's stand of twenty-four. Mr. R. Kenyon, gardener to A. F. Hills, Esq., Woodford, was second, and Mr. W. Slogrove third. For six Japanese, distinct, Mr. C. Cox, gardener to J. Trotter, Esq., Hertford, was first, Mr. R. Kenyon second, and Mr. A. Sturt third. Mr. F. Bush, gardener to W. T. Lister, Esq., Totteridge, secured the first prize, offered by C. W. Richardson, Esq., for twelve Japanese, distinct, and was the only exhibitor.

Bunches of both large and small flowered single Chrysanthemums were staged in a few classes, and several blooms of very good quality were observed. The prizewinners included Messrs. G. W. Forbes, gardener to Madame Nicols, Surbiton; A. Felgate, gardener to Elizabeth, Duchess of Wellington, Walton-on-Thames; W. C. Pagram, gardener to J. Courtenay, Esq., Weybridge; and A. Felgate, jun., Walton-on-Thames.

Of the four competitors who staged in the class for six bunches of Japanese, distinct varieties, Mr. N. Davis was placed first, Mr. W. Slogrove second, and Mr. R. Bassil third. Mr. W. Howe, gardener to H. Tate, Esq., Streatham, was first for twelve bunches of Japanese with a charming exhibit. The second position was accorded to Mr. N. Davis. The last named was the only exhibitor of twenty-four bunches of Japanese, and was adjudged the premier award.

Mr. A. Newell, gardener to Sir Edwin Saunders, Fairlawn, Wimbledon Common, received the first prize for a basket of autumn berries and foliage with a handsome arrangement. Miss C. B. Cole, Feltham, was second; and Mr. W. Taylor, gardener to C. Bayer, Esq., Forest Hill, third. So strong was this class that extra prizes were awarded to Miss Easterbrook, Fawkham; Mr. J. Mansey, Islington; and Miss R. Debenham, St. Albans. Mr. D. B. Crane, Highgate, was the only exhibitor of one large vase of Chrysanthemums, and took the first prize.

In addition to the classes for Chrysanthemums there were others for Cyclamens, Primulas, table of miscellaneous plants and floral decorations. In each of these there were one or more exhibits, and some fine specimens of culture were noticed here and there, Mr. W. Mease's double Primulas being magnificent.

The miscellaneous exhibits, shown "not for competition," were diversified, numerous, and of very good quality. Mr. W. Wells, Earlswood, had a large bank of Chrysanthemums, in the front of which was an arrangement of cork, with Ferns and water. Messrs. H. Cannell & Sons, Swanley, sent some magnificent vegetables, comprising Onions Cannell's Ailsa Craig, Cranston's Excelsior, and Reading Improved, with Cannell's Defiance Cabbage and splendid White Model Turnip, as well as Zonal Pelargoniums. Mr. J. R. Tranter, Henley-on-Thames, sent a dozen blooms of Chrysanthemum Mrs. J. R. Tranter.

Mr. R. Bassil exhibited a capital collection of salads, such as Lettuces, Tomatoes, Onions, Endive, Radishes, Celery, and others. Mr. W. Taylor sent a grand collection of Grapes, including handsome bunches of Lady Downe's, Muscat of Alexandria, Gros Colman, Alicante, and Trebbiano. Mr. W. J. Godfrey, Exmouth, staged an extensive collection of cut blooms, mainly consisting of varieties suitable for early December and Christmas cutting. Amongst the best may be named Queen of Pinks, Augustus, W. S. Davis, H. W. Reiman, Mrs. H. Robinson, Jeannie Falconer, and Georgina Pitcher.

Mr. W. Robinson sent a good collection of yellow varieties, while Mr. Neville exhibited some charming incurved in variety. Mr. J. R. Chard, Stoke Newington, sent a table of decorations in which Chrysanthemums were most conspicuous. Mr. H. J. Jones, Lewisham, made an imposing display with cut blooms on boards and in vases. Though the flowers were not large a charming effect was secured by careful arrangement. Mr. R. Owen, Maidenhead, was represented by a collection of cut blooms, amongst which were many seedlings of good promise, as well as several of the standard varieties.

LAYERING VINES.

A CORRESPONDENT having sought further information on the layering of Vines as practised by Mr. W. Miller, at Combe Abbey, and especially on the object of covering the layered parts with moss, we have pleasure in supplying it, on the best authority, as follows:—

The first time I adopted this "dodge" was in 1878 under a pressure of circumstances, which I need not here explain. To this end a young cane is grown the previous year. If it is in a vertical position it must be brought down and placed in a true horizontal position prior to layering. When about ready to layer the young shoots will have grown out from the parent cane, say about 6 inches. The pots are filled with soil, and as the rod cannot be buried to any depth in the pot it is necessary to heap some earth over the parent rod, which, of course, will also cover 2 inches or so of the young shoot. This done and a neat stake put to each shoot, a little fresh moss is put over the surface of each pot to prevent the sun and air drying the surface. This practically finishes the operation.

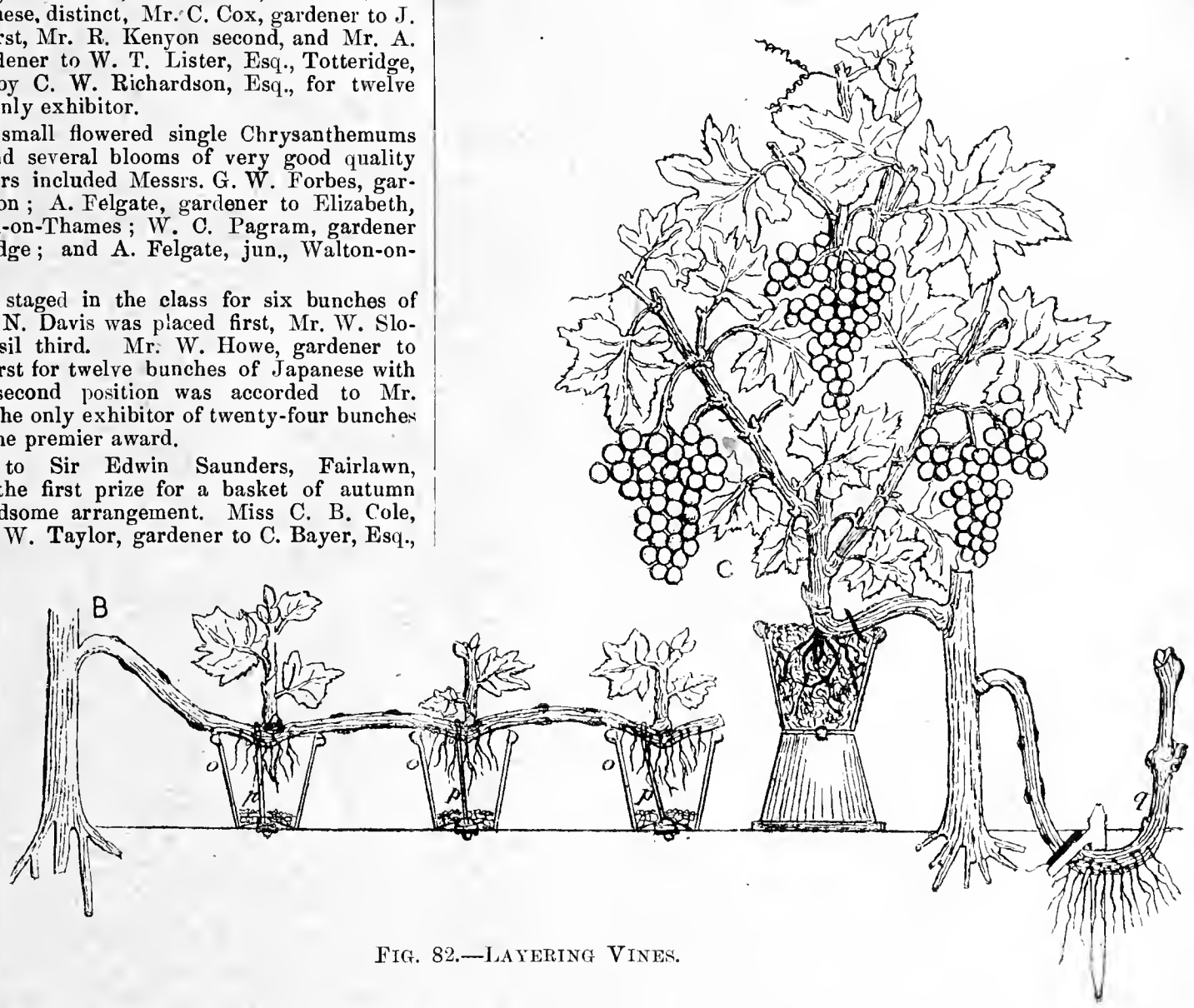

FIG. 82.—LAYERING VINES.

The moss is kept frequently moistened, but the moisture at this stage need only reach so far as the horizontal rod; this induces the emission of young roots, which generally appear in about eight days from the time the layering process has been performed. The roots issue the more freely from the upper side of the stem, and as they descend into the pots more water must be administered, following up with liquid manure as the roots grow stronger.

At this stage the young growths or upright shoots make rapid progress, for now, be it observed, they are fed from two sources—namely, from the parent Vine and from the freshly emitted roots. I cannot describe the growth of these Vines at this stage better than by saying it is "like magic.'

When first I experimented on Vines in this way, nineteen years ago, they were severed from the parent Vine exactly thirty days after the cane was layered. These young Vines were then planted in a well made border, and reached the top of the house the same season.

In the process of raising Vines in this way, it is quite unnecessary to make any incision on the rod with the idea of assisting the emission of roots. This I have tried, but I found it quite unnecessary; the roots seem to please themselves where they come out. I have been pursuing this practice more or less—and always successfully—ever since my first experiment in 1878.

The figure which accompanied Mr. Dunkin's notes in his very interesting description of Combe Abbey Gardens, which appeared in the *Journal of Horticulture*, October 21st (page 393), was a reproduction of the one which accompanied notes by Mr. James Smith, of Mentmore,

who was on a visit here in 1879, and he was the first to give publicity to my idea. Subsequently mention has been made of it approvingly in Barron's "Book of the Vine," and also in Wright's "Fruit Grower's Guide," two gentlemen whose opinions should, like that of John Gilpin, carry weight.—W. MILLER.

[The illustration (fig. 82) from the "Fruit Grower's Guide" clearly depicts Mr. Miller's procedure. It is a comparatively simple matter to get one or more bunches on a Vine by the system recommended.]

SWEET PEAS.

(*Concluded from page* 524.)

I HAVE said nothing about the fragrance of the Sweet Pea. In addition to its beautiful flowers of so many colours, its charming and graceful habit, its delightful perfume can be enjoyed by all, as it is within the reach of high and low. Some say it is honey scented, others the fragrance of the Orange blossom with a dainty touch of the Rose. Whatever its composition, we love it, and look upon it as one of the greatest and most refreshing pleasures of the garden.

The value of Sweet Peas for cut flower arrangements in rooms and for dinner table decorations is excelled by very few. In separate colours they are more striking than in mixture, and when lightly arranged with their own foliage and tendrils cannot fail to please. The fragrance is not too strong in rooms, as is the case with some sweet scented flowers. One of the prettiest dinner table arrangements I ever saw was done with a pink Sweet Pea.

I now come to the varieties. In dealing with them I shall fancy myself back on a July evening among the many little rows of our conveniently arranged collection. Drawn towards them, perhaps, by their more inviting fragrance, from the many other interesting studies of the garden, I soon get absorbed, but not so much so as not to notice and pull out here and there a rogue from where it has no business. We have selfs of all colours, striped of many colours, bicolors and versicolors.

Among the white varieties are Blanche Burpee, Emily Henderson, Queen of England, Mrs. Sankey, and White Eagle. The first named is the best, closely followed by Emily Henderson. In proportion to other colours, the whites should be more largely grown, as there is more demand for them. Those which nearest approach a yellow are Primrose and Mrs. Eckford, very nearly alike. This much-desired colour is more intense in the forward bud than in the expanded flower. It is still many shades removed from what we hope presently to get. Queen Victoria belongs to this section, and has much finer flowers, but is more of a cream colour.

We can revel in crimson and crimson scarlets. In Salopian, Mars, Firefly, Cardinal, and Ignea we have a splendid choice. Salopian is perhaps the best, and the others would not disappoint anyone. In the darker blues Madame Carnot, King of the Blues, Imperial Blue, and Blue King are good. In the more purple shades are Purple Prince, Indigo King, and the deepest of all, Shahzada, which I think dark enough for anybody. Madame Carnot is a favourite blue, but rather weakly in constitution. King of the Blues is also good, but with us a little inclined to sport. Captivation and Duke of Clarence are clear claret coloured; the latter is the darker, and I think the better.

Included in the deep bronzy maroon varieties Boreatton, Stanley, and Monarch are conspicuous. Boreatton is still our favourite, and one of the most distinct of Sweet Peas. The pale blue and kindred shades have many admirers—Countess of Radnor, Celestial, Princess May, Dorothy Tennant, Emily Eckford, New Countess, and Lady Nina Balfour include some very fascinating kinds. Among rose coloured varieties Lady Penzance, Princess Beatrice, Her Majesty, Adonis, Ovid, and Royal Rose are the best.

In pinks we have some really charming shades, Prima Donna, Mrs. Gladstone, Royal Robe, Peach Blossom, and several others. Venus is a very pretty varietyof a salmon buff, and Lady Beaconsfield is somewhat near it. Orange Prince, Meteor, and Countess of Powis are among the most beautiful Sweet Peas. Their orange salmon standards are exquisite, but unfortunately are liable to get touched by the sun. Countess of Powis is, I think, one of the best of the new varieties. These, and the pink colours, light up at night better than any others, and are consequently more effective for dinner-table and other indoor decorations.

The bicolor section must always be grown. The varieties include Duke of York, Blanche Ferry (perhaps the earliest of Sweet Peas), Little Dorrit, Apple Blossom, Empress of India, American Belle, and Painted Lady, which, besides being still a good variety, ought to be respected for its great antiquity. The striped section has become a large one, and is very distinct and popular. Queen of the Isles, Gaiety, Princess of Wales, Senator, Grey Friar, Mrs. Joseph Chamberlain, and Aurora are good. A rather peculiar class is shown in Vesuvius, Carmen Sylva, and Etna. They are variously coloured, shaded, and spotted, rather pretty, but small and little grown.

The various colours found in Sweet Peas run so near and into each other, that it is impossible to draw a line between them. I once tried, by request, to shade down the colours or grade them, beginning with the palest pink, gradually deepening into the darkest crimson, and the same with the lightest to the deepest blue, but it was not altogether a success.

I ought here, I think, to mention my experience of the dwarf Sweet Pea Cupid. It came over the Atlantic with a big reputation and a very florid description, which have not been verified in our climate. No one can say it is not a novelty. To stoop down to a Sweet Pea is not natural, so it may be said to be shorn of its elegance. We tried it in various ways the first season, but have not patronised it since. Then there is a pink Cupid, and if nice coloured varieties can be raised they may become useful.

I will now conclude by giving what I consider the best twelve and the best twenty-four varieties:—

BEST TWELVE VARIETIES.—Blanche Burpee, Salopian, Countess of Powis, Madame Carnot or King of the Blues, Lady Penzance, Prima Donna, Countess of Radnor, Queen of the Isles, Venus, Primrose, Duke of York, Boreatton, Butterfly, and Princess Beatrice. I have named fourteen to the dozen, but this, I think, is sometimes done.

BEST TWENTY-FOUR VARIETIES.—Blanche Burpee, Salopian, Countess of Powis, Madame Carnot or King of the Blues, Lady Penzance, Prima Donna or Mrs. Gladstone, Countess of Radnor, Queen of the Isles, Venus, Duke of York, Boreatton, Butterfly or Lottie Eckford, Apple Blossom Duke of Clarence, Princess Beatrice, Empress of India or Painted Lady, Queen Victoria, Firefly, Dorothy Tennant, Her Majesty, Lady Nina Balfour, Princess of Wales, Primrose and Mrs. Joseph Chamberlain or Aurora.—(*Paper read by* Mr. G. STANTON, *at a meeting of the Reading Gardeners' Association.*)

NOTES FROM DUBLIN.

ST. ANNE'S, CLONTARF.

ON page 206, vol. xxxiii, "Hardy Plantsman's" graphic pen depicts this fine estate as seen on a June day of last year whilst tripping through the Green Isle. Bent thitherwards on a winter's day, with a chill nor'-easter blowing, one feels a little handicapped as the memory of his smooth-flowing descriptive notes recur, for are not things now at their "worst?" Yet, where gardening is carried on in so spirited a manner as here, the "worst" (relative to interviewing Nature and Art on a winter's day) is good, and, somehow, the critical inspection of a fine place at its "best," in all its summer glory, with its *embarras des riches*, is trying to the pen. However, we (there are two of us) set forth from the city following the route taken by our accomplished singer of the praises of hardy plants, and flatter ourselves that no two hardier plantsmen could be found to face a nor'-easter stiff enough to delight a Kingsley.

On the other side of Dublin Bay the mountains loom through the hazy distance stern and white-capped. 'Tis the first touch of winter, and whilst the gale of wind and rain was recently sweeping the country, up there on the hill tops the ice king was silently spreading his mantle. My friend points out the features of what is to me a comparatively new country, though often viewed from afar, and bold and picturesque as is the Hill of Howth as we journey nearer to it, it is a relief to gain the shelter afforded by many Evergreen Oaks inside the demesne.

About the dignity of the stately mansion, or the satisfying *coup d'œil* it affords in its clear, classical outlines, wrought in polished Portland stone, we need not descant, or dwell upon the general features of the grounds immediately surrounding it; all of this has been detailed by the apostle of hardy plant culture previously alluded to. We are glad to escape from the chill nor'-easter and find the warmth of the plant houses decidedly grateful and comforting. On the roof of the first division of one of the several ranges Bomarea Williamsi, not now in bloom, is distinguished looking in its dark green glossy foliage, and fruits (seed pods) hang from it. This range discloses a glorious display of white Cyclamens of the gigantea type, in the culture of which our courteous guide, Mr. Campbell, the head gardener, is *facile princeps*.

Carnations are also, both indoors and outdoors, a feature of these gardens, amongst which Mrs. L. de Rothschild, Princess Alice of Monaco, and Winter Cheer are especial favourites. A seedling of Mr. Campbell's, bearing the name of Countess Ferrars, Lady Ardilaun's sister, is much esteemed for its general good qualities. It is but natural that two old mummers should thoroughly enjoy a superb group of the popular plants just in their prime, occupying the centre of a large house. Needless to say the display is of big blooms, although decorative plants of Pompons and singles adorn the side stages. These are pretty, the former superb; particularly noticeable being H. L. Sunderbruck, Souvenir de Petite Amie, Philadelphia, and Silver King; a few perfect balls of that inimitable incurved, C. H. Curtis, being conspicuous among their Japanese relations.

Entering a lofty house, of dimensions capacious enough to form a winter garden, formerly known as "The Orangery," and lately converted into a tropical house, are to be found some stately plants, and not a few, perhaps, seldom seen outside the Botanic Gardens. Giants of the Fern world are represented by a huge specimen of Angiopteris erecta, but the most satisfying objects, to me at least, are two grand clumps of Papyrus antiquorum. One could hardly overpraise this plant for tropical gardening (under glass) on a large scale. Among the lesser things is a striking South American species of Gloxinia (G. maculata), still bearing some of its quaint, hood-like, blue blossoms. Far up, depending from the roof, the winter sun gives a vivid tone of colour to bright bunches of Bignonia venusta. This plant as seen in bloom is charming. Arundo spicata, a slender Reed, has reached the roof, the chief point of interest about it being how it has managed to do so unsupported. The rich blue blossoms of bushy Dichorisandras have a cheerful influence on a winter's day.

In passing through other plant houses there are many promising collections of good things to come; 400 pots of Freesias are vigorous and sturdy. The choicest of Chinese Primulas in named varieties are coming on, and Mr. Campbell speaks highly of White Lady, a small,

single white, floriferous variety which—which we think somewhat weedy, but do not say so. Poinsettias in their two forms, P. pulcherrima and P. pulcherrima rosea, show well in a good batch of late spring-rooted plants with good heads of bracts over the average size. In the Orchid department Cattleyas and Lælias are clean and healthy, and amongst a good general collection we notice a fourteen-flowered spike of Vanda cœrulea, a variety of Odontoglossum Harryanum in bloom, with good flowers also of Cypripedium Charlesworthi, C. insignis montanum, among the type which are in strong force, C. Lawrenceanum, and a nice lot of Lycaste Skinneri.

A special house has lately been built and devoted to the requirements of the cool Odontoglossums, and here are some large specimens of the remarkable looking Streptocarpus Lelandi flourishing with the rightful occupants. Passing through the vineries, in which some serviceable bunches are still hanging, a large collection of Amaryllis are resting, and among them a number of seedlings of Mr. Campbell's own raising. These were interbred with a distant relative of that family, Griffinia hyacinthina, and he awaits results with some interest. That little gem, Saintpaulia ionantha, has been seen in various houses *en route*, and the results of Mr. Campbell's selection are to be seen in a remarkably fine type of this charming wee flowering plant.

Practically, my notes finish with the fine conservatory attached to the mansion, where a grand pair of Dicksonia antarctica, the pride of the noble master, Lord Ardilaun, are, perhaps, the principal feature, although the graceful pendulous growths of Grevillea Manglesi hanging from a cross rod are much admired. Lady Ardilaun's cultured taste is evident in a device employed on the side stages to minimise the stiffness of pot plants generally used. Pulham's famous rockwork in the grounds, the picturesque treatment of the water scene, the thousands of hardy plants, and the hundreds of others which are naturalised by thousands on the grass or in the glen—all of these have been noticed by my forerunner under more favourable conditions than a chill nor'-easter on a late November day.—K.

PALMS.

I KNOW of nothing so suitable for general decorative purposes as the beautiful and much-enduring Palms, which are coming into more notice every year. There is a peculiar interest about them, arising to a great extent from the associations connected with warm eastern and southern climes, which the very name of Palm seems to call up immediately before our minds. In almost all, or perhaps I might say in all, hot climates Palms of some sort form a conspicuous feature of the prevailing vegetation. In the midst of our own dark cheerless winter, when we are enduring bitter east winds and the early Snowdrops are shivering in the blast, we hear from our consumptive friends in their voluntary exile in Algeria or Mentone of the warm sunshine lighting up Palms and Citrons and Olives, and the ground being already bright with Hepaticas, Cyclamens, and wild Hyacinths, and we seem to be in a warm climate ourselves for a moment when we read of the many charms of the sunny south. Not that I for one would wish to change our English climate, capricious though it may be, for any other which I have met with or read of in other lands. We cannot have the warmth of their delicious winters, but neither have we the intolerable heat of their parching summers. If your business requires you to stay in one place all the year round, depend upon it there are few countries which can equal in climatic advantages our own sea-girt isle.

It is wonderful how long some of those Palms which do not require much heat will stand the dry air and the occasional draughts in drawing-rooms. I had a fine specimen of Phœnix dactylifera in the drawing-room the whole of last winter and far into the late spring, when it was sent out into the vinery to recruit. This plant, with many others, I raised from seed, which makes all the difference in point of interest. If seeds are sown in heat in a comparatively short time fine young plants, capable of bearing a good deal of cold and draught, and making a beautiful ornament for the drawing-room or the study, will be produced. The first two or three leaves are simply broad grass-like fronds, but even these are graceful; the divided fronds, which come afterwards, are really most charming in their effect, either separate or grouped with other Palms.

Seaforthia elegans is one of the most beautiful Palms where there is room for it. It requires space and generous treatment, and then few things can come up to the graceful beauty of a large plant of it with the older fronds bending down in a fine curve and the new fronds pushing straight up the centre. This is the Palm now generally used on Palm Sunday, and tied up in an ornamental fashion by the natives of Madeira and along the coast of the Mediterranean for that purpose. I should like to know how the fronds are made so beautifully white in their dried condition. They are frequently brought home and made use of as a room ornament hung upon the wall. I have tried the Seaforthia out of doors in summer, but it spoils the beauty of the plant, which is nothing once the green symmetry of the whole is injured.

For table decoration it is necessary to have kinds which grow in a smaller way, and of these, so far as my experience goes, Cocos Weddelliana is *facile princeps*. It is a beautiful light feathery-looking Palm with graceful arching fronds, which are minutely divided. It is one of the slow-growing Palms, and therefore it is necessary to be patient with it. But even in its babyhood it is beautiful. It makes an excellent plant for the dinner table whether small or large. In the small state five or six of them in small silver stands look exceedingly well; in a larger state of course they must take a more central position. Their great recommendation is, that in common with the whole tribe they will bear so much knocking about. Cocos Weddelliana is, however, a Palm which likes a warm house. Areca monostachya, or the Cabbage Palm, though not so beautiful as many, is a singular plant; the knotted stem is peculiar, and gives it the character of a small tree. Areca sapida is somewhat tender; its spiral mode of growth is pretty, and well grown it makes a fine specimen. I have found it too delicate to associate with Corypha australis.

It is by no means necessary to have even a cool greenhouse to grow the hardier Palms. With a little care and attention they will be found to accommodate themselves to the sitting-room. Those who have rooms large enough cannot introduce any ornament more graceful than a fine specimen of Latania borboniea or Corypha australis; and those who have less space in their rooms may rejoice in the more upright growth of the beautiful genus Phœnix, which includes several good species. The genus Chamærops is another of the more hardy race. They will stand out of doors well in the west country. It is wonderful how a Palm starts into growth as soon as it is taken out of its pot and put out with a depth of cool damp soil beneath it. I have no doubt with a little wrapping up Palms could be easily kept alive through our mildest winters; but I always think it is a pity to spoil the look of a winter garden for the sake of preserving a specimen which would do much better indoors. A mat against the wall is not so conspicuous, nor does it spoil the general appearance of other things, but even that is bad enough. On the whole, it is better to be satisfied with things which can really bear our climate, though attempts at acclimatisation are always interesting.—P. A.

THE YOUNG GARDENERS' DOMAIN.

PRIMULAS.

THIS genus is a very large one, including some of the most popular florists' flowers—namely, the Auricula, the Polyanthus, and the Primrose. It is of the greenhouse varieties, however, that I intend to write. The chief of these is Primula sinensis, of which the value is so well known to those who have to provide bloom for conservatory and table decorations when the flush of Chrysanthemums is over. At that season there are few plants in bloom, and the cheerful colours of the Primula brighten and lighten the conservatory wonderfully during the dull winter months.

To grow these plants well the seed should be sown at intervals from early in January until April, thereby having a long succession of flowers. Sow the seeds in pans containing light, rich soil, which has been previously damped, cover with a piece of glass, and place on a warm hotbed. When the seedlings are through and large enough prick out into boxes or pans, and when sufficiently rooted place in 2½-inch pots, and arrange them on a shelf near the glass to keep them sturdy. When the pots become full of roots transfer the plants to 5-inch pots, in which size they may flower. If, however, large plants are required, another shift will be found necessary. The best soil will be found in equal parts of fibrous turf and leaf soil, silver sand and charcoal added. Careful watering is necessary, as if the soil becomes in any way sour the plants soon present a sickly appearance.

During the summer months they may be grown in a cold frame, but shading will be necessary on hot days, and premature blooms must be pinched out. The same treatment is also applied in the culture of Primula obconica, a charming free-flowering species, which is also found useful during the winter. If used with the bright scarlet flowers of Raspail "Geranium," or Poinsettias, or flowers of any description used in table decoration, it is very lovely, while for conservatory and house decoration it is one of the best plants that can be grown.—E. J. B.

TOMATO CULTURE.

THE fruit of the Tomato is a universal favourite, and as such is used in many and various ways. Perhaps a few notes on the cultivation of the Tomato may prove interesting to readers of "The Domain." Plants may either be raised from seeds or by cuttings. In the latter case the plants commence fruiting earlier, but the constitution of the plant is not generally so robust as in those raised from seeds.

Seeds should be sown thinly in clean well drained 4 or 5-inch pots in a compost consisting of fine loam and leaf mould in equal proportions, adding coarse silver sand to keep the mixture open. The pots should be filled to within an inch of the top, and when the seeds are sown they must be just covered with a little of the compost. Place the pots in a temperature of 65° by night, and as soon as germination takes place raise the pots to quite near the glass. Seeds to produce plants for early fruiting must be sown at the beginning of December, making successions until about the last week in May.

As soon as the seedlings are large enough to handle, they should be pricked off singly into 3-inch pots, using a compost as before. Stand the pots on a shelf close to the glass in a growing atmosphere, being careful with water, as if given too freely the young plants will damp rapidly. When these pots are filled with roots, transfer to 6-inch, using as a compost fibrous loam, leaf mould, and a little old Mushroom bed refuse. Pot rather firmly, fastening the plant to a neat stick. As growth advances, the plants may be gradually hardened, but at all times it must be the aim of the cultivator to get a dwarf, sturdy growth. Remove all the side growths, leaving the flower spikes as they appear, and not stopping the leader.

Having filled the 6-inch pots with roots, the plants may either be placed in beds or in well-drained 11 or 12-inch pots. The compost for this operation should consist of four parts good loam, one part Mushroom bed refuse, half a part old mortar rubble, with a little soot added. In either case the soil must be made quite firm. Continue to grow as advised for the

6-inch pots, keeping the side growths continually disbudded, unless a space has to be covered.

If planted outside, as soon as danger from frost is over Tomatoes will succeed well, and will amply repay any trouble taken. If possible the plants should be put against walls facing the south. For winter fruiting, to insure a good set, the flowers must be artificially fertilised every day about noon. During the dark days of winter the Tomato will require little water, allowing the pots to ring before giving it, or seeing, by examination, the beds are dry. In the case of manures, I think, were less sheep or cow manure water used, trusting to some well-proved fertiliser, we should hear less of the dreaded disease. In the winter a temperature of from 48° to 53° will suit well, giving air on all favourable occasions. —SEMPER.

RASPBERRIES.

THE Raspberry is one of the commonest and most useful fruits we have, yet I fear it is often given a place in the garden where it can never receive proper attention; indeed, I have seen Raspberries so neglected that it has been difficult to perceive where the original canes were planted. For a good crop of fruit I would recommend the following mode of culture.

Select an open—though not necessarily exposed—piece of ground, and if in nature it be somewhat retentive, so much the better. If possible, trench the site 3 feet deep, adding a liberal quantity of farmyard manure. The best time for planting is the month of September, or as soon as the leaves turn yellow, though it may be done at any time from now until the end of February, provided the weather be open. Choose a good variety, such as Superlative, which has proved in every way an acquisition. It is robust in habit, without throwing up an unusual number of suckers; while the fruit is large, handsome, and freely produced. Plant in rows 5 feet apart, the canes or stools being 2 feet asunder, this will allow room for getting between the rows in inclement weather.

After planting, place iron uprights at equal distances along the rows, and to these attach four stout galvanised wires, the whole when finished being 5 feet high. To these wires tie the canes loosely to allow for a slight sinking of the ground. Some growers cut their young canes down to within a foot of the ground the first year, thus giving the stools time to gain strength and throw up three or four strong canes for next year's fruiting. This is to be recommended when the canes have been planted late, but if planted in September a light crop may safely be taken the first year. After the stools become established give copious waterings with liquid manure, as Raspberries are gross feeders, and soon exhaust the ground in which they are growing.

Remove the bearing wood immediately after fruiting, tying-in the young canes about 6 inches apart along the wires, which will give neatness to the quarter and expose the wood to the elements to get well matured. When the leaves fall, shorten the growths retained to the top wire, removing every one that is not required with a fork. Let this last item be thoroughly well done each year, as it is most important to maintain a neat and presentable appearance, while if allowed to remain the suckers will rob the ground of much useful food.

Hoe the surface lightly, giving a good mulching of decayed manure to remain over the winter. This mulching should be taken off from time to time, and renewed with fresh, as it is advisable not to dig between Raspberries at any time, their rootlets making quite a network immediately below the surface of the soil. In the case of light soils farmyard manure is by far the best to use, it helping to retain moisture. Should the soil, however, be retentive a dressing of fish manure may be used about thrice in the year, from which I have seen excellent results. Raspberries may remain from eight to ten years if properly fed, a new plantation being made in the meantime to take the place of the old.—T. P.

FRUIT FORCING.

Cucumbers.—Foggy, wet, and dull weather, alternating with windy and bright intervals, tax the plants severely, growth being very unsatisfactory. Keep the glass as clean as possible both outside and inside, for every ray of sunlight is of consequence. Use sweet warm soil, and not very wet, for earthing-up the roots, covering them lightly as showing at the sides of the ridges or hillocks. A few sweetened horse droppings with an occasional sprinkling of soot spread on the surface will attract the roots and afford nourishment to the plants when watered. This is preferable to liquid manure, unless the plants are growing in very small beds or confined to boxes or pots; then copious supplies will be necessary. Always apply it weak and tepid, and not too often. Sufficient moisture will be secured by damping the paths and walls in the morning and afternoon of fine days; but avoid an excess, and do not supply water to the roots till the soil is becoming dry, then afford a thorough supply. Look over the plants at least once a week for stopping, removing bad leaves, thinning as required, but neither stopping nor thinning will be much needed; yet these must not be neglected, as crowding is one of the greatest evils in the growth of winter Cucumbers.

Mildew is sometimes troublesome at this time of year. It may be combated by dusting the affected parts with flowers of sulphur, and the atmosphere should be kept drier. A light brushing over the hot-water pipes with a cream of sulphur and skim milk is useful against mildew, red spider, and white fly. Thrips and aphides are best destroyed by fumigation with tobacco paper or vapourisation with nicotine essence. Tobacco powder dusted on green and black fly or aphides destroys them, and fumigation on two or three consecutive evenings eradicates these pests.

Peaches and Nectarines.—*Earliest Forced Trees in Pots.*—To have fruit at the earliest possible time, and without overtaxing the trees by very hard forcing, they should be started without loss of time to ripen the fruit at the end of April. Only the very early varieties will do that, such as Alexander, Waterloo, Early Beatrice, Early Louise, and Early Leopold Peaches; Cardinal, Advance, and Early Rivers Nectarines. These embrace varieties with both large and small flowers, so that there is no difficulty in securing pollen for cross-fertilisation. The trees do admirably in a three-quarters span-roofed house facing south, quarter, half, and full standard trees being grown so as to have the heads near the glass. Tomatoes can be grown against the back wall for an early supply of fruit, and when the Peach and Nectarine trees go outside the house will be at liberty for plants in pots. The trees require the same treatment as trees in borders.

Earliest Forced Planted-out Trees.—Trees started in December, or at an early date in previous years, swell their buds promptly without incitement from artificial heat, but those forced for the first time are slower in starting into flower. To have fruit ripe in May, and the trees being of the second early or midseason varieties and not before early forced, the house must now be started. They must not be hurried, but given time to advance steadily and develop a strong flower, perfect in all its parts. The proper procedure is to admit a little air constantly at the top of the house, and above 50° it should be increased correspondingly with the temperature. Do not allow a decline below 50° in the daytime, sufficient artificial heat being employed for that purpose, and with sun heat an advance may be allowed to 65°, closing for the day before the heat has receded to below 55°. A temperature of 40° to 45° is ample at night, or in mild weather 50°.

When the flowers are advanced so as to show the anthers cease syringing, but afford a moderate amount of air moisture by damping the borders, paths, and walls in the morning and afternoon on fine days. Avoid a close moist atmosphere at any time, especially at night. Examine the inside border, making sure that there is no deficiency of moisture. If necessary afford a thorough supply of water or liquid manure to weakly trees. The surface soil is often deceptive, being kept moist by syringing, therefore supply enough to moisten the soil through to the drainage, for surface moistening does little good. Trees often have weakly blossoms, and fail to set in consequence of water being given to the tops of the trees instead of to their roots. Remember, a sodden soil is just as bad, or worse, than a dry one, therefore guard against extremes either way. If there is a superabundance of blossom buds, remove those on the under side of the trellis or shoots by drawing the hand the reverse way of the growth. This will materially assist the swelling of the remaining buds. If there be any trace of aphides fumigate the house on two or three consecutive evenings Protect the outside border with leaves and a little litter, but not so thick as to heat.

Second Forced House.—If the trees are very early varieties, such as Alexander, Waterloo, Early Beatrice, Early Louise, and Early Leopold Peaches, Cardinal and Advance Nectarines, fruit may be had early in May by starting at the new year; but if the trees are such as Hale's Early, Dr. Hogg, Early Alfred, Stirling Castle, Royal George, Dymond, or Grosse Mignonne Peaches, Early Rivers, Lord Napier, and Stanwick Elruge Nectarines, the fruit will not ripen until May is well advanced or early in June. This must be taken into consideration by growers. In either case the house must be closed at once. Fire heat must only be used to exclude frost, the trees being sprinkled occasionally, or on fine days in the morning and afternoon, allowing time for them to become fairly dry before night. Keeping the trees constantly dripping with moisture, especially at night, enfeebles the blossoms, and is provocative of wood bud rather than of blossom bud development. Do not allow the temperature to exceed 50° in the daytime without full ventilation. Supply water or liquid manure to inside borders, and protect outside with some leaves and a little litter over them.

Succession Houses.—Where the roof-lights are moveable it is much the best plan to remove them, and expose the trees to the elements for the winter, the wood being thoroughly ripe. This is inimical to many insects, especially brown scale, and the trees are insured rest and thorough moistening of the border. Even the latest and unheated houses are best treated in that way, often having the effect of causing trees to retain their buds, which cast them under fixed roofs, and the blossoms are generally finer on trees that are kept constantly evaporating from the young wood through the time they are at rest under fixed roofs, or when they are subjected to alternating rests and excitements where plants are grown in the house. The fogs and damp of winter, with the drenching rains and snow, suit Peaches and Nectarines in well-drained soil, the trees being invigorated and the soil enriched. If the houses have fixed roofs, ventilate to the fullest extent in all but very severe weather. Proceed with the pruning, bringing matters to a close in respect of cleansing the house and trees as soon as possible.

Pines.—*Young Stock.*—Spare no effort to keep growing plants from becoming drawn and weakly, by giving all the light possible, and not pinching for room. Maintain a night temperature of 55° to 60°, which, with 65° in the daytime, will keep all young stock gently growing,

admitting a little air at the top of the house at 65°, leaving it on all day, but do not let the temperature fall below that point, and when the temperature advances to 75° from sun heat, a free circulation of air must be allowed. The bottom heat should be kept steady at 80°. Avoid a damp atmosphere, an occasional damping of the paths will suffice. Water only when the plants become dry, then afford a proper supply of weak liquid manure.

Plants to Ripen the Fruit in May and June.—Where a supply is required at the time named, and plants are not showing fruit, it will be desirable to select from those started in March last, which have completed growth and are now in a state of rest, such as show a stout base—the best indication of starting into fruit when subjected to a higher temperature both at the roots and in the atmosphere. The plants are best placed in a structure to themselves. Where this cannot be afforded they must have a light position in the house where the fruiters are swelling. Maintain a night temperature of 65° in the fruiting department, 5° less in the morning of cold nights, and 70° to 75° by day, but in very severe weather a few degrees lower is preferable to extra sharp firing.

THE KITCHEN GARDEN.

Vacant Ground.—Advantage should be taken of the first hard frost to wheel on to the vacant plots decayed manure, vegetable refuse, leaf soil, old potting soil, mortar rubbish, ashes, sand, or anything that would improve the working and fertility of the soil. This should be done whether it is desirable to dig or trench the ground early in the winter or not, as nothing can be more injurious, to heavy soils especially, than wheeling and trampling on them when they are soft and damp.

Heavy Clayey Soils.—More than ordinary judgment ought to be exercised in the treatment of these. In some few cases digging and roughing up clayey soils early in the winter does not answer well. If after they are pulverised by frost and rain the clayey particles run together like so much birdlime, then digging had better be deferred till a few weeks prior to cropping, or only just long enough for the fining down of the lumps by the action of the weather to take place. In this case wheel on the manure in frosty weather, and cover the heaps with soil. The majority of heavy clayey soils, however, are best dug roughly either before midwinter or soon after. They would be still further improved in fertility and free working by a second digging in February or March, deferring cropping till the drying winds and sunshine, followed by some rain, have effectively broken down the lumps. In this way a good spit of finely divided soil is prepared. Strawy manure is best for heavy land, especially when it is dug in early in the winter. and peat moss litter manure is also suitable if not too freely applied. For ameliorating heavy soils a variety of materials are available and should be employed whenever possible. These include lime rubbish, sand, ashes, peat, leaf soil, and soft ballast, made by burning clayey soil and weeds. These ought to be spread over the surface in the spring, and well mixed with the top soil. Fresh lime should be similarly applied, but if gas lime is used spread this over the ground at the rate of one-half hundredweight to the square rod, and leave it exposed a month or six weeks before forking it in.

Medium and Light Soils.—Medium soils, or those moderately retentive of fertility and moisture, are fairly free working, give the least trouble, and generally prove the most desirable. In some instances these are improved by early digging. For these almost any kind of solid manure is suitable. Light sandy soils are, as a rule, best left alone till near the time for cropping. They are usually hot and dry during the summer, and for this and other reasons ought to be dressed with nearly decayed manure. Decayed garden refuse is also a most suitable manure for light soils, digging in green vegetables finding favour in some districts. Where Turnips, Rape, or Mustard have been sown thickly expressly for digging in no other manure will be required.

Trenching.—Ordinary trenching ought not to be undertaken lightly. If the subsoil is of a clayey, unkindly nature, and has not been previously greatly improved by bastard trenching and the addition of a variety of materials such as previously recommended for the surface of heavy land, then to bring that to the top and to deeply bury the fertile free working top spit is likely to prove a costly blunder. Where this mistake has been made the best way out of the difficulty is to re-trench the ground. By the time this is done the whole depth will become so mixed that it will be found more productive than ever before. Deposited or alluvial soils are frequently of considerable depth, and of much the same character two spits deep as they are on the surface. These may be safely and advantageously trenched every few years.

Bastard Trenching.—This is also known as double digging, and consists of breaking up the ground two spits deep without altering their relative positions. It has the effect of greatly improving the ground, rendering it warmer in the winter and more retentive of moisture in the summer than ordinarily dug ground. Trenching should be done early enough for the ground to have time to settle and solidify somewhat prior to cropping, and no manure need be added to the top spit unless it is very plentiful.

PLANT HOUSES.

Epacris.—Any plants that only made puny growth during the past season and are healthy, as well as those that have not ripened their shoots sufficiently to flower profusely, may be cut well back. If done at once such plants will start early, and invariably make vigorous growth next year. Keep plants subjected to this treatment in the greenhouse, and maintain a cool airy temperature.

Erica hyemalis.—Home-grown plants that are not going to flower profusely may have all the strong shoots cut nearly close back. Any young growths that are not more than 1 or 2 inches in length may be left as they are and allowed to extend. Plants treated in this way last year have flowering shoots upon them nearly 18 inches in length. Purchased plants generally do better the second year than the first after flowering. To flower the plants even satisfactorily the first year they must be potted as soon as they have started into growth.

Erica autumnalis (gracilis).—This is hardly worth retaining after it has flowered once. When grown with hyemalis we have never been very successful with it owing to it being so badly attacked by mildew. It can be grown fairly well, however, if given a place where the atmosphere is dry and abundance of air can be continuously maintained. A close atmosphere even for a few days means partial ruin to the plants. Be careful that none of these plants is allowed to become dry at the roots or it will be ruined.

Azalea indica.—One of the greatest evils these plants have to contend against is keeping them too dry at their roots during the winter months. At no season of their growth should they be allowed to become dry; once this occurs their silk-like roots quickly perish. Plants that are confined for years in their pots usually lose a very large percentage of the foliage owing to inactivity at the roots. Those that are repotted from time to time as they need more root room have darker and bolder foliage, which they retain well throughout the winter. Plants also that are potted in loam, leaf mould and sand, have better foliage, and make more vigorous growth than those potted in peat and sand. Destroy thrips directly these pests are observed. Syringe the plants well at least once a day when the weather is favourable. Complete the tying of the plants as early as possible.

Mignonette.—Plants in 5-inch pots must not be allowed to become crowded; thin them out to five or six in each pot. Keep the plants perfectly cool, and as close to the glass as possible. Do not allow them to suffer by an insufficient supply of water, or their foliage will soon turn brown. Trained plants that have their pots full of roots may have a little artificial manure applied to the surface of the soil at intervals of a fortnight.

Zonal Pelargoniums.—Plants that have been kept as cool as possible may be placed in a temperature of 60°, when they will quickly come into flower. Be careful not to overwater the plants, or they will start into soft growth instead of flowering freely. Damp must be expelled from the house by the admission of air whenever the weather is favourable. At this period of the year the plants do well standing on a moderately dry base with the atmosphere as dry as possible. Not only are the flowers liable to damp, but the foliage as well, if too much moisture is kept about the plants.

Acalyphas.—The leaves are falling from these where they have been kept in the conservatory, and only ordinary temperatures maintained. The plants may be cut back to within 2 inches of the soil, and if placed in a temperature of 60° and kept on the dry side they will soon break into growth. When about 1 inch of growth has been made the plants may be reduced and potted in the same size pots, or if they are only in small pots the drainage can be removed and the plants given a small shift. Cut-back plants with three or four shoots make excellent bushes.

THE BEE-KEEPER.

FOUL BROOD.

BEES are not liable to disease to any serious extent if they are carefully managed, except it be from foul brood. In some districts it is unknown, but in other localities this dread disease has increased rapidly of late years, and is much more prevalent in the South and West of England than in the North. In some country districts, where a quarter of a century ago I could easily have found a hundred colonies of bees, very few now remain, and one may drive for several miles without seeing a stock of bees, whole districts being devastated by this disease.

Foul brood being very contagious, strong measures should be taken to prevent the disease from spreading to healthy colonies, otherwise it will be difficult to eradicate. Unfortunately, if the disease is not suspected it is seldom discovered in its early stages. This was quite excusable when the majority of bees were kept in straw skeps, as it was then almost impossible to discover it except from the smell arising from the putrid mass, or from the weakness of the colonies. When in this condition the disease is in its last stage of development, and may contaminate all the bees within a radius of two miles.

The advent of the moveable frame hive offered facilities for examining the combs without injury or serious disturbance of the bees, but the ease by which the bees could be manipulated under the modern system of bee-keeping had its drawbacks. Hives were constantly opened, irrespective of the weather or outside temperature, the consequence being brood became chilled in the combs, and in too many instances I fear it has been the forerunner of foul brood. Chilled brood is quite different from foul brood; the latter is contagious, the former is not. The larva of chilled brood in the early stages is

grey, becoming nearly black as it decomposes, and if the colony is a strong one the bees will remove the dead larvæ from the cells.

In the early stages of foul brood the larva is white, changing to yellow, afterwards turning to a coffee-coloured brown. In some instances the larva is healthy to all appearance until the cells have been capped over, afterwards succumbing to the disease. When in this condition the cappings become perforated, many of them being slightly indented, and if the capping is removed the disease may be at once detected, owing to the unpleasant smell arising from it, by anyone who has not previously had experience with foul brood. The well-known whiteness of the brood in a healthy stock need never be confounded with either chilled or foul brood.

How Foul Brood is Spread.

One of the chief causes of the spread of foul brood is leaving hives in which the bees have died exposed on the stands, so that the bees from other colonies in the neighbourhood have access to the combs. This they readily take advantage of, and the first bright day that comes commence to clear out the stores that remain in the hive. Thus disease is carried from one to the other, and the whole district soon becomes a hotbed of foul brood. This is no imagination, as I know of several instances where this has happened, though fortunately not in the neighbourhood of my apiary.

Another common mistake is to use hives again without properly disinfecting them, also the combs and frames, which should have been destroyed. This is mismanagement, and may be easily remedied by using a little forethought. Carelessness in this respect may do a great amount of injury to bee-keepers who are unable to help themselves.

But if bee-keepers would only take the matter in hand foul brood and its ravages might soon be stamped out of the country. The chief difficulty is to get those bee-keepers who are either careless or ignorant to realise the harm that is being done in some districts owing to the improper handling of diseased stocks suffering from foul brood.

Treatment of Affected Bees.

It is well to remember that it is not necessary to destroy the hives in which diseased bees have been; but all frames, combs, quilts, and whatever has come in contact with the bees should be committed to the flames. The combs may be melted down for the wax if necessary; but it is better to be on the safe side and destroy all bodily, as the frames can now be bought at such a cheap rate (if they are not made at home) that it is unwise to run any risk.

If the bees are weak and few in number, which they in all probability will be, join several colonies together, and make an artificial swarm of them; place them in a clean straw skep, and allow them to remain for twenty-four hours without food. Many of the diseased bees will then have died, and the remainder may be shaken into another clean skep. The bees must now be fed with syrup made in the usual manner, to which has been added a small quantity of naphthol beta. They may be fed from a bottle feeder placed over the hole on the top of the skep.

Sixty hours afterwards the bees are placed in a frame hive on full sheets of foundation and fed as before, and in all probability the offspring from this colony will show no signs of disease. The reason the bees are not placed in the frame hive directly they are removed from the diseased stock, is owing to the fact that by placing them in quarantine in an empty straw skep they consume all the honey they brought in their sac before using the medicated syrup. The hives must be well washed with boiling water and soap, afterwards painting them inside with pure carbolic acid, working it carefully into all the crevices. The outside of the hive should have a couple of coats of white lead paint. It will then be ready for use again as soon as the smell arising from the use of the carbolic has passed away.

Hives after being treated in this manner should be exposed in the open air for a week or two, as the smell will pass away much more readily if the sun and wind have access to them.—An English Bee-keeper.

TRADE CATALOGUES RECEIVED.

W. Fell & Co., Hexham.—*Forest Trees.*

Vilmorin, Andrieux et Cie., 4, Quai de la Mégisserie, Paris.—*Tree and Shrub Seeds.*

GARDENERS' CHARITABLE AND PROVIDENT INSTITUTIONS.

The Gardeners' Royal Benevolent Institution.—*Secretary*, Mr. G. J. Ingram, 50, Parliament Street, London, W.C.

United Horticultural Benefit and Provident Society.—*Secretary*, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

Royal Gardeners' Orphan Fund.—*Secretary*, Mr. A. F. Barron, The Royal Gardeners' Orphan Fund, Chiswick, W.

TO CORRESPONDENTS

All correspondence relating to editorial matters should, until further notice, be directed to "The Editor," **8, Rose Hill Road, Wandsworth, London, S.W.**, and **NOT** to Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Pears on Quince Diseased (*Young Hand*).—Your specimen will be examined and reported on in an early number of the Journal.

Bone Ash as a Manure (*Constant Reader*).—Certainly you may use bone ash as a food of plants. It is a permanent manure—that is, it lasts longer than the year in which it is supplied, and is more calculated to promote a sturdy floriferous or fruitful habit and a fibrous root formation than free growth: but this can be induced by supplying nitrates of potash or soda, or sulphate of ammonia when the plants or trees are starting into growth, about one-fourth of one of these substances being sufficient to mix with the bone ash for plants in pots, also for Vines, Roses, or vegetables. Alone it should only be given at intervals during the growth of plants and crops.

Slugs (*W. S.*).—The specimen is the garden slug, Limax hortensis, said to be a hybrid between the field or milky slug (L. agrestis) and the black slug (L. afer), or, according to some, Arion ater. The hybrid rests on nothing but mere conjecture, and the habit to which yo allude shows you to be a careful observer. The garden slug varies extremely in colour, but this does not imply a hybridism, being sometimes brownish, yellowish, or even greenish, but commonly grey or black, often neither one nor the other, but some of both. It is rather longer than the field slug, and more tapering. The Fern is Asplenium caudatum, a form of A. falcatum.

Soluble Phenol (*Phenyle*).—Mr. Abbey says the article is not soluble phenyle, which is not of the "colour of weak tea," but a thick dark brown or nearly black syrupy liquid, and when placed in water forms a milk-like solution. This is the genuine article, having the formula, C_6H_5, and is a proprietary preparation, known as Little's Soluble Phenyle. The aqueous solution of phenol, with which you appear to have been supplied, has the formula C_6H_5OH, and hence not far removed from carbolic acid, sometimes called "phenol," the crude article in solution not being unlike "weak tea." It has the formula C_6H_6O, and has not been recommended for destroying mites or eelworms at the roots of plants.

Tar and Clay Mixture for Peach Trees (*H. G.*).—The mixture would hardly be suitable for dressing Peach trees infested with brown scale; but we have known it used without doing any injury, and in other cases almost kill the trees, likewise Vines, the gas tar sinking into the bark and causing it to become bark-bound—that is, dried. This may have been due to the mixing and the excessive application. We also have known neat's-foot oil applied pure for killing American blight, and also boiled linseed oil for destroying scale on Apple trees, and both with and without injury to the bark. We have not found paraffin dangerous in any case as a winter dressing at a strength of a wineglassful to a gallon of water; but it will not mix with water, so that some parts get all oil and others all water. If you put eight wineglassfuls of water into a pan and one wineglassful of softsoap, heat to boiling, and then add a wineglassful of paraffin oil immediately on removing from the fire to the solution, and stir briskly, the oil will mix with it and form an emulsion; then you can add boiling water to make up a gallon of solution, and use it at a temperature of 130° to 140° for dressing the trees, applying with a brush, taking care not to dislocate the buds. That is soluble petroleum, easily made and effective against most hybernating pests, whether in the egg or otherwise. Another plan, and certainly as good, if not better, is to dissolve 1 oz. each of caustic soda (98 per cent. purity) and 1 oz. commercial potash or pearlash in a gallon of hot water, and apply with a clean half-worn painter's sash tool carefully, suffice that every part be wetted. If the wood be sappy the mixture must be used weaker, diluting to 1½ gallon. We find water at 140° to 160° kills scale, even the eggs and all hybernating pests; but unless the wood be ripe there is danger of scalding. The trees in every case must be quite dormant.

Blood Manure (*Pytchley*).—The recipe given on page 540 is the correct and original one, and failures occur through the acid being too weak or the blood not kept long enough. It must be rancid and smell strongly, otherwise it will coagulate instead of fall into a powder; indeed, the breaking up by decay is an essential.

Tabernæmontanas (*Novice*).—The varieties of this useful plant produce their double white flowers nearly the whole year round. T. coronaria fl.-pl., is more adapted for spring and early summer flowering, while T. camassa produced its flowers in greatest abundance about August. This has been the character of large plants, and in order, if possible, to induce the first-named variety to flower during the winter cut it hard back, and after it had commenced growth it was pushed on rapidly, until a few weeks ago it was placed under a little cooler treatment. It is again in brisk heat, and has commenced showing a fair number of flower buds. Hard cutting back appears to suit them well, for our plants have made remarkable growth, and we subject them to the cutting-back system annually.

Culture of Tuberoses (*B. J.*).—Many thousands of these plants are grown by placing one medium-sized bulb in a 5-inch pot, and three in 6 or 7-inch pots. Very large bulbs are sometimes placed singly in 6-inch pots. The upper part of the bulbs are above the soil, which is similar to that in which Hyacinths are grown. They are usually buried in cocoa-nut fibre refuse under the stage of a warm greenhouse, where no drip falls from the plants. In that way the soil is kept moist without watering, and roots form freely. When top growth is visible light is essential, a shelf in a warm house being suitable. Many plants are grown on shelves and stages from the first, but great care is needed in watering. When flowers are wanted early the plants are grown in stoves or hothouses, and in this case it is advantageous if the pots can be plunged in a hotbed.

Half a Dozen Good Apples (*A Constant Reader*).—The following are likely to "give good crops, and, if well grown, command a good market price." Dessert: Devonshire Quarrenden, *Worcester Pearmain, *Cox's Orange Pippin, Brownlees' Russet, Gascoyne's Scarlet, and Baumann's Reinette. Kitchen: *Early Transparent, Lord Grosvenor, Cox's Pomona, *New Hawthornden, Bismarck, *Newton Wonder, or *Bramley's Seedling. You did not say whether you wanted dessert or culinary Apples, so we have given both. The list of good varieties is now so extensive that it is extremely difficult to make a small selection without leaving some first-rate varieties out, such as King of the Pippins, Ribston Pippin, and Sturmer Pippin in dessert, Potts' Seedling and Golden Noble in kitchen. If you only require six those marked with an asterisk are good. The trees would come into bearing in the third year, and become profitable more or less right away, attaining the full degree in about a dozen years, if dwarfs on English Paradise stocks, and about six years more on free stocks. Blenheim Pippin would do excellently in Somerset, but would not bear well until fifteen or twenty years old. We recommend standard trees for orchards, and low standards or bushes for plantations.

Names of Fruits.—*Notice.*—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. *In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing.* The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. *They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state.* (*G. T.*).—1, Closely resembles an unusually well preserved specimen of Marie Louise d'Uccle; 2, The Brougham, raised by the late Mr. T. A. Knight. (*L. P.*).—1, New Hawthornden; 2, Yorkshire Greening; 3, Alfriston; 4, Tower of Glamis; 5, Wellington; 6, Blenheim Pippin. (*W. B.*).—1, Nec Plus Meuris; 2, Jersey Gratioli; 3, Josephine de Malines; 4, Catillac; 5, Chaumontel. (*H. J. L.*).—1, Golden Winter Pearmain; 2, Court Pendu Plât; 3, Calville Rouge d'Hiver; 4, Flower of Kent; 5, Beauty of Hants. (*R. C. S.*).—1, Hollandbury; 2, Gloucestershire Costard; 3, Golden Noble; 4, Queen Caroline; 5, Wellington (Dumelow's Seedling); 6, Cox's Orange Pippin. (*J. E.*).—2, An abnormal specimen, but bearing a general resemblance to Scarlet Leadington; 3, Bramley's Seedling; 4, Mank's Codlin, which frequently keeps until this time; 5, Annie Elizabeth.

Names of Plants.—We only undertake to name *species* of plants, not varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*V. M.*). 1, Kentia Fosteriana; 2, Lomaria gibba; 3, Phœnix reclinata; 4, Nephrolepis davallioides; 5, dead; 6, Onoclea sensibilis. (*W. F. P.*).—1, A poor variety of Odontoglossum crispum; 2, Masdevallia Lindeni; 3, Oncidium Forbesi. (*H. S.*).—1, Adiantum pubescens; 2, Selaginella Martensi; 3, S. cæsia.

COVENT GARDEN MARKET.—Dec. 8th.

FRUIT.

	s. d.	s. d.
Apples, ½ sieve	1 6	to 4 0
Cobs	22 6	24 0
Filberts, 100 lbs.	0 0	0 0
Grapes, lb.	0 8	to 2 0
Lemons, case	11 0	14 0
St. Michael's Pines, each	2 6	5 0

VEGETABLES.

	s. d.	s. d.
Asparagus, per 100	0 0	to 0 0
Beans, ½ sieve	0 0	0 0
Beet, Red, doz.	1 0	0 0
Carrots, bunch	0 3	0 4
Cauliflowers, doz.	2 0	3 0
Celery, bundle	1 0	0 0
Coleworts, doz. bnchs.	2 0	4 0
Cucumbers	0 4	0 8
Endive, doz.	1 3	1 6
Herbs, bunch	0 3	0 0
Leeks, bunch	0 2	0 0
Lettuce, doz.	1 3	0 0
Mushrooms, lb.	0 6	0 8
Mustard and Cress, punnet	0 2	to 0 4
Onions, bushel	3 6	4 0
Parsley, doz. bnchs.	2 0	3 0
Parsnips, doz.	1 0	0 0
Potatoes, cwt.	2 0	4 0
Salsafy, bundle	1 0	0 0
Seakale, basket	1 6	1 9
Scorzonera, bundle	1 6	0 0
Shallots, lb.	0 3	0 4
Spinach, pad	0 0	0 0
Sprouts, ½ sieve	1 6	1 9
Tomatoes, lb.	0 4	0 0
Turnips, bunch	0 3	0 0

PLANTS IN POTS.

	s. d.	s. d.
Arbor Vitæ, var., doz.	6 0	to 36 0
Aspidistra, doz.	18 0	36 0
Aspidistra, specimen	5 0	10 6
Chrysanthemums, doz.	4 0	9 0
,, ,, single plants	1 6	2 0
Dracæna, var., doz.	12 0	30 0
Dracæna viridis, doz.	9 0	18 0
Euonymus, var., doz.	6 0	18 0
Evergreens, var., doz.	4 0	18 0
Erica hymalis, per doz.	9 0	15 0
,, gracilis, per doz.	6 0	9 0
,, various, per doz.	8 0	12 0
Ferns, var., doz.	4 0	to 18 0
Ferns, small, 100	4 0	6 0
Ficus elastica, each	1 0	7 0
Foliage plants, var., each	1 0	5 0
Lilium Harrisi, doz.	12 0	18 0
Lycopodiums, doz.	3 0	4 0
Marguerite Daisy, doz.	4 0	9 0
Myrtles, doz.	6 0	9 0
Palms, in var., each	1 0	15 0
,, specimens	21 0	63 0
Pelargoniums, scarlet, doz.	4 0	6 0

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.
Arum Lilies, 12 blooms	4 0	to 6 0
Asparagus Fern, bunch	1 0	2 6
Bouvardias, bunch	0 6	0 8
Carnations, 12 blooms	1 0	3 0
Chrysanthemums, 12 bnchs.	2 0	6 0
,, ,, 12 blooms	0 6	2 6
Eucharis, doz.	4 0	6 0
Gardenias, doz.	2 0	4 0
Geranium, scarlet, doz. bnchs.	4 0	6 0
Hyacinths (Roman) dozen bunches	1 0	6 0
Lilac (French), bunch	3 0	5 0
Lilium longiflorum, 12 blooms	4 0	6 0
Lily of the Valley, 12 sprays	1 0	2 0
Marguerites, doz. bnchs.	2 0	3 0
Maidenhair Fern, doz. bnchs.	4 0	8 0
Mignonette, doz. bnchs.	2 0	to 4 0
Mimosa or Acacia, bunch (French)	0 9	1 0
Narciss, white (French) dozen bunches	1 0	2 6
Orchids, var., doz. blooms	1 6	12 0
Pelargoniums, doz. bnchs.	4 0	6 0
Roses (indoor), doz.	0 6	1 0
,, Tea, white, doz.	1 0	2 0
,, Yellow, doz. (Perles)	1 6	4 0
,, Safrano (English) doz.	1 0	2 0
,, ,, (French) per doz.	0 6	1 0
,, ,, ,, per 100	5 0	7 0
,, Pink, doz.	1 0	2 6
Smilax, bunch	1 6	2 6
Tuberoses, 12 blooms	0 3	0 4
Tulips, doz. blooms	1 0	1 6
Violets, doz. bnchs.	1 6	2 0
,, Parme (French), bunch	2 6	3 6

A MODEL.

(*Continued from page* 518.)

Although the Mangolds and Carrots would all be drawn off the land, there should be enough metal left to grow a good crop of Barley. The seed must be put in early, say between March 1st and 15th, when the weather is dry. If there is any doubt as to the land being in good enough condition, or if the young Barley shows signs of turning yellow in May, a light dressing of nitrate of soda, say 80 to 100 lbs. per acre, would insure at any rate a crop of straw, and as there would be no young Clover plant to consider a little risk might be run of getting the crop a bit on the heavy side. It is not a bad fault to have too much.

The 7 acres of Turnips and Swedes would be something like equal acreage of each. The Swedes would do with about 10 loads of muck per acre if it could be spared; they would be drilled during fine warm weather between May 21st and June 10th, the land of course being cleaned in autumn if possible, otherwise in spring. Six cwt. of superphosphate with the manure would be enough top-dressing per acre

but without manure 3 cwt. superphosphate, 3 cwt. bonemeal, and half cwt. nitrate of soda ought to grow a good crop. As the Swedes would be drawn off, or at any rate most of them, we should advise the Monarch or Elephant type to be grown, as they would pay for storing by extra weight and quality.

Part of the Turnips would be taken off, part eaten by the ewes, so they had better not be sown until about June 10th. The same hand tillage as for Swedes without the manure or nitrate is advised. Fosterton Hybrid and Green Globe are excellent for growing on most soils. Both Turnips and Swedes to have a good chance must be drilled when the land is warm and dusty, and the soil cannot be too fine.

The next crop—Oats—will not take much labour or management. They had better be drilled as soon as the land is available after March 1st, and the weather suitable. Eight cwt. of basic slag harrowed in with the seed will benefit both this crop and the next; but the Oats would do with 1 cwt. or 1½ cwt. of nitrate of soda after they are well up.

After roots 14 pecks per acre would be as much seed as necessary, and a good drill would put 14 pecks of Oats on; but after seeds many people sow 16 or even 20 pecks. In such a case it is best to drill the seed twice, 10 pecks each way; the seed gets thus well distributed over the ground, a thing we like to see. But we hear someone say, "How about the hoeing?" If the land is in good cultivation and condition none should be required, for weeds ought to be few, and these few should have a very bad time amongst 20 pecks of vigorous Oats.

We have now come to the end of the course, and the next crop would be Potatoes 4 acres, Tares 3 acres, as dealt with before. Of course, circumstances may make alterations in the above treatment advisable. For instance, on very rich land the top-dressings for corn may be almost or quite unnecessary, whilst on very light soils they might with advantage be increased. The differences in soils and locality is so great that what may be right for one field may be wrong on the other side the fence, and we can only dogmatise as to what is generally advisable.

"Practice makes perfect" is a proverb especially applicable to farming, and special knowledge, only to be gained by experience, as to the peculiarities—we might say the eccentricities—of fields is so valuable to the cultivator that that proverb must at once make way, or at least find room, for another—viz., "A rolling stone gathers no moss." This is the chief reason why farmers are loth to leave the old holding for a new one.

Now we come to the live stock, and will take the horses first. Four draught horses would be kept; one pair to work regularly on the land, the other to do carting work for the Hall whilst filling up time on the farm, but always available for the land when urgently required.

Besides these four a brood mare of the Shire breed would be a useful item, and might be a profitable one. If one or two of the other four were mares, and attempts were to be made to breed from one of these in addition to the brood mare, there would be more certainty of a foal each year, and in this connection we would rather look upon the brood mare as an extra farm horse than as a brood mare pure and simple, and work her as the other horses when she is not in foal.

With two breeding mares one foal should at least be produced per annum; thus, with anything like good luck, the stock would be increased and an animal be spared occasionally to be sold at a fair price and help to pay for the horse corn. If a foal were reared every year, a horse should be spared every year, and, allowing for casualties, at any rate four years out of five. It is most profitable for the farmer to sell his horses at six or seven years old. If anything like sound they should realise £50 at that age, if no more. Thus, if the stock be kept up and £40 per annum be realised, there should be good reason for satisfaction.

Horse corn is an important matter. Oats are the natural food, but are rather expensive if cart horses are to be kept on them in good condition. We prefer equal portions of crushed Oats, ground Maize, and bran; 12 lbs. of this mixture per day, given with cut Barley or Oat straw, would make a good ration, but a little hay in the rack as well would be a valuable addition. It is an excellent plan to keep a water-tub always full in the stable. Into this water half a pound of linseed meal a horse per diem should be put, and if it is well stirred up and the animals watered from no other source, there will be little trouble from colic or gripes.

Foals must be well fed when young, particularly for six months after weaning. Crushed Oats and bran are good foods, but not Maize for young animals. Young horses are, except the weather be very severe, better kept out of doors as much as possible; and in snow time they will be as well out during the day, if the paddock be sheltered at all. Food is of more consequence than shelter for young horses, as long as they have a shed to fly to when so inclined. Grass in midwinter must not be counted as food, but the horses fed as if there were none. With good food and plenty of exercise, little anxiety need be felt as regards the weather.

WORK ON THE HOME FARM.

Martinmas, with its feastings and hirings, is a thing of the past. There has been no lack of servants wanting places. Strikes, serious in their own localities, tend to cheapen labour in other districts, but the supply of hands fully qualified by teaching and experience to carry out the work of the farm, never was more scanty.

With the farmer now it is not exactly "Hobson's choice," but a choice amongst a number of more or less useless hands, to find out, if possible, which is of any use at all. Farm servants who will be up to feed the horses at 4 A.M. are almost unattainable, and it looks very much as if the agricultural day would have to be shortened, for horses must have sufficient time to feed properly before going out to a day's work.

The want of proper qualification amongst the younger hands makes one naturally cling longer to the older ones, but we should like to utter a word of warning to farmers employing old or delicate men. Many employers have recently found themselves obliged, when engaging or re-engaging yearly hands, to make an express limitation to the period during which they shall be liable to pay the servant's wages whilst he may be kept by illness from his work.

We have and are ourselves suffering from a lack of caution in not having made any express stipulation. The law binds the employer to pay the wages of the servant during temporary illness, unless there be any over-riding agreement to the contrary; but the term "temporary illness" is a very elastic one, and it is much easier to guard oneself when making the engagement, than to prove permanent incapacity against a man, when it is so much to his interest to show that there is a probability of his coming back to work. Of course, in the case of an old servant, no employer worthy of the name would wish to turn him away if he could possibly see his way otherwise, but we are speaking of ordinary, not exceptional, cases, and having been bitten ourselves, would advise our readers to be shy.

The weather is very stormy and wet, and farm work is at a standstill. Tenting late sown Wheat against the ravages of larks is the serious work of the moment; as Professor Wrightson says, they are worse than the sparrow, as mischievous as mice, and as bold as brass. The worst of it is that these are not the birds which have sung to us during the summer, but are merely immigrants from abroad.

[We suspect if our practical and patriotic correspondent lived in the environs of London he would be an antagonist of Italian "hurdy-gurdies."]

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

DATE.		9 A.M.					IN THE DAY.				
1897. November and December.		Barometer at 32° and Sea Level.	Hygrometer. Dry.	Hygrometer. Wet.	Direction of Wind.	Temp of soil at 1 foot.	Shade Temperature. Max.	Shade Temperature. Min.	Radiation Temperature In Sun.	Radiation Temperature On Grass.	Rain.
		Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Inchs.
Sunday	28	29·705	42·9	41·9	S.W.	45·1	50·1	41·8	51·9	37·4	0·089
Monday	29	29·372	41·3	36·2	N.W.	43·6	44·1	37·7	65·8	32·4	0·010
Tuesday	30	29·710	44·2	42·5	S.W.	41·2	51·7	3 ·9	56·8	26·9	0·040
Wednesday..	1	29·477	36·7	35·4	W.	42·2	45·1	35·6	60·8	30·5	—
Thursday....	2	30·032	36·0	34·4	N.	41·1	42·1	34·6	64·1	31·1	—
Friday	3	30·296	36·0	33·1	N.	39·9	41·0	3 ·6	57·2	25·3	—
Saturday ..	4	30·202	29·2	29·2	N.	38·6	37·7	26·4	39·2	22·6	0·010
		29·828	38·0	36·1		41·7	44·5	34·1	56·5	29·5	0·149

28th.—Damp morning, with rain at 10 a.m. Rain from 4.30 to 6.30 p.m., and almost cloudless after. Gale from about 3 p.m.
29th.—Strong gale early, and windy day; almost cloudless throughout.
30th.—Dull and showery early; fine day, with frequent faint sun and bright sun at times; smart showers in evening.
1st.—Bright sunshine from sunrise till about 3 p.m.; overcast after.
2nd.—A few melting snow crystals early, bright sun from 9 a.m. to noon, but cloudy at times after.
3rd.—Sunny almost all day; bright night.
4th.—Cold with fog all day, thick and dark in morning.
Rainfall still small in amount.—G. J. SYMONS.

Journal of Horticulture.
THURSDAY, DECEMBER 16, 1897.

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FRUIT NOTES.

THOSE who have opportunities of judging cannot fail to notice how fruit is appreciated by all classes, and how largely it enters into the diet of those who are able to get a supply of good quality. Of this we have abundant evidence. The dessert is never taken out of our dining room, and still the guests after their preliminary look through the gardens, including the fruit room, often pay a daily visit to it afterwards, and I take it as a healthy sign for gardening that they put a few Apples and Pears in their pockets to eat later on.

For some years past we have been in the habit when large parties were being given for several nights in succession of turning the dining table into a miniature fruit show. The fruit is placed on the cloth (no dishes are used), a bunch of Muscats, 3 lbs. in weight, is placed at each end of the table, the Apples and Pears are shown on Vine leaves, five or six fruits of each, according to their size. The fruits are not crowded together, but space is left for a few small glasses and a little trailing material. Only fruit that is fit for table is used, and all varieties are labelled. Apples have appearance to recommend them if they are not of the Ribston and other well-known varieties. Pears are all in an edible condition. For trailing material a fortnight ago we used Ampelopsis Veitchi. A few pieces were laid on the cloth, and some well coloured sprays hung loosely from the candlesticks. The glasses were filled with canary coloured Chrysanthemums, and a few dark blooms (Wm. Seward) mixed. It may not have looked like a "scene from fairyland," but I know that several of the names were taken down, the position the trees grew in noted with other information, and the varieties have since been added to several collections. This has occurred for several seasons by people coming from different parts of the country and who move in the "highest circles."

We have a good collection of fruit trees, for which I must thank my predecessor. When I took charge (July, 1891) I found, in addition to the older trees, many young bush Apples purchased the previous season, and these had been temporarily planted a few feet apart. In the autumn we trenched a piece of ground and planted the

young trees 6 feet asunder each way, intending to take out every other row and every other tree later on. The piece of ground to be eventually covered is about an acre in extent. Each season since we have cropped with vegetables that are cleared off in time for the land to be trenched in the autumn. Of course, all could not be done the same season. That nearest the trees was worked first, trenching being repeated the three following seasons. This meant work, especially as the pick had to be used to break up all that was turned over after the first 15 inches had been shovelled off. All the ground that is planted has been worked at least 30 inches deep. We take part in whatever work is in hand, and enjoy being in the trench with the men. The pick often changes hands, but the work is done cheerfully. A basket of Apples is brought out when work of this description is going on, and those who use a spade and fork, and use it properly, know how refreshing one or two are occasionally through the day.

Two years since we commenced to thin out the trees, taking the largest first, and this season we have been at them again. The trees vary in size, but are from 10 to 12 feet high, and 6 to 10 feet through. We prune according to the strength of the growths. The stronger they are the longer they are left, and the weaker they are the harder they are cut. The strong shoots are left from 12 to 18 inches, and the weak from 6 to 9 inches. Our object is to have trees with branches strong enough to support the fruit. Since the trees were first planted they have given a full crop of fruit for their size, many trees requiring thinning, and this we account for by the condition of the land, for the depth of soil not only supports the present season's crop, but is able to retain sufficient moisture to feed or plump up the buds for the succeeding crop.

The blossom on our trees seems to stand a little frost, and the fruit drying winds; and whether this is the result of the liberal way we have treated them at the roots—for we used manure freely in breaking up the bottom soil—we cannot tell, but it seems to us that fruit trees want support to counteract the sun and drying winds in the spring if blossom and fruit are to hold on. We are supported in this view, for since we took some of the heavy soil from round our older trees, filling up with soil from the vegetable quarter mixed with charred refuse and mortar rubble, we have had no cause to lament an unfruitful season.

Four years ago we started to put a few on the market. They were only cwts., but they brought 16s. 8d. per cwt. The following season we sent them to a midland town (buyer paying carriage) at 14s. per cwt. dessert, 11s. culinary. Last year in our local market we received 8s. 4d. per cwt. This year we shall have a few cwts. to dispose of. We have only sold a few early Apples up to the present at 2d. per lb. Last week we were told if we kept them a little longer they would give 16s. 8d. per cwt.

We are convinced that fruit can be grown as well and profitably in Shropshire as in other counties which are supposed to be more favourable to fruit-growing. A few essential conditions are necessary—1, That the land be well drained, or where surface water does not hang about, this means fog, and fog means frost late in the spring and early in the autumn when there is none on higher and drained ground. 2, Shelter from rough winds, which usually come from the S.W. The earliest varieties should be planted in the most exposed places, as the fruit from these trees would probably be gathered before the gales which usually sweep over us in September. It is these that do so much damage to our late and most valuable crops of Apples and Pears. 3, Sufficient depth of soil for the trees to make continuous progress after it has settled down. Two feet is not too much for trees from which profitable crops are expected for a number of years.

To plant trees in 18 inches of comparatively loose soil, leaving the subsoil as hard as a turnpike road, must eventually lead to failure. Planting closely together at first has much to recommend it. Young trees have a tendency to make strong growth, which is checked by lifting. The strong roots are made fibrous, and other roots induced to multiply. The strong shoots then become studded with fruit buds, advantages from which the trees ever derive benefit.

Our collection was formed with a view to exhibition, and is composed of the best varieties for that purpose. We are satisfied with nearly all the sorts, very few but which give us a good crop. We notice that there is always a demand in our market for early Apples, Gladstone, Irish Peach, Lady Sudeley, Beauty of Bath, and September Beauty selling well. In the late autumn our market is glutted with windfalls and other Apples of poor quality, and those who have good samples find it advantageous to store until near Christmas.

A rack has been fitted in one of our rooms that was formerly used for other purposes. Two large windows face the south, and the sun shining on these raises the temperature of the room. This is detrimental to the late keeping of the fruit, but by careful handling and fitting the windows with straw-covered frames, we keep a supply until April. The room was heated by a gas stove, which two years since had to be removed. We have sometimes thought too much heat found its way into rooms where fruit was stored, and have been surprised during a severe frost to find how little the temperature of the room varied.

The space between the fruit trees that have been thinned is cropped with Broccoli, not too near the trees. The plants are dropped in holes made with an iron bar. The ground has settled down and become firm by treading, and this is the only place we have found where our Broccoli crop can be depended on to come through the winter with any degree of safety.—S. B. O.

[Our correspondent has favoured us with a small sample of fruits. One of the Apples measures 14 inches in circumference, and all are admirably grown.]

"FAIR DEVON."

"WEATHER," said a Devonian gentleman, "Oh! yes, we have some variation in the weather. For instance, we have the 'dry drizzle' and the 'wet drizzle,' as we say in Devonshire." "Then what do you call this?" I remarked, the aspect of the country from the railway carriage windows reminding one of the West of Scotland, dense mists and lowering clouds partly shrouding the distant hills, while a steady downfall of rain was of ominous portent to an autumn traveller. "This," answered my companion, with a glance which seemed to combine pity and grim delight, "this is only the dry drizzle, we shall get some rain later on." Such was my introduction to one of the fairest counties of England, and though I knew the rainfall was much above the average, yet I had not realised its full meaning. A few hours spent in travelling through the rich valleys, and amongst its verdure-clad hills, did more to show how greatly the climate and productions of a district depend upon its rainfall than a year of reading and theorising could have done.

So assured are the Devonians they have an exceptionally wet county that they have generally adopted a kind of parodied meteorological forecast, which runs as follows:—

"The west wind always brings wet weather,
The east wind wet and cold together.
The south wind surely brings us rain,
The north wind blows it back again."

They even carry their weather jokes farther than this, as the lines appended set forth:—

"If the sun in red should set,
The next day surely will be wet.
If the sun should set in gray,
The next will be a rainy day."

Though it is not quite so bad as the natives would have us believe, Devonshire is undoubtedly a moist portion of our island, as an examination of the returns given in Mr. G. J. Symons' "British Rainfall" will prove; but the same tables also show how great a range of variation there is in the county. Taking the four past years, we find that in 1893 the lowest amount registered was at Teignmouth, 23·79 inches; the highest at Princetown (Dartmoor), 67 55 inches. In 1894 the lowest was 34·78 inches at Exeter, the highest being 90·65 inches at Princetown; but at three places in that year over 70 inches were recorded, and at ten places over 60 inches. In 1895 the lowest was 30·05 inches at Budleigh-Salterton, and the highest 74 65 inches at Princetown; while in 1896 Exeter had again the lowest in the county—namely, 22·43 inches, an exceptionally low record; Princetown still being the highest with 63·15 inches. A study of the rainfall of Devonshire is extremely interesting, as it serves to illustrate some of the phenomena connected with great differences in climate and vegetation in other portions of Britain and the world. Where there are mountain ranges to intercept the moisture-laden currents of air, as in the Himalayas of India and the Andes of South America, the rainfall (and consequently climate, as it affects vegetation)

varies greatly, according as they are opposed to the prevalent winds or not, from 200 to 600 inches per annum down to 22 inches, or less. The cold heights of Dartmoor, some 1400 to 2000 feet above sea level, serve in a similar though minor degree to condense the moisture from the warm winds blowing off the Atlantic, and thus we get the extremes here noted.

The horticultural importance of the annual rainfall in any district is very great; in fact the two points which most closely concern the gardener in meteorological observations are the rainfall and the amount of sunshine, for upon these he is dependent to a very great extent for his success with outdoor productions. In the county under notice it is fortunate in one respect that a good portion of the soil is porous and naturally drained, for were it generally heavy it is difficult to know what the result would be, as many find 25 inches of rain on a heavy soil more than they like if it be not equally distributed over the year. At the same time such an amount of rain passing quickly through the soil must wash out (particularly in winter) a large quantity of soluble salts of importance to vegetation. The experiments at Rothamsted, in Hertfordshire, where the rainfall is not above the average, have proved what an enormous waste there is constantly taking place in this way, and the greater the rainfall the greater the loss. There is some compensation no doubt in the fact that the rain itself also brings certain fertilising agents to the soil, and to this must be partly attributed the vigorous growth of plants observable in the moist districts of our islands, notably in Ireland and the West of Scotland. Beyond this in rocky districts heavy rains hasten the decomposition of the stone, and thus help to keep up the supply of substances available for plants.

Upon the development of many trees an abundant rainfall has a most marked effect, especially when it is combined with a mild climate; thus it is that Devonshire is famed for its collections of handsome trees, particularly Conifers and evergreens, of which Bicton and Endsleigh possess some magnificent specimens. The county has also been famed for its orchards and Apples, and even now we find the official statistics giving the extent occupied with fruit trees at over 26,000 acres, thus sharing with Somersetshire, Herefordshire, and Kent the largest acreage in Great Britain devoted to fruit. But the "fame" which attached to the Devon orchards has been allowed to decay with the trees, of which thousands can now be seen in a condition fitting them more for consumption as fuel than for any other purpose. It is true there are bright spots where able cultivators are demonstrating what skill can accomplish when aided by advantages of soil and climate; but these constitute a very small proportion of the 26,000 acres.

It is contended by some that the climate is too moist for successful Apple culture, and the lichen-loaded branches of the old trees are pointed to as examples, but this does not afford the required explanation. A long period of general neglect is the undoubted cause of most of the bad results too plainly visible in every direction, and in conjunction with this must be taken the fact that almost all the old orchards are in grass, a condition which in such a wet district cannot be otherwise than unfavourable. The adverse influence of grass growing over the roots of young Apple trees has been fully demonstrated at the Woburn experimental fruit farm, as can be seen from the illustrations and description in the report for 1897 by the Duke of Bedford and Spencer Pickering, F.R.S. That this influence is exerted to the injury of older trees can also be proved by a comparison between orchards in the same district on grass and cultivated land. In the course of my travels I have seen such differences strongly marked in the conditions of the trees; indeed I have observed differences in favour of those orchards where the grass was kept close grazed as compared with others where the grass was allowed to become long and rank. It seems to me that the explanation of the unsatisfactory state of many orchards in grass, apart from the root competition, is to be found in the fact that the evaporation is so much greater from grass than from soil, and much of this moisture is condensed upon the stems and branches. At one of the North American experimental stations, the results of five years' observations showed that from turf 85 per cent. of the average annual rainfall was evaporated, from bare and undisturbed soil 70·7 per cent. evaporated, and from bare, but cultivated soil, the evaporation only amounted to 63·9 per cent. of the rainfall.

The effects of such a large evaporation on grass land must be proportionately increased where the rainfall is as heavy as it is in Devonshire, and it is not difficult to understand why lichens and mosses flourish on the stems of the trees where they are so abundantly and constantly supplied with moisture from above and below, no effort being made to keep the trees clean. With a cultivated, clean, well-drained soil around the trees a fairly heavy rainfall is not adverse to the Apple; indeed it is favourable to the development of all the large fruits and the varieties for cooking. Nor is it opposed to the production of colour and flavour, as might be supposed. I have had Apples in the wet districts of the United Kingdom, the West of Scotland, the South of Ireland, the West and South-West of England, equal in most respects, and superior in some, to examples of the same varieties from the drier eastern or midland regions. Though familiar with the eastern counties from Essex up to Northumberland, where the rainfall may average from 25 to 30 inches per annum, I do not remember remarking that the flavour of the choicer Apples is superior to that of the same varieties in the wetter counties; in fact, I am inclined to think that, other conditions being favourable, the Apple rather delights in an abundant rainfall, but it stands in the greater need of the cultivation which is far too frequently denied to it.—VIATOR.

NUT GROWING AND PRUNING.

(*Continued from page* 546.)

Now let us pass on to the pruning required during the following winter. The leading shoots will then need shortening to various lengths, according to their strength. Strong ones may be shortened one third of their length, those moderately strong one-half, and weak shoots ought to have two-thirds cut away, so as to cause them to break stronger the following year. In each instance the bud to which the shoot is shortened must be an outward one; the young shoot produced from it will then grow from instead of towards the centre of the tree. It is in this way that basin-shaped trees with open centres are formed. It is also important to remember that the terminal bud left should be a wood bud. This shortening of terminal shoots must go on in the same way each year, to cause spurs to be produced evenly throughout the entire length of the main branches, until the trees have reached the desired height, from 5 to 6 feet, then all leading growths ought to be cut back to two eyes each year. It is an easy matter with well-managed trees to keep them near the above height, as when necessary some of the old wood can be cut away back to a well-placed spur. This kind of pruning may be continued for fifty or 100 years, and the trees still remain well furnished with bearing wood from top to bottom.

Having now dealt with leading shoots, we will consider the treatment necessary for side growths, a matter of vital importance, because it is to such that we must look for the annual crop. The distinction between male and female blossoms must now be noted. The male is the well-known catkin, such as the common Hazel produces freely, the female is like a small pinkish coloured brush. The buds which produce these minute flowers can generally be distinguished from wood buds by reason of their larger size and plump appearance, as in the case of other fruit trees, but they do not flower till February, and as it is necessary to retain as many catkins as possible to insure fertilisation, pruning should be delayed till the end of February or March. In warm, still weather, it is a good plan to tap the branches to disperse the pollen the catkins carry. When such are not freely produced branches of the wild Hazel may with advantage be placed upon the upper parts of the cultivated trees.

Although the above may seem a somewhat lengthy introduction to the real work of pruning, it is nevertheless of importance that the points enumerated be fully understood, hence my excuse for indulging in a certain amount of perambulation. Being armed with a sharp knife and a short saw, the pruner must go over every main branch carefully. In a young and vigorous tree strong side shoots will be found throughout the entire length; some of these must be cut clean away where they appear in the least crowded, the others shortened to two or three buds. The basal buds will usually be wood buds, and often the second or third flower buds, with perhaps a catkin depending from the bud above. In such a case the extra bud should be left for a time to be cut away after the whole of the fruit is set. Near the tops of the branches catkins are produced the most freely, and the shoots may be left a little closer together there; still the aim of the pruner should be to have male flowers situated as evenly as possible over the whole surface of the tree. From the base of these closely pruned side shoots small twigs will be sent out the following year and it is from them that the principal portion of the crop is obtained If too numerous to admit of a free circulation of air some of these should be removed in July, very strong ones stopped or entirely removed.

After the side shoots have been pruned in closely for some years they begin to show signs of age; some of them should therefore be shortened each year, cutting them back to a young shoot or wood bud near to the main branch. It is by constant attention to this matter that the trees are kept well furnished with fruitful wood throughout their entire length. Sometimes a shoot carrying a large cluster of catkins may be left from 6 to 8 inches in length, as it is easy to remove it the following season, unless it happen to be then carrying several good bearing shoots.

Numbers of strong shoots are always produeed in the eentre of Nut trees; many of these should be removed in July or August. In Kent they are ealled wands, and are used for packing fruit. Fairly strong shoots will also appear in various parts of the tree; the points of these ought to be twisted off in July. This helps to equalise the sap, and plump up basal buds. In Nut growing a good deal of trouble is eaused by suckers whieh spring from the roots near the stem. These should be hoed off as they appear, but a more radical operation is neeessary to keep them thoroughly in eheek. The plan usually adopted is, in the autumn to remove the surfaee soil for a distance of 2 feet around the tree stem, pull up every sueker to be found, and if the tree is old lay on a eoating of manure, and eover with soil from the open spaees.

The ground between Nut trees should be forked over during autumn or early winter, but not deeply, only disturbing it to a sufficient depth to bury weeds, leaves, or any manure that may be applied. As the pruning—for reasons above given—is deferred till spring, this digging with many eultivators preeedes it. Shoddy and ehopped rags are often used as a manure for Nuts; but burnt refuse or farmyard manure is, of course, also suitable for the purpose—the latter in partieular where the soil is poor and shallow.

VARIETIES.

Kentish Cob produees the largest Nuts, and is the surest cropper. Red Filbert, White Filbert, True Kentish, and Duke of Edinbugrh are good flavoured Nuts, but somewhat tender when planted in exposed plaees. Cosford and Pearson's Prolific are sometimes planted at intervals amongst others, beeause they produce a large number of eatkins.—KENTISH MAN.

REST IN PLANT LIFE.

(*Concluded from page* 519.)

ALTHOUGH, generally speaking, the winter season is one of rest in the vegetable kingdom, we are aware that there is a great deal of unseen aetivity amongst a thousand things in their dark eold bed. Many kinds of bulbs, having enjoyed a good siesta after their spring or early summer labours, are awakening into life, and their feeders are ramifying under what is to them congenial eonditions. A number of the ehoieer varieties of these plants are doubtless benefited by annual lifting, this giving to them a more perfect rest and ripening than our ehangeable elimate often affords, besides the benefits conferred by replanting in fresh soil. A little attention in this direetion will often prevent disappointment with some at least of those bulbous plants which, being natives of a more pronouneed elimate than ours, seem unable to adapt themselves to the ehange without this annual aid.

Undue delay in planting is, however, dangerous, and many of the troubles experienced by cultivators of bulbs are partly attributable to this eause. Not wholly so is obvious, for some of the evils arise from an imperfect method of storage, in whieh unnatural exposure to light, to moisture, to paeking in bulk, possibly in a medium eonducive to heating—all favouring excitement, whieh is inimieal to the quiet eonditions of rest. In any ease the greatest care is unable to prolong the resting period beyond certain limits, for the ealls of Nature are distinetly heard and responded to by the subjeet, hei ee we may often see at the potting of Dutch bulbs when too long deferred, Hyaeinths and Tulips particularly, that growth has eommenced, and eommeneed at the wrong end; and it is not seldom the case when this oeeurs to find these misdireeted efforts continued, with little or no attempt at root action to support the embryo flower and foliage, which either perish or are impoverished by inanition. One thing may be remarked by the way, and that is—the eoal ashes usually employed as a medium for plunging newly potted bulbs is, I believe, the worst material that can be used for the purpose, so far at least as the covering portion is concerned. Any loose friable soil is infinitely preferable, and partly deeayed leaves, if free from slugs, ean hardly be excelled.

With all subjeets of the vegetable kingdom within the confines of our own insular experience frost alone is the agent whereby vitality is completely arrested, and with many things this appears to be distinctly advantageous. Where the elimatie influenees are totally at variance with our own, and the dry and rainy seasons eontrol the rest and growth of plants, similar results are obtained from a widely different cause. That there are apparently some exeeptions to the universal law of rest may to some extent be admitted, in considering the extraordinary and exeessive development of vegetation operating in eertain tropical regions—that of Sierra Leone, for instanee. Nature there appears to allow her subjects little or no rest, unless the sleep of plants, previously alluded to, is the *solatium dulce*. However that may be, the bulk of vegetation, where heat and moisture are so excessive and continuous, is of no less rapid growth than of quiek decay, and in the eontinual building up and pulling down of the same organic material seience would probably allow what ordinary observation might be loth to acknowledge.

During the present abnormal season, in which little or no cheek has been given to the growth of lesser things, we may traee the eause of some trouble whieh ensues in the spring, if not before. For example, amongst those two important members of the Brassica family, Cabbage and Broeeoli, destined for spring use, many vagaries are noticeable, and even the most reliable varieties distributed to growers by firms of high repute, are not regarded as Cæsar's wife, above suspieion. Even by some thoroughly eompetent market growers due allowanee is not always made for this abnormal elimatic influenee, and a case in point eame under notiee some few years since, where ten acres of Ellam's Early Spring Cabbage behaved so badly that complications ensued between seedsman and grower. This had, at least, one good result, leading, as it did, to a rather rigid investigation over a given loeal area, showing indubitably that the seed was blameless. It is, doubtless, a far cry from Crotons (previously mentioned in relation to this subjeet) and Cabbages, but eaeh are equally important, and equally benefited, too, in degree, by rest. The exeitement so mueh in evidenee at the present time amongst our winter green stuff presages from that quarter troubles to come.

Comparatively high temperature, with exeessive moisture, is not, in spite of some immediate advantages to our farming friends in the way of herbage the eattle are yet able to crop, an unmixed blessing. The proeess is exhausting. We are, doubtless, touching upon evils it were better, perhaps, to avoid where no remedies are apparent; yet it is pleasant to note, amongst the observations of a rural life, the anxiety evideneed by a few of our high-class farmers to keep their land well drained, and so return the superfluous water as quiekly as may be to the sea. It is at present, in fact, a daily operation on one farm of some 200 aeres at hand, where my neighbour not only sends his man round daily to see there is no obstruetion to the drain outlets or in the ditehes, which are also annually eleaned up, but keeps an eye upon it himself to see that it is done. Waterlogged land is eold eomfort to all vegetation, and must be ultra-pernicious to it during the season of rest.—INVICTA.

SOLUBLE PHENYLE.

THERE are two points that must be settled before the merits of soluble phenyle as a eure for eelworms can be profitably investigated or discussed. 1, What is soluble phenyle? 2, What is an eelworm?

1, For the information of the general publie it may be stated that "soluble phenyle" does not exist, and is not a recognised chemical material, but is merely a faney name given to a preparation of ereosote patented by Mr. Little in 1876, and sold by the firm of Morris and Little of Doneaster for use as a sheep dip. The ereosote obtained in the distillation of eoal tar eontains "earbolie aeid," eresol, naphthaline, and many other eompounds. It is not soluble in water, and Mr. Little devised a very ingenious method of rendering ordinary ereosote soluble in water. "Soluble ereosote" would have been a more fitting name for this preparation than the one by which it is known. Mr. Little effected the desired object by treating ereosote with resinsoap and a little softsoap.

The composition of Little's soluble phenyle is stated to be as follows:—

	Per cent.
Coal tar ereosote	59·1
Rosin oil...	29·6
Softsoap	5·9
Caustic soda solution	5·4
Total	100·

Messrs. Jeyes eagerly took up this idea, and in 1877 and 1878 took out two patents for a similar preparation, omitting the softsoap, but otherwise praetically the same as Little's. An analysis of Jeyes' disinfeetant gave the following results:—

Ereosote	60·4
Resin	29·6
Soda	2·4
Water	7·6
Total	100·0

Similar preparations have been placed on the market as "carbolised ereosote," and have found use as sheep-dips and general liquid disinfectants. A well-made sample should mix with water without the separation of any oily undissolved ereosote.

For use as a sheep dip these soluble ereosotes are diluted with about 100 times as mueh water, and are then effeetive in destroying the tieks.

Personally I have never tried any of these preparations as garden remedies, and can offer no experimental evidence to throw light on

Mr. Abbey's successful results or Mr. Dyke's decided failure. Mr. Abbey is quite right; Little's original soluble phenyle is of some theoretical manurial value, as it contains 1 per cent. of potash. This means that the application of as much potash as that in Mr. Dyke's dressing of kainit (12 ozs. per square yard) would require over 80 gallons of soluble phenyle liquid for each square yard! The manurial value of softsoap, as applied in washes, is not worth the consideration of any practical man. The potash in soap costs just five times as much as that in a potash manure.

It should be noted that Jeyes' disinfectant contains no potash, and therefore quite free from any pretensions as to manurial value.

The nitrogen in creosite is in the form of highly unsuitable material for plant nutrition, and is not only useless to plants but also capable of doing them serious harm if applied too liberally.

I believe Miss Ormerod was the first authority to recommend soluble phenyle for root eelworms, and that it is quite possible that it may be efficacious.

2, *What is an eelworm?* Many people talk lightly of "eelworms," and point them out as visible to the naked eye. These visible eelworms are not eelworms proper, but mostly the larvæ of small flies, and for *these*, I am told, the soluble phenyle may be sound treatment. The "eelworm" proper, or *nematode*, is only visible under a fairly high power of the microscope, and anyone who can free soil of this pest at small expense would be worth £50,000 to-morrow.

Meanwhile, experiment is open to all, and there is no reason why a reader of this Journal should not be the lucky man. Sugar Beets, Hops, Cucumbers, and Clover are all victims of nematodes. Kainit and lime are the only palliatives at present recognised by scientific experts as of any practical use and application.

Unfortunately, I have not access to diseased Tomato and Cucumber plants, and am at present unable to test "soluble phenyle" or other possible remedies. I would suggest that Mr. Dyke might find success with one of the following materials:—(1) Carbon bisulphide; (2) xanthate of soda; (3) antinonin (potassium nitro-cresylate). 1 and 2 obtainable from Harrington's, City Road, E.C.; 3 from Fuerst Bros., 17, Philpot Lane. 1 and 2 have cured the phylloxera pest of the Vine; 3, a new German remedy for caterpillars and other pests.—HALOGEN.

IN turning my back on eelworm a few months ago I had hoped that this evil pest, with its accompanying discouragement and disappointment, was for my part really finished and done with. However, let me in as few words as possible give the comments for which "W. D." has asked.

I used Little's soluble phenyle at varying strengths, as advised by "Phenyle Adviser" and Mr. Abbey in the Journal. I have kept no notes as to the exact per-centages, as the results of fair trials proved of so little value, but certainly the applications were stronger than those mentioned by "W. D." I have noticed on one or two occasions that after what I thought was a too heavy saturation of the soil in which the plants were growing, there was a slight flagging, such as one may see in Cucumbers when a sudden burst of sunshine follows a period of dull weather, but nothing serious; the leaves did not hang like "wet clothes.' With these exceptions I have not noticed phenyle take any effect on Cucumbers, nor, worse luck, on the eelworm, and I have done with it.—BY THE SEA.

LAST year Mr. W. Dyke recorded a failure with kainit in solution for destroying eelworms in Cucumbers, and on page 547 registers a success with the salt in conjunction with basic slag phosphate—two of the most economic substances, supplying potash and magnesia, phosphoric acid, lime, and iron, also manganese. The latter I, at one time, regarded as of considerable importance in the treatment of parasitic diseases as caused by animal and vegetable micro-organisms. Its value, however, was found to rest upon combination with other substances.

I am not going to enter on another discussion about eelworms, only I should like the Editor to publish an illustrated article I sent him some time ago on root-stem eelworm in Vines, and I do not criticise the article on page 547 further than to say that 4 ozs. of kainit per square yard suffices to kill any species of eelworm known in England, and a solution of it, 2 ozs. to a gallon of water, answers every useful purpose. I say nothing as to bad cases requiring sharp medicine, or deep-rooting plants necessitating more abundant dressings. Cultivators must exercise judgment in this as on all other matters of management in particular cases.

Your correspondent records a failure with soluble phenyle. I wonder if the grower alluded to by Mr. W. Dyke has used the genuine article, for I notice he omits the prefix "Little's," as have other correspondents, and an inquirer recently received a substance from a chemist to order of soluble phenyle labelled "Soluble phenol," and on the purchaser pointing out the divergence between the definition on the label and the order, the chemist said they were the same. Perhaps there were faults on both sides, the orderer not having written "Little's" soluble phenyle and the seller not knowing the difference; hence the mistake, and, if the wrong kind were used, that would account for the disaster.—G. ABBEY.

[The illustrations mentioned will shortly be published, and we think they will be interesting to many readers.]

ÆSCHYNANTHUSES.

GESNERACEOUS plants are some of the most brilliant ornaments of our stoves, the majority of them producing very gaily coloured flowers in abundance, and these seem even more attractive in comparison with the rich diversity of foliage which Palms, Crotons, Dracænas, Alocasias, and innumerable others present. Gesneras, Tydæas, Gloxinias, Achimenes, and Streptocarpus include many handsome plants of great value not only for the stove but for cooler houses also, though the majority are more at home in a rather high temperature.

The genus Æschynanthus, to which especial attention is now called, similarly comprises several species of much beauty, particularly as basket

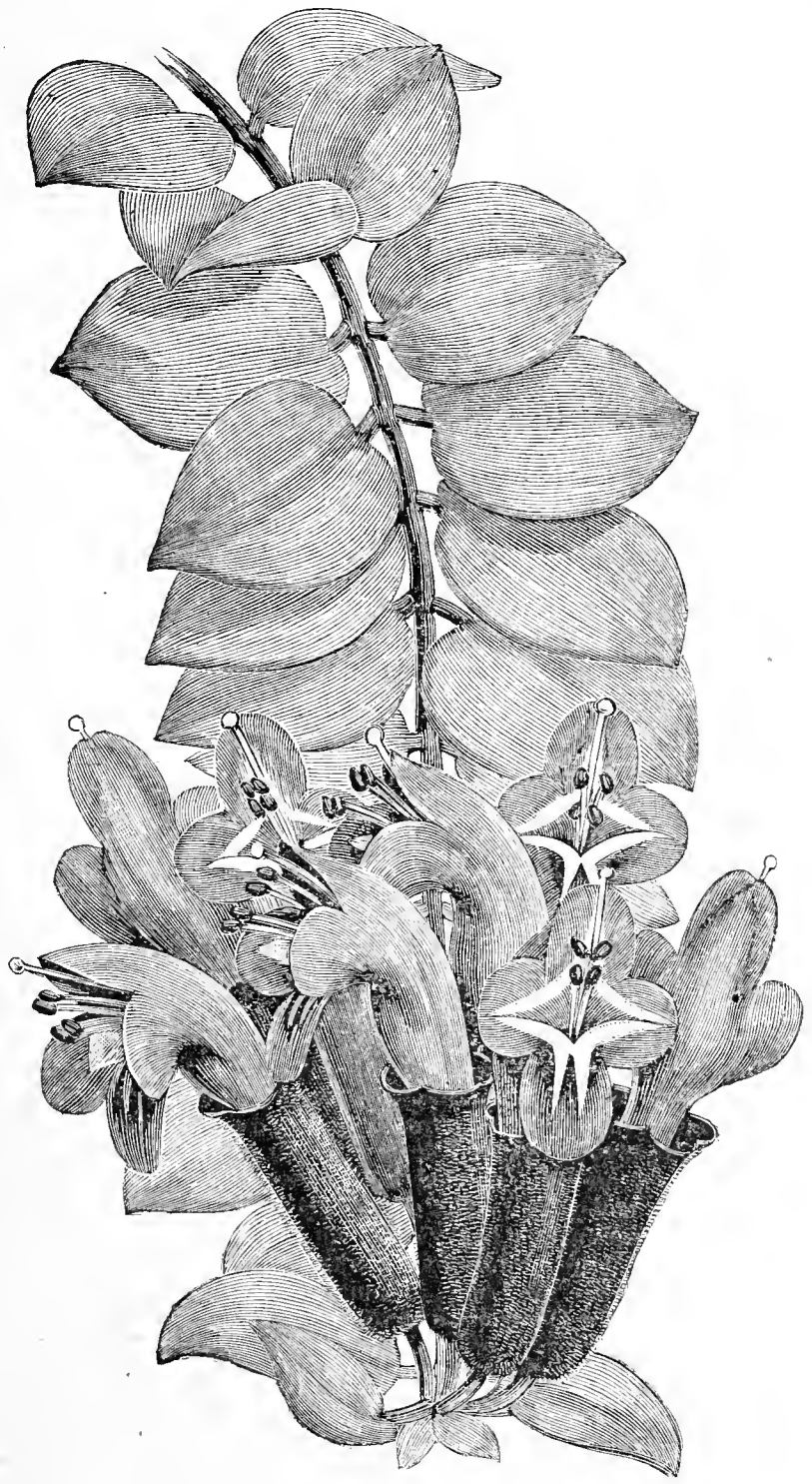

FIG. 83.—ÆSCHYNANTHUS TRICOLOR.

plants, for which their epiphytal and pendulous habit well fits them, and in gardens where they are carefully grown no better plants for that purpose could be desired. The rich scarlet and orange shades distinguishing their flowers are unrivalled, and the blooms, being produced in large trusses or clustered closely along the stems, have a very imposing appearance when pendulous from elegant baskets near the path of a stove. The plants are not more difficult of management than many other epiphytal plants; but it is no use attempting their culture in any house where a high and moist temperature cannot be maintained with regularity, and perhaps most of the failures that occur in the growth of these plants are due to a misapprehension of their requirements in this respect. The baskets should be prepared in the ordinary way with a layer of large potsherds and some pieces of charcoal, over which a layer of rough moss or peat can be placed, upon which the plant should rest, with good fibrous peat in lumps placed firmly round the roots. Water must be liberally but judiciously supplied; and if at any time the temperature becomes unduly reduced the amount of water given must be proportionately

limited, or the plants will soon become unhealthy, and when once they get into that state it is very difficult to insure their recovery.

A few of the species are adapted for culture in pots. Some cultivators prefer peat alone for the species under pot culture, with thorough drainage, but a little turfy loam incorporated with the peat is beneficial. But in that case sand should be also used unless the pot contains a large proportion. Both the baskets and pot plants must have a warm position in the stove, and then little difficulty will be experienced with them.

Æ. speciosus is one of the most handsome, its large scarlet and orange flowers being produced in trusses of sixteen to twenty, and with several of these on a plant of moderate size in a 5 or 6-inch pot the effect is most striking. Another valuable quality it possesses is the remarkable durabilty of the flowers, which last in good condition for some weeks. This plant was found by Mr. Thomas Lobb growing upon trees in damp woods on Mount Asapan in Java at an elevation of 2000 feet. Æ. fulgens was also collected by Mr. T. Lobb in Moulmein. It approaches the above in habit, but is more drooping. The leaves are large and ovate, the flowers being 3 inches or more long, scarlet streaked with yellow in front, and are borne in large heads.

Æ. cordifolius, obtained by the same collector, is a native of Borneo, with leaves and flowers of moderate size, the latter about 2 inches long, deep scarlet streaked with black in the throat, and produced in pairs or triplets in the axils of the leaves. This is well suited for a basket, as also is its near relative Æ. tricolor (fig. 83), both being of slender habit. The last-named is similarly a native of Borneo. It has small ovate leaves, the flower being about 1½ inch or 2 inches long, scarlet streaked with orange and black.

Æ. javanicus is a showy form, with deep scarlet flowers streaked with yellow, and borne in the axils of the leaves near the point of the stems; while Æ. Lobbianus ought to be included in every collection, its rich scarlet corollas contrasting so well with the deep purple calyx. All these succeed best in baskets. This plant is especially useful owing to its free growth and flowering, requiring rather less care than the others, and the flowers last for a great time.—C.

NOTES ON PEARS.

THE Pear crop of the past season will be remembered as an erratic one, some shy cropping varieties having carried full crops by the side of others that were complete failures, although, as a rule, reliable croppers.

Williams' Bon Chrêtien, than which for cropping we have no variety more reliable, especially as pyramids and bushes, was this year a complete failure, not from lack of bloom, but possibly from the fact of our having 9° of frost when the trees were in full flower. Yet by their side, also in blossom, Beurré Diel carried a full crop, which for size and finish was a record. A Marie Louise on a wall, with a west aspect, trained horizontally with geometrical precision, gave only a very light crop. The same variety as a pyramid, 15 feet high, bore a good crop of large fruits.

Duchesse d'Angoulême as pyramids carried scarcely a Pear, but on upright cordons in the open there was about half a crop of very fine fruit. Beurré d'Amanlis, a grand Pear to succeed Williams' Bon Chrêtien, either for market or private use, carried half a crop of large fruit, but did not finish so fine a colour as usual. As pyramids the delicious Doyenné du Comice never bears a very heavy crop, but this year it has been above the average. As oblique cordons on walls this variety gave a heavy crop of smaller fruit. Comte de Lamy, although a small fruit, is one of the best flavoured Pears for October we have, and it possesses the additional advantage of being a constant bearer. This year as bushes it has been below the average in quantity, but above the usual size.

Zéphirin Grégoire, a very reliable bearer, has this year given us a poor crop of small fruit. Intending planters, not altogether carried away with the modern craze for size, should not forget this variety, as for British gardens a richer flavoured variety does not exist. It is "rich and sugary," with a delicious aroma all its own. The crop of Winter Nelis, both as bushes and on walls, is much below the average, and the same remarks apply to Glou Morçeau. Louise Bonne of Jersey has borne good crops, both as pyramids in exposed situations and as cordons on walls.

Of the very useful late kinds Joséphine de Malines and Bergamotte Esperen head the list, both giving good crops, but of small size fruits. Beurré Rance on a wall with a west aspect was a very light crop, and Easter Beurré as bushes little better. The latter has generally to be used for stewing, as it very seldom ripens properly, and the same may be said of Knight's Monarch.

The following varieties have carried fairly good crops as oblique cordons:—Pitmaston Duchess, Marie Louise d'Uccle, Brown Beurré, Beurré Clairgeau, Souvenir du Congrès, and Madame Treyve. Very few fruits have been afforded by Clapp's Favourite, Passe Colmar, Beurré Bachelier, Passe Crasanne, and Nouvelle Fulvie.

Another peculiarity about the season in connection with Pears—at least, with us—is that they are all ripening at least a month earlier than usual and, what is worse, remaining a much shorter time in prime condition. All our efforts to keep them as cool as possible seem of little avail; but no doubt the close mild weather we have had the last few weeks has had something to do with this undesirable state of things.—J. H. W.

ABOUT DENDROBES.

THE majority of the species comprised in this genus are now at rest, but a few of the earlier flowering kinds are already giving us of their beautiful flowers. The well-known D. aureum, for instance, a modest looking flower, not nearly so showy as many others, yet remarkable in being one of the parents of many of the finest hybrids in existence. D. Ainsworthi, D. Leechianum, D. splendidissimum, and its variety grandiflorum to wit, to say nothing of the secondary hybrids D. chrysodiscus, D. euosmum of the older, and many new ones. These are choice and beautiful plants that owe their being partly to the fragrant and pretty species in question.

The plant is too well known to need any description, and its treatment just now is very simple. Plants in flower should be kept in a fairly dry and cool house, in order to prevent, if possible, the young growths starting out of season. Those advancing for flower are best in rather more heat, but not too much atmospheric moisture, this being apt to cause the production of growths instead of flower buds. Any later plants should be kept quite dry at the roots as soon as the growth is finished, and if convenient brought on for flowering in small batches of half a dozen plants or so; they will then keep up a long display. The plant is very widely distributed on the Khasia Hills, in Burmah, Madras, and other parts of the Old World.

Not far behind is the good old D. nobile, and this, too, in its many varieties, ranks as one of the most potent in hybridising. It is not strictly deciduous like the last mentioned, still it likes a good resting season, and may, for cultural purposes, be almost bracketed with it. Most of the cylindrical long-stemmed kinds, such as D. crassinode, D. Wardianum, D. Pierardi, D. superbum, D. Devonianum, D. Bensoniæ, and others have lost their foliage, and are best kept quite dry and cool until the new year. If wanted early in flower, they may, of course, be hastened a little by placing in a warm and moderately dry house; but the longer and more complete the rest, and the more gradually they are brought into flower, the better they all are without exception.

A similar plant in appearance, but one needing totally different treatment, is D. chrysanthum. In most cases this begins to grow just as other deciduous species are going to rest, and consequently, during the winter months, must be kept growing as freely as possible. If the stems can be kept dormant until the spring, all the better; but when once they commence growing, it is useless trying to stop them, and placing them in cool and dry quarters, with growths 2 inches or 3 inches in length, is ridiculous, though too often practised. Cultivators who do this sort of thing can have very slight powers of observation.

Two beautiful Dendrobes—abundantly distinct even when out of flower, yet sometimes mistaken the one for the other—are D. Dalhousianum and D. moschatum (calceolus). Both these require a long season of growth, and even now are often to be met with growing freely. If these flowered upon the previous season's wood only they would be difficult plants to bloom freely, but as the racemes of both are produced upon two, and even three-year-old stems, their late habits make little difference. But even so it is worth while being at a little trouble to get the growths well away in early spring, as they have then the dual advantage of the waning sun in autumn to ripen and the plentiful supplies of fresh air that may be safely afforded at that season.

The east coast of Australia has given us many fine Dendrobiums, and the culture of these for the most part resembles that recently noted as suitable for D. bigibbum. A well-known exception, however, is found in D. speciosum, this plant delighting in a long, cool, and dry rest all through the winter months, and exposure to the full sun nearly all the year round. The growths in fact often shrivel considerably if the resting is prolonged enough, but this has no ill effect upon the plant. The variety Hilli likes a similar régime, but the more delicate, and I think I may say the more beautiful, Bancroftianum, must not be quite so harshly treated. This is a very pretty plant, not common under cultivation, sent home by Dr. Bancroft from Brisbane about sixteen years ago, while the type was known in this country as far back as 1823.

The evergreen section, as represented by D. chrysotoxum, D. suavissimum, and D. thyrsiflorum of the larger habited kinds, and D. aggregatum, D. Jenkinsi of the smaller, are easily grown, useful, and handsome Orchids. Their treatment just now is to keep them on the dry side in an intermediate house, but they will not stand so much drying at the roots as the deciduous kinds, and must never be allowed

to shrivel. Any of the black haired (nigro-hirsute) section that chance to be at rest may be similarly treated, but most of these, like D. formosum, D. eburneum, and even D. infundibulum will probably be growing more or less, and must be treated accordingly.

Did space permit, there are other kinds that may be singled out for special treatment in some way or other, such as the beautiful D. taurinum or D. stratiotes, the tiny growing D. Loddigesi and D. Falconeri, but in the above cursory notes most of the sections in the genus have been touched on, and occasion will doubtless arise for going more fully into the details of their culture. Briefly, then, I may advise cultivators who wish for the best results to study the habit and liking of the individual species rather than give them all a collective mode of treatment which will suit some, but by no means all.—H. R. R.

RHEOLA.

HAVING many times heard the name of Rheola we were prompted on a recent occasion to direct our steps thither. But when the journey was commenced we little dreamt of the lovely scenery the Vale of Neath had in store for us. The lofty Cambrian mountains, with their tree and Fern-clad sides, were a glorious picture in their autumnal beauty. The graceful Larch, with its golden mantle, the silver trunks of the Birch, the golden brown of the Oak, the numberless dark twigs of the Alders, with here and there, towering above the rest, the silvery glaucous hue of the Fir, with the streamlets rushing down the mountain sides into the stony bed of the sometimes turbulent River Neath, formed a panorama of more than ordinary beauty.

The residence of J. E. Vaughan. Esq., soon comes into view. The pretty and well-kept lodge passed we found ourselves on a well-made and picturesque winding carriage drive, and were not long in reaching the mansion with its Old World air. Beneath the verandah, on the southern side, Myrtles were noticed—fine old warriors, too, that have withstood the test of many a severe winter. At times they have suffered, but with a vitality that seems inexhaustible their glossy shoots are again put forth, and these, with Jasmine, Roses, and others, tend to make up one of Nature's most charming pictures.

Leaving behind us huge mounds and towering bushes of Rhododendrons, we made our way to the garden, where the energetic gardener, Mr. J. Crofts, is soon found. Here let it be said this fine old gardener is no stranger, having served the late Mrs. Palmer, together with the present owner, for something like thirty-five years. Under his guidance we proceeded to the lawns and pleasure grounds, and the eye was attracted at once by the fine trees and Conifers. A fine old Ash was noted, while near by a Cedrus Libani, with its horizontal branches, was conspicuous. Lawson's Cupressus and several trees of Juniperus chinensis also claimed attention. Diverging to the left brought to our view some grand Abies excelsa, splendidly clothed specimens of Araucaria imbricata and Wellingtonia gigantea, Taxodium distichum, with numerous well coloured Golden, Silver, and other Hollies, all so disposed that light and sunshine can reach every branch. Here and there were some beds and clumps of Gynerium argenteum, with their silvery plumes glistening in the autumn sunlight. Fine Yuccas and Kniphofias luxuriate near a rushing stream. Retracing our steps we passed the mansion, noting by the way that the formal arrangement of flower beds alone had given way to that of perennials and other plants useful for decorating the drawing-room as well as the flower garden.

Coming to the conservatory—a spacious structure—we were impressed by the many ancient specimen Camellias which were planted some forty years ago. Fine Orange trees were also uncommonly attractive, their branches laden with fruit and myriads of starry flowers. The walls and pillars were clothed with suitable climbing plants, such as Rhyncospermum jasminoides, Tecomas, Heliotropes, Abutilons, Rose Boule de Niege, and the beautiful Noisette Ophirie were quite at home. These, with Ferns and Chrysanthemums, made a lovely display.

On re-entering the kitchen garden, where the other houses are situated, we passed through the greenhouse and stove, both of which were gay with the usual occupants of such structures, and on through the vineries, of which there are three. There is no modern air either about the Vines or the houses, which, with their numerous rafters and innumerable small panes of glass, have a decidedly ancient appearance; nevertheless, good Grapes are annually cut, notably Black Alicantes turning the scale at 3 lbs. from Vines planted, the imperishable label tells us, in 1859. Lady Downe's and Muscat of Alexandria, planted at the same time, also give good returns, and that from the original or first rod taken up, so that naturally the spurs have attained some length. The next house, a long lean-to, planted with Black Hamburgh, is filled by two old Vines that on the advent of the present gardener, some thirty-five years ago, were as large in circumference as an ordinary man's leg and are still very vigorous, producing hundreds of bunches annually. The Vines are planted outside in a border made against the back wall on high ground, and taken in through holes at the top, and trained originally along the back, with other rods taken from them down to the front; but no hard and fast rule has been adhered to, and the many rods or elongated spurs turn in all directions, furnishing good Grapes and healthy foliage to the satisfaction of all concerned. The Peach and Nectarine house is furnished with creditable trees of approved varieties that annually give good returns.

The kitchen garden is of considerable size and well cropped. Celery, Sprouts, Broccoli, Savoys, spring Cabbage, and Kales all showed excellent cultivation. Root crops of all kinds are also well grown, the soil appearing to favour the growth of these, Potatoes being specially fine. The garden is not surrounded by good walls, as are many places, but an orchard near by supplies plenty of fruit.

Our time soon passed, and we retraced our steps, after thanking Mr. Crofts for his very cordial reception.—EXILE.

NATIONAL ROSE SOCIETY.

ANNUAL MEETING.

THE annual general meeting of this Society was held in the Hotel Windsor, Victoria Street, S.W., on the afternoon of Thursday, 9th inst. Chas. E. Shea, Esq., occupied the chair, a fairly numerous audience being present, including most of the leading spirits of the Society. The circular convening the meeting was first read, followed by the minutes of the last general meeting. Scrutineers for the ballot nominating the officers and Committee to carry on the work of the Society for the year 1898 were next appointed. The choice of the meeting fell upon Mr. George Gordon and Mr. W. J. Jefferies, who duly accepted. The report of the Committee for 1897 and the balance-sheet was then presented by Mr. E. Mawley, one of the Hon. Secretaries of the Society. It ran as follows:—

REPORT OF THE COMMITTEE FOR THE YEAR 1897.

THE great event of the past year, the celebration of her Majesty's Diamond Jubilee, has, in one way or another, affected most of the institutions in this country—some beneficially, others the reverse. The National Rose Society has not escaped its influence. It materially affected our southern exhibition at Portsmouth, even to the altering of the date, which was originally fixed for the day after the Jubilee celebration. As it was felt impossible to hold the show under such circumstances, the fixture, at the request of the local Committee, was changed to the 18th of June. This is the earliest date on which a provincial show has ever been held by the Society. The exhibition proved an unusually small one, while the attendance of visitors, no doubt in some measure owing to the stormy weather during the afternoon, was also very limited. The fine display of garden Roses was a noteworthy feature of this exhibition. Everything that could be done under the depressing circumstances of the day was carried out by Captain Ramsay, our local Secretary, who not only gave his valuable services, but also a silver cup in the leading class for amateurs. The Committee are also greatly indebted to the kind hospitality of Mr. Alderman Evans, who kindly entertained the judges and principal exhibitors to a luncheon in the Town Hall.

The metropolitan show at the Crystal Palace was also affected, but not in the same way, by the Jubilee celebration, for the Palace Victorian exhibition occupied the whole of the nave. Consequently that of the National Rose Society had to be relegated to the central transept and the concert room, the latter a most unsuitable position for a Rose show, particularly on such a dull day as that on which the exhibition this year took place. It was the largest show that the Society has yet held, no fewer than 7200 blooms having been staged on that occasion in addition to the many beautiful stands of garden Roses.

The northern show, which was held at Norwich, in the grounds of Mr. J. J. Colman of Carrow Priory, was a most successful one, and attracted a larger number of visitors than any previous summer exhibition of the local Society. The arragements were, on the whole, excellent, and reflected great credit on the Committee of the Norfolk and Norwich Horticultural Society, and especially upon their energetic Secretary, Mr. J. E. T. Pollard.

Early in the year application was made to the different railway companies for a reduction in the rates charged for the carriage of Rose boxes, with the result that although no reduction was granted, there is now a uniform rate charged on nearly all lines throughout the country, which previously was far from being the case.

It is with much regret the Committee have to record the deaths of two of their oldest members—Dr. Robert Hogg, a Vice-President of the Society and one of its original founders, who for many years took a warm interest in its welfare, and frequently presided at the meetings; and the Rev. E. N. Pochin, who in the early days of the Society was not only a member of the Committee and a constant exhibitor, but also a leading authority on all matters connected with the Rose.

FINANCE.—The financial position of the Society must be regarded as satisfactory, considering how greatly most societies of the kind have suffered this year through the many demands upon their members' pockets owing to the celebration of her Majesty's Diamond Jubilee. The year was begun with a balance in hand of £76 12s. 3d., and now, after paying all outstanding expenses, including £495 in prize money, there remain £39 18s. 7d. in the Treasurer's hands.

The sale of publications realised £8, which is more than in any previous year.

ARRANGEMENTS FOR 1898.—Various suggestions have been made with a view to increase the efficiency of the Society, and these are now engaging the attention of the Committee. The engagements for the coming year are likely to prove unusually satisfactory, as the provincial

exhibitions will be held in places which the Society has already visited, and where large Rose shows are each year being held. The southern exhibition will take place at Bath, in conjunction with the Bath Floral Fête and Band Committee, on Thursday, June 23rd. The metropolitan show at the Crystal Palace on Saturday, July 2nd, when, we are informed, there is every prospect of the nave being once more placed at the disposal of the Society. The northern exhibition will be held at Halifax, under the auspices of the Salterhebble and District Rose Society, on Thursday, July 14th.

A Rose Conference will take place at each of the provincial exhibitions, when some subject of interest in connection with Rose culture will be discussed. A report of the Conferences will be afterwards published, and issued to the members later in the year.

MEMBERS' PRIVILEGES.—Members subscribing £1 will, as usual, be entitled to two private view and four transferable tickets, the latter admitting at the same time as the general public; while subscribers of 10s. are entitled to one private view and two transferable tickets. Each of these tickets is available for any one of the Society's exhibitions. Members joining the Society for the first time in 1898 will also receive copies of the following publications:—The official catalogue, the supplement to the catalogue, "Hints on Planting Roses," and the "Prize Essay on the Hybridisation of Roses," also the reports of the two Conferences as soon as issued. Members alone are entitled to compete at the Society's exhibitions.

The Committee, in conclusion, express their best thanks to their local secretaries, also to the donors of special prizes. Of the former Mr. H. P. Landon has distinguished himself by obtaining more new members for the Society during the last three years than any of his fellow secretaries. Among the leading donors of special prizes may be mentioned the Right Hon. Lord Penzance, the Mayor of Norwich, Dr. S. P. Budd, Mr. C. J. Grahame, Captain Ramsay, Mr. C. E. Shea, Mr. A. Tate, and the Trustees of the Prince Memorial Fund.

BALANCE-SHEET, YEAR ENDING 30TH NOVEMBER, 1897.

RECEIPTS.

1896.		£	s.	d.
Dec. 1st.	Balance at Bankers	76	12	3
	Subscriptions	360	19	0
	Affiliation Fees and for Medals from Affiliated Societies	70	3	6
	Advertisements	15	2	6
	From Isle of Wight Rose Society	50	0	0
	,, Crystal Palace Company	105	0	0
	,, Norfolk and Norwich Horticultural Society	80	0	0
	Special Prizes	38	14	0
	Sale of Publications	8	0	11
		£804	12	2

EXPENDITURE.

	£	s.	d.
Printing, Stationery, and Advertising	81	10	9
Postage, Telegrams, and Sundry Expenses	52	3	9
Secretary's Travelling Expenses to Arrange Shows	3	11	0
Expenses Portsmouth Show	7	10	8
,, Crystal Palace Show	10	8	0
Medals	14	16	5
,, for Affiliated Societies	56	0	0
Prizes Portsmouth Show	89	15	0
,, Crystal Palace Show	243	5	0
,, Norwich Show	162	5	0
Purchase of Plate for Prizes	8	3	0
Contribution to the "Head" Relief Fund	5	5	0
Assistant Secretary and Accountant	30	0	0
Balance at Bankers	39	18	7
	£804	12	2

(Signed) J. D. PAWLE, FRAS. TULLIE WOLLASTON } *Auditors.*

After reading the balance-sheet, Mr. Mawley explained that the Society stood in rather a more favourable position than would appear, for whereas the balance at the bankers was stated to be only £39 18s. 7d., it should really be £64 18s. 7d., for £10 had been paid in during November as special prizes for next year, whilst in the item of £81 10s. 9d. for printing another £15 had to be accounted for.

On rising to move the formal adoption of the report and balance-sheet the Chairman said that another milestone in the history of the Society had been successfully passed. He commented upon the apparently unfavourable appearance of the much shrunken balance at the bankers, but stated that Mr. Mawley had removed many of their trepidations by explaining that they really had a balance in hand analagous to £64 18s. 7d. The last year, continued Mr. Shea, had been a chequered one. It might have been better, and also might have been worse. The Jubilee had been got through fairly well—a great thing in itself. The show at Portsmouth did not turn out so well as they had hoped, but the Society was greatly indebted to Captain Ramsay's strenuous efforts for the measure of success that had fallen to them. The show at the Crystal Palace, on the other hand, had been the best ever held with regard to the number and quality of the blooms exhibited. Taking it altogether the National Rose Society had done as well as could be expected, both from a financial and a show point of view. He concluded a pithy address by saying that he did not doubt for the future of the noble flower when he looked around him and saw so many of its lovers and able cultivators; in such hands it could not suffer an abiding or a lasting retrogression. In a few words Mr. Geo. Bunyard seconded the motion proposed from the chair, and the meeting unanimously voted that the report and balance-sheet be formally adopted, printed, and circulated.

A vote of thanks to the officers and members of the Committee for their services during the year was then proposed. Mr. A. Munt seconded. The Rev. H. Honywood D'Ombrain, who was received with enthusiasm, replied, expressing on behalf of himself and his brother officers their thanks for the confidence placed in them.

The meeting then proceeded to the alterations of the rules, of which the necessary time notification had been previously given. The italics represent the alterations of, or additions to, the existing rules. On the motion of the Rev. H. A. Berners, seconded by Mr. O. G. Orpen, it was proposed that Bye-law 5 be altered to read:—"Notice of any proposed alteration of these bye-laws to be given in writing to one of the Secretaries at least two weeks before *a* general meeting, and no bye-law or regulation shall be altered except at a general meeting of the Society. *A special* general meeting may be called at any time," &c. This was carried without a dissentient voice. The Rev. A. Foster-Melliar proposed, and Mr. Cyril Cant seconded, that Bye-law 7 should be altered to read:—"That the Committee shall at its first meeting appoint . . . the General Purposes Committee . . . the functions of that Sub-committee shall endure until the next *annual* general meeting," &c. This was also carried.

Mr. Landon moved that Regulation 8 should be made to read:—"All Roses must be exhibited as cut from the plants. Artificial aid of any and every kind is strictly prohibited, with the exception of wire or other supports, which are only to be used to keep the blooms erect. *A bloom left tied will not be counted by the judges.* Dressing Roses so as to alter their form is prohibited. *A bloom so dressed will be counted as a bad bloom.* The insertion of any additional foliage *will disqualify the stand.* All Roses should be correctly named." There was a brisk discussion upon this rule, and the exact meaning of the word *counted*, which was finally defined as meaning *pointed.* The insertion of the latter word was proposed as an amendment by Mr. Langdon, supported by Mr. Mawley, the rule to read, "*shall not receive a point*," instead of "*shall not be counted*," and in the form of this amendment the motion was adopted, but not unanimously, since some of the members thought that a tied bloom should be directly penalised by being counted as a bad bloom.

The next item in the proceedings dealt with the size of exhibition stands. Mr. Geo. Paul moved that—"*Exhibition stands should be of the regulation size—viz.*, 4 *inches high in front, and* 18 *inches wide, and be set out with moss or other suitable material. They should be of a uniform length—viz.*, for twenty-four blooms, not less than 3 feet or more than 3 feet 6 inches; for twelve blooms, not less than 1 foot 6 inches and not more than 2 feet; for six or nine blooms, not less than 1 foot and not more than 1 foot 6 inches.' Dr. Shackleton seconded, and a lively discussion then ensued. The Rev. A. Foster-Melliar spoke of the need for a direct penalty for infringement of this rule, and he took exception to the very gentlemanly suggestion "should be.' He humorously pointed out that a man ought to be able to make a box within an inch, and yet when transgressors were shown that they had broken the law, they took the matter very quietly. The resolution was ultimately transferred from its old place in the "Authorised Rules" for judging at Rose shows to its new position among the Bye-laws.

Mr. Geo. Gordon then announced that the result of the ballot was that the list of officials proposed was unanimously adopted.

Passing to the consideration of the fixtures for 1899, Mr. Mawley read correspondence from the Secretary of the Salisbury Rose Society, which stated that a welcome awaited them at Salisbury in 1899, if the Society would elect to hold their provincial show there. An invitation from Horace G. Egerton Green, Esq., on behalf of the Colchester Rose Society, was also read, and Mr. Orpen then pointed out that Colchester had the prior claim to the visit of the National Society in 1899, since the invitation was decided upon at the April meeting of the Colchester Society. The Rev. Pemberton remarked upon the splendid way in which the Colchester people managed their shows, and upon the fact that they had plenty of room there. Mr. Landon corroborated, and spoke of the lead taken by Essex in the cultivation of the Rose. After due deliberation Colchester was chosen, upon the formal proposal of Mr. Bateman, seconded by the Rev. A. Foster-Melliar.

Mr. W. J. Grant then stated that he was authorised by the Helensburgh Society to invite the National Rose Society to Helensburgh in 1899. The people of Helensburgh would much appreciate a visit, and they were quite ready to accede to any terms that might be imposed, including the money guarantee of £80. The Rev. H. H. D'Ombrain had several reasons to give against going to Helensburgh, but Mr. W. J. Grant had a fitting answer for them all. Communications had been held during the year with Mr. P. Weathers, discussing Manchester as a northern meeting place for 1899, but no letter had reached the Hon. Secretaries for the last two months, and the matter was yet undecided. Mr. Grant moved, and the Rev. Pemberton seconded, that the rival claims of Helensburgh and Manchester be left to the Committee for decision. In this the meeting concurred. A vote of thanks to the Chairman for presiding, moved by the Rev. A. Foster-Melliar, was accorded unanimously, and the proceedings then terminated.

Notes & Gleanings

WEATHER IN LONDON.—A considerable amount of rain has fallen in the metropolis during the past seven days. Thursday was fine, but rain fell almost the whole of Friday. Saturday again was dry, while on Sunday it rained heavily until the evening, when it cleared, and the stars shone brightly. During the early hours of Monday morning rain recommenced to fall, and continued throughout the day. Tuesday morning also was wet, while during the early hours of Wednesday morning there was a thunderstorm accompanied by heavy rain. At the time of going to press it was fine.

—— WEATHER IN THE NORTH.—The weather of the past week has been of all sorts—fog, rain, sleet, snow, frost, and bright sunshine, but little of the last. Saturday was the best of the week; on Sunday there was frost of 6°, which continued till evening; Monday was very dull and drizzly; Tuesday morning, although dull, was more settled and pleasant. —B. D., *S. Perthshire.*

—— THE ANCIENT SOCIETY OF YORK FLORISTS.—The following quaint invitation is issued by Mr. John Lazenby, Secretary, 13, Feasegate, York:—"Brother,—You are desired to meet the Fraternity of the most Antient Art of Gardening at the annual Feast of the Royal Society of Gardiners and Lovers of a Garden, within the City and County of York, kept this year at Mr. Pearson's House in Marygate the 15th day of December to dine with them, at Six a Clock, where you will be earnestly expected and kindly received." Sir Jos. Terry, Kt., has promised to preside, and as the presence of the Right Hon. the Lord Mayor (E. Gray, Esq.), the City Sheriff (H. Copperthwaite, Esq.), and other influential gentlemen is assured, it is hoped there will be a good attendance of members on the occasion.

—— CLUMBER.—Much has been written from time to time about the noble establishment in the neighbourhood of Worksop. I am pleased to relate that the Duke of Newcastle has added to the Clumber gardens what has long been required, and that is a splendid lean-to range, erected by Messrs. James Gray, horticultural builders, Danvers Street, Chelsea, which is a model of horticultural skill. It is 175 yards long, and has a noble Palm house in the centre. This range is in various departments, and the greater part will be used for the cultivation of fruit. At the present time there is a fine display of Chrysanthemums of all the leading varieties splendidly arranged, many of the flowers being fit for any exhibition table. At the back of the range all the offices necessary will be erected upon the most modern and serviceable plan. The gardener's house, erected some time ago, is a splendid building, complete with all modern arrangements conducive to comfort, and the same may be said of the bothies. Gardening in all its branches is carried out on a most extensive scale. Everything useful is well represented both in fruit, cut flowers, and vegetables. Clumber is in the capable hands of Mr. C. Slade, whose previous experiences have well fitted him for the management of such an establishment.—ALFRED OUTRAM, F.R.H.S.

—— PANSIES.—I have just been enjoying the pleasure of planting a number of seedling Fancy Pansy plants. They are the product of a fine, blotched strain that gave numbers of grand richly coloured blooms last summer. The seed was sown in a large frame early in August, and as the soil was kept well watered, and some rough shading thrown over the glass, the germination was quick, and the plants appeared in thousands. When strong enough they were carefully lifted out from the drills and dibbled out 4 inches apart into a bed of well prepared soil, where they were, so long as needful, kept well watered, and now are very sturdy well rooted plants. Lifted with balls of soil they will bloom finely in the spring and early summer. Here in a few lines is summed up nearly all that need be said with respect to raising Pansies from seed, and their treatment in the autumn. I should have transplanted to their blooming border earlier, but the soil had become very dry and loose. The border had previously been well manured, and indeed trenched. Recently it was dug, and after the rain of the 7th and following days was in capital condition for planting. There are now in commerce such superb seed stock that a good store of plants may be easily and cheaply obtained from a packet of seed if of the right sort.—A. D.

—— GARDENING APPOINTMENT.—Mr. William Phillips, for the past six years foreman Effingham Hill Gardens, Dorking, has been appointed head gardener to J. H. Buxton, Esq., Hunsdon Bury, Ware Herts.

—— ORCHID-FLOWERING CANNAS.—Messrs. Dammann & Co., the well-known horticulturists of Naples, have forwarded to us a coloured plate of what are termed Orchid-flowering Cannas. If these fulfil the promise of the illustration it is quite certain that they will quickly become popular in this country. Twenty varieties are represented, all of which are distinct and very handsome.

—— CORRECTIONS.—Permit me to make two corrections of errors in some notes of mine last week. One is found in the reference to Grapes at Tilehurst, where I am made to say that the number of bunches per 15 feet run of rod was 30½. I wrote 38½, which makes a material difference. Then in the article on "Rest in Plant Life," in paragraph 6, rods in the twelfth line should read roots.—A. D.

—— WOLVERHAMPTON GARDENERS' ASSOCIATION.—A very interesting and instructive lecture was given before a large meeting of the members of this Society on the 7th inst. by Mr. C. R. Bick, gardener to Walter Chamberlain, Esq., Harborne Hall. The essay dealt with the cultivation of certain ornamental foliage and flowering shrubs, suitable for planting near large or manufacturing towns. Sprays and fruits of various shrubs and trees were used as illustrations. The Chairman (Mr. Simpson) and others complimented Mr. Bick on his comprehensive remarks.

—— OLIVE CULTURE IN AMERICA.—It is remarkable, says "Meehan's Monthly," what an immense stride forward has been taken by Olive culture in America during the last quarter of a century. It is scarcely fifty years ago that nothing at all was known of it; and the writer remembers well a distinguished French gentleman, although a citizen of Philadelphia, buying land in Texas, and importing plants from the Old World for the mere purpose of experimenting with them, in order to ascertain their fitness for culture in that region. None of these attempts succeeded. Even California, so ready at once to experiment in all horticultural lines, never seemed to think of what might be made of the Olive until Mr. E. Cooper, of Santa Barbara, commenced their cultivation some twenty years ago. At the present time 1000 acres are under Olive cultivation on the Pacific Coast, and it is regarded as one of the most profitable of California market horticultural productions.

—— BIRMINGHAM GARDENERS' ASSOCIATION.—At the fortnightly meeting of the members on the 6th inst. Mr. J. Deacon, gardener to the Right Hon. Joseph Chamberlain, Highbury, Moseley, gave an essay on "Late Flowering Chrysanthemums," and accompanied it with an assortment of cut blooms on long stems set up in bottles. The practical remarks were much appreciated, and were followed by an interesting discussion amongst several of the growers present. Mr. W. Gardiner took occasion to advert to the recent decease of Mr. James Bateman at Worthing, and of his fame as an enthusiastic horticulturist, special reference being made to his remarkable work, "The Orchidaceæ of Mexico and Guatemala," the coloured plates, each of which cost over £200, being mostly life size. The speaker also alluded to his own interesting visit to Biddulph Grange some thirty years ago, and still retains a lively recollection of the "Chinese Willow Pattern Plate" garden and the "Egyptian Court."

—— A GARDENER'S MISTAKE—CAN WE FORGET?—Of course, in all such cases as that of Thos. Harwood Crasp the natural inference is always against the person implicated; nor is it easy to obtain any proof that can exculpate him. I am generally particular in receiving money, wrapping it separately in paper with name and particulars; but as the Judge, in the case referred on page 551, expressed so decided an opinion on the impossibility of forgetting such, I venture to submit occurrences that have happened to myself. Unfortunately, perhaps, for certain parish schools, I was prevailed on to take the treasurership. The first year the overdrawn account at the bank at the end of the year was less by a few shillings than the overdrawn account as represented by the books of the Education Department. At the beginning of the following year I drew these out, and placed them as voluntary subscription to the credit of the school. A year or two after a similar incident occurred, only then the difference was a matter of £2 or £3, but of like character. Plainly, in both these cases I had paid accounts of the school and had forgotten to make a note of the same. By no manner of means am I an unselfish person, therefore it may be safely said that if a person can forget paying away money it is also quite possible to forget receiving it. Judges' opinions are not always gospel, or there would be fewer law suits.—Y. B. A. Z.

—— Bud Variation.—That Nature does not require external conditions in every case for inducing great changes in the forms and other characters of fruits and flowers is well known (says an American contemporary) to florists, who have numerous varieties produced by bud variation, or sports, as they term them. Some fruits originate in the same way. It is understood that the famous Canon Hall Muscat Grape is from a branch of the ordinary Muscat of Alexandria; and yellow Plums, appearing on trees normally producing purple ones are not uncommon.

—— Presentation to Mr. F. Q. Lane, J.P.—We learn that at the annual meeting of the Berkhamsted Chrysanthemum Society, of which Mr. F. Q. Lane is the Vice-President and Earl Brownlow President, Mr. Lane of The Nurseries, Berkhamsted, was presented with a silver cigar box, bearing the inscription, "Presented by the Committee of the Berkhamsted Chrysanthemum Society, 1886-1897" on one lid, and on the other "F. Q. L.' Mr. A. Prudames made the presentation. The recipient, who was taken by surprise, expressed his thanks for the kindness shown him, and was much pleased.

—— Hessle Gardeners' Improvement Society.—At a meeting of the above Society, held December 7th, Mr. D. Toyne of Hull read a very interesting paper on "Floriculture of the Present Reign." Mr. J. Barker, gardener to W. P. Birkenshaw, Esq., West Hill, showed some very good Cypripediums, including, amongst others, C. Arthurianum, C. nitens superbum, and C. nobile; also Dendrobium Phalænopsis Schröderianum. Mr. Wilson had some good blooms of Chrysanthemums Mrs. H. Weeks. Perle Dauphinoise, Bonnie Dundee, and W. Tunnington. There was a capital muster of members. A hearty vote of thanks to the essayist and Chairman terminated a very pleasant evening. —G. W. G.

—— Metropolitan Public Gardens Association.—At the monthly meeting of the Metropolitan Public Gardens Association, 83, Lancaster Gate, W., Lord Teynham, Deputy Chairman, presiding, on the motion of Sir William Vincent a resolution was unanimously passed expressing great regret at the death of the Vice-Chairman, Lord Dorchester, who had taken an active interest in the work from its commencement fourteen years ago. It was agreed to make some improvements in St. Nicholas's Churchyard, Deptford, with a view to its use by the public, and to prepare a plan for the further laying out of St. John's Churchyard, Hoxton, and to replant some trees and shrubs in Whitechapel Road, and in St. Stephen's Churchyard, Bow. Progress was reported in the laying out of the East Street Recreation Ground, Walworth, the disused burial ground in Kipling Street, and St. George-the-Martyr Churchyard; and it was decided to commence as soon as possible the laying out of Charles Square, Hoxton, and Albion Square, Dalston. It was announced that the Oval, City Road, had been completed and opened to the public by the St. Luke's Vestry, the Association having provided seven seats. A number of other schemes in connection with the acquisition and laying out of grounds in Camberwell, Blackfriars, Walworth, Ratcliff, New Kent Road, Putney, and other places occupied the attention of the meeting.—("Garden.")

—— The Assessment of Nurseries.—Mr. George May appealed against the assessment of the nurseries, Upper Teddington, on the ground that he was entitled to relief under the Agricultural Rating Act. The Clerk stated that the solicitors to the Gardeners' Association had instructions to make this a test case, and if need be to carry it to the House of Lords. It was a question whether the nurserymen were, or were not, to receive the benefits of the Agricultural Rating Act. When the lists were deposited nine months ago, the surveyors of taxes were invited to be present with the overseers, and to raise any objections they had to the supplemental lists. The overseers and surveyors had several interviews, and in the whole Union there were only three objections to deal with. Two months ago there were similar appeals from the Surbiton Nurseries and Wimbledon, and the Committee referred the matter to him (the Clerk), and he spent four hours one day with solicitors, witnesses, and experts. The surveyor of taxes for Wandsworth had seen the Commissioners at Somerset House, and they supported the view which he (the Clerk) advised the Committee to take—viz., that the relief of the Agricultural Rating Act did not extend to nurseries. But in a case at Worthing recently the appellant had successfully appealed against the rates, and his appeal had been confirmed by the Court of Appeal, but the case was now going to the House of Lords. The Judges did not agree, and therefore there was no final decision at present. He therefore advised the Committee to confirm Mr. May's assessment, but to record his formal objection on the minutes. Mr. May assented to this course, and the Committee confirmed the assessment accordingly.—("Surrey Comet.")

—— The Japan Umbrella Pine.—The curious Japanese tree, is named Umbrella Pine, from the effect given by the arrangement of the free leaves in an umbrella-like form at the ends of the branches. It is said to be comparatively rare on account of the difficulty of obtaining seeds from Japan, and because no way has been found to propagate it, except by seeds. It is true that cuttings will root after a long time, but the objection to this method is the length of time required. Besides, only a limited number of cuttings can be obtained from any one tree. It will be noted that the term "free leaves" is used in the above reference. The reason for this is that many limbs of plants of the coniferous family, especially in the true Pines, have the leaves all united together so as to form an outer covering to the bark. The outline of these leaves can be readily seen on examination. In a certain stage of growth these leaves are not united to the stem as later, and then the true leaves are apparent. The botanical name of the Umbrella Pine is Sciadopitys verticillata.—("Meehan's Monthly.")

—— Influence of Stock on Scion.—The Academy of Science, Paris, France, sends out a report of the effect of the stock on the scion in the case of two Pear trees, fifteen years old, which had grown side by side in a garden where they were apparently subject to the same conditions, with the exception of the stocks into which they were grafted. The variety was the Triomphe de Jodoigne, and one was grafted upon a seedling Pear, the other upon a Quince. Each tree bore about 300 fruits each year, and for three years the fruits when mature were collected, compared, and analysed. The colour of the fruits was very different, those upon the Pear stock being green, and those on the Quince stock golden yellow, with a decided rose blush on the side toward the sun. Ten fruits from the Quince stock averaged to weigh 406 grams, against 280 grams on the Pear stock. Both fruit and fruit juice of the Quince stock had greater density, and it also exceeded that on the Pear stock in acidity and in contents of sugar. The sugar was in the proportion of 11 kilogrammes on the Quince stock to 7 on the Pear stock. These observations, according to a transatlantic contemporary, were in the main confirmed by others made some years ago on Winter Doyenné scions on seedling Pear and Quince stock.

—— A Rare November.—There have been many records given of late in various periodicals regarding the extreme mildness of the autumn, or its consequent influence on vegetation. On page 502 "G. H. H." gives an accurate account of the abundant floral features of the month, of which we are so unaccustomed during November, as well as the extraordinary out-of-season crops in the kitchen garden. It would have been not at all difficult to produce a second crop of Potatoes outdoors this year, were it possible to predict the November weather actually experienced. Peas, Runner and French Beans were in very general use in November. I gathered the last dish here on the 25th of the month, and cut a nice dish of Globe Artichokes on the same day, while of Cauliflowers and early autumn Broccoli there has been no loss from frost or any other cause, and they have been abundant and good. Chrysanthemums have been fine everywhere outdoors, so much so that the indoor display has suffered in appreciation in private gardens, and proved a source of loss more or less to the market grower, but probably what may have been loss in one case has been gain in another.—W. S.

—— Liverpool Horticultural Association.—On Saturday evening the first lecture of the season was given in the Free Library, William Brown Street, the Chairman of the Association, Mr. Thomas White, presiding over a satisfactory attendance of members. The subject, "The Progress and Popularity of Orchid Growing," was given in a happy style by Mr. Weathers. Down through the long years, from the time when Linnæus first introduced dried flowers in 1763 up to the present, the many good things introduced were adequately dealt with. A warm tribute was paid the R.H.S. for the earlier efforts to popularise Orchids. He associated the name of Mr. Owen Thomas when mentioning Disa grandiflora, by reason of the splendid plants grown at Chatsworth, and also that of Mr. Smith, gardener to the late Y. de Barronda, Esq., for the gorgeous collection of Phalænopsis grown by him at Liverpool. He also gave interesting accounts of the increasing interest in their cultivation by many working-men amateurs. The lecturer considered Vanda Sanderiana the king of Orchids, though owing to the difficulty of importing it, was somewhat scarce. Hybridising was mentioned as of the greatest value, as although varieties might become scarce in their native habitat, we need not fear with the splendid varieties we had now to work upon. Orchid literature numbered at the present time some 150 standard and scientific works. The discussion which followed was of a most interesting character. A hearty vote of thanks to Mr. Weathers, proposed by Mr. Ranger, and seconded by Mr. Mason, and a similar vote to the Chairman, brought a most pleasant evening to a close.—R. P. R.

—— THE DEVELOPMENT OF THE FOREIGN FRUIT TRADE.—The foregoing was the title of a paper read by Mr. M. J. Garcia at the meeting of the Horticultural Club held at the Hotel Windsor on Tuesday evening last. There were present besides the Rev. H. H. D'Ombrain, the Secretary, M. Henri de Vilmorin of Paris, Rev. W. Wilks, Mr. Harry J. Veitch, Mr. J. H. Veitch, Mr. Arthur Sutton, and a large gathering of other members. The paper proved to be one of the most interesting and instructive given at these *réunions* for many a day, and gave rise to an animated discussion, in which Mr. George Monro, Mr. Assbee, Mr. George Bunyard, Mr. Walker, and M. de Vilmorin took part. The general purport of Mr. Garcia's remarks was to explain that vexed question, "Why is English fruit growing unprofitable?" Mr. Garcia, speaking from experience, accounted for the general failure of the English grower to keep pace with foreign and colonial competition to the fact that he grows too many varieties of fruit, and does not pack his consignments in cheap wooden barrels *not to be returned*. English buyers are conservative, and persist in asking for the same varieties of fruit year after year. English sellers will not consign their fruit in receptacles to be broken up when done with, like the American importers. The remedy, therefore, is for the English grower to limit the varieties and transmit the fruit to market scientifically packed in barrels of which he makes a gift to the consumer. Mr. Bunyard remarked that one difficulty English nurserymen had to contend with was the caprice of the buyers of fruit trees, the demand being very variable in respect of the varieties. In course of the discussion, Mr. Garcia and Mr. Monro stated that in spite of foreign competition the price of certain ordinary fruits, so far from sinking, had actually risen during the last forty years. In conclusion, Mr. Harry Veitch expressed a hope that at some future day Mr. Garcia would see fit to repeat his lecture at a meeting of a more public nature.

THE HERBACEOUS PÆONY.

THERE are fashions in flowers as in other things, and the favourite of to-day is too often the despised of to-morrow. We sometimes think it unfortunate that this is the case; that a flower seen everywhere for a time should drop into comparative obscurity. Yet it is doubtful if the gains are not greater than the losses which flow from this tide of fashion. It is impossible to doubt that the popularity of some flowers has done much to lead to their improvement, and has encouraged many to devote their attention to raising new varieties. However much we may seek to minimise the question of what is lucrative in flowers, it constantly arises and exercises an enormous influence. The raiser of new flowers, who has devoted much time and skill to his work, is as much entitled to a pecuniary reward as the successful man of science who reaps the benefit of his discoveries.

But for these fashions the professional raiser of new varieties would not receive a fair reward, and his time could not be applied to such a work as this. Many amateurs have enriched our gardens with new varieties of many flowers without either the desire for or the prospect of gain. For many other flowers we are, however, indebted to the man who makes it his business, and who expects his work to recompense him in the ordinary way. The subject of this article is one of the latter flowers, and we cannot but recognise the high value of the work of the raisers of the best varieties of this brilliant flower, the reinstatement of which in popular favour is likely to give much satisfaction to many.

There are some who call the Pæony coarse and gaudy; but it appears to the writer that they have not seen the beauty of the tinting and shading of the exquisite flowers of many of the blooms. It is not a little strange to hear some who go into ecstacies over a bed of scarlet Zonal Pelargoniums condemning as garish and gaudy the colouring of this flower. Used aright in the garden, its great flowers are toned down by and harmonise with the surrounding foliage; used for house decoration, its massive blooms are suited for large vases and similar receptacles. It cannot be judged from the same point of view as a flower for use in a buttonhole: yet there are some who appear to do so, and speak with disdain of its flowers as "lumpy" and "ungraceful." It is all a question of using properly. This much by way of introduction, and we must now turn to the history and cultivation of the flower.

The Pæonia has long been an inhabitant of our gardens. There is a little discrepancy in the statements about the time of its introduction; but so far as we can learn the year 1548 saw it introduced into this country. This is the date assigned to P. albiflora and P. officinalis, although some state that P. albiflora was not introduced until 1780. The former of these is the progenitor of what are, perhaps, the most beautiful of the varieties in cultivation. P. officinalis in its several varieties is the well-known common Pæony of cottage gardens, which, through good report and ill, has survived long years of both neglect and favour. It is a native of South Europe, while P. albiflora comes from Siberia and adjoining countries.

Much of the popularity of the herbaceous Pæonia at the present time is due to the magnificent exhibitions made by Messrs. Kelway and Son of Langport, who have had marked success as seedling raisers. Messrs. Barr & Son, Mr. T. S. Ware, and other prominent trade growers have also done much to bring the beauties of the flower to the notice of garden lovers. Continental growers, such as Messrs. Krelage & Son of Haarlem, who grow a very complete collection, have upheld the merits of the varieties of the Pæony when little interest was taken in the flower. From a very complete list of over 500 varieties published by this firm, it is shown to whom we were indebted for the florists' Pæony, until Messrs. Kelway & Son showed how well it can be raised in England. These continental raisers were the Prince of Salm-Dyck, Lémon, Guérin, Buyck, Parmentier, Verdier, Calot, Count de Cussy, Delache, Van Houtte, Gombault, Pelé Delacourt-Verhille, Donkelaer, Foulard, Miellez, Salter, Crousse and Méchin, and Dessert. Many of the finest standard varieties have been produced by these raisers, and it is well that their names should be remembered. In the literature of the flower Mr. J. G. Baker, Mr. George Paul, and Mr. George Anderson may be mentioned as having contributed valuable studies.

The herbaceous Pæonia is a very accommodating plant, and is so easily grown that it frequently suffers in beauty from the want of attention in the way of giving manure and a plentiful supply of water. It likes a good, rich, well-drained soil, which has been deeply dug and well enriched with thoroughly decayed animal manure. It should never be allowed to suffer from drought, and watering with liquid manure while the buds are forming will add to the size and beauty of the flowers. It may be grown in beds, borders, or shrubberies, and large beds massed together in grass are very striking when the plants are in full flower. In shrubberies they are very effective against the background presented by the shrubs. They can be planted at almost any season, but should, if possible, be obtained while at rest, as the young growth in spring is very brittle and liable to be injured. August is a good time for division of the plants, but they can be removed much later, and if planted before the middle of January may bloom the following summer. A portion of a plant with a crown will grow. New varieties are procured from seeds, which may be sown as soon as ripe, either under glass or in the open. These directions apply to all the Pæonias, including the varieties of P. albiflora, both single and double: those of P. officinalis and the numerous species.

The double varieties of P. albiflora are the most admired, their fine and massive flowers being much appreciated in June. The single varieties have of late received more attention than formerly, and many are very beautiful both in form and colour. The old P. officinalis has hardly any superior in richness of colour when in bloom in May, and its varieties give much to admire. The other species also give us many handsome plants and are comparatively little known. At the Cambridge and Glasnevin Botanic Gardens there are extensive collections of these species, and Mr. Peter Barr has made an exhaustive study of them in the nurseries of his firm.

The range of colouring in the herbaceous Pæonia is very wide, and this greatly increases the difficulty of making a selection. Selections of florists' flowers which have been long under improvement are notoriously difficult to compile, and in the case of the Pæony, where there are so many almost perfect flowers, it is even worse than usual to choose. Scores of equally good flowers must be omitted to keep the list within bounds. A garden might also be largely furnished with what are called the species with their varieties. In these a yellow less difficult to grow than the pale yellow P. Wittmanniana is a desideratum, and it is to be hoped that the new P. lutea from China, and now on trial in France, may prove more amenable to cultivation. In the selections of flowers given below only the principal colours are given.

For the benefit of those desiring to exhibit, quotations of the various points for judging may be made from the invaluable "Rules for Judging," issued by the Royal Horticultural Society. These are —"Size and fulness of bloom," 2; "regularity of guard petals," 1; "compactness and symmetry," 1; "clearness of colour and freshness," 1; "average evenness of blooms," 1.

SELECTION OF DOUBLE HERBACEOUS PÆONIES.

Varieties of P. albiflora.—Agnes Mary Kelway, rose and yellow; Candidissima, primrose; Comte de Gomer, deep crimson; Cyclops, purple crimson; Duchesse de Nemours, snow white; Festiva maxima, snow white; François Ortigat, purple; Lady Beresford, rose pink; Lady Leonara Bramwell, silvery rose; Madame Breon, peach blossom; Princess Christian, white; Sir Henry Irving, rose pink.

Single Varieties.—Autumnus, purple; Blucher, carmine; Duchess of Sutherland, pink; Emily, bright pink; Stanley, maroon crimson; The Bride, pure white.

SELECTION OF EUROPEAN AND OTHER SPECIES.

Anomala, rosy lilac; Arietina, crimson; decora elatior, crimson; officinalis alba fl. pl., white; Peregrina Exquisite, pink; tenuifolia fl. pl., crimson.—S. ARNOTT.

OUTDOOR TOMATOES.

To grow Tomatoes successfully out of doors a good sunny position should be chosen. The seeds may be sown by the middle of January, and the plants raised in a warm propagating pit or frame. As soon as they are large enough to handle they must be placed singly in 3-inch pots, using a mixture of good fibrous loam, leaf soil, and a little sharp sand previously warmed to about the same temperature as that in which the seedlings are growing. Cold soil chills the tender roots and gives the plants a check, from which they may be long in recovering. Sturdy plants should be the object of the cultivator, and these can easily be had if a good start has been made by giving the plants plenty of room, and keeping them as near the glass as possible. Short-jointed plants fruit much quicker when planted out than those that have been allowed to become drawn.

By the first week in April the plants will be in a condition to need more air than before, and a liberal amount, avoiding sharp currents, will be of great service in preparing them for planting outside. This may be done about the end of April or the first week in May; but great care must be taken in covering them every night till they are safe from frost.

The varieties which I have grown this year are Carter's Early, Chiswick Red, Viceroy, Polegate, and a seedling the result of a cross between the old Red and Polegate. Chiswick Red is a splendid cropper outside. Carter's Early is also good; but for an indoor Tomato the latter is the best I have grown.

There is yet one more feature in outside culture—namely, getting the fruit to ripen after it is grown. I often hear people say they can grow plenty of Tomatoes outside, but cannot get them to ripen. Let them cover the plants at night from about the middle of September, and they will find that most of the fruits will ripen well outside. This is not only much better when ripened on the plants, but it saves a good portion of the crop being spoilt through being picked green.

The enclosed photograph was taken on September the 27th. Now, October 27th, the whole of the crop has been gathered. Only the last set fruits failed to ripen. The length of wall is 40 feet, and this is the sixth year in succession that Tomatoes have been grown on the same ground with excellent results.—W. J. EMPSON, *The Gardens, Ampthill House, Ampthill, Beds.*

[It will be conceded on examination of the illustration that Mr. Empson's system of culture is an excellent one.]

RASPBERRY LEAF RUST.

THE leaves submitted to the Editor by Mr. Briscoe-Ironside, and mentioned on page 532, are infested with the Raspberry brand, or leaf rust, Phragmidium (Aregma) Rubi-Idæi (gracile), which infests both wild and cultivated Raspberries.

Your correspondent has sent both a young and a mature leaf of the infested Raspberry, but on both the fungus is in the matured condition. The parasite appears on all the green parts, commonly on the under side of the leaves, in the form of small spots, usually very numerous. In the early stages of attack the leaves exhibit no trace of infection on the upper surface, but as the disease advances yellowish specks appear, and ultimately the leaf becomes brown and dies, more or less, the leaflets or leaves sometimes falling prematurely, thus considerably weakening the canes and prejudicing another season's crop of fruit.

The fungus is one of those producing different spores at various seasons. The earliest or spring form, giving rise to orange yellow spots on the leaves, is composed of the so-called æcidiospores, and notable for not having any distinctive name. These spores are small spherical or, from being jammed, angular bodies, and being readily blown about by the wind cause the rapid spread of the disease.

The spores, however, of the next generation are of a brighter yellow colour, known as midsummer and uredospores. Lastly, black spots only are found late in the season—September and October in this country. The black spore differs from either of the preceding forms, being cylindrical, and rests over the winter, either attached to the leaf or on the ground, and may be regarded as frostproof and waterproof.

The spore germinates in the spring and produces several minute globose sporidia, which are wafted along and upward by the slightest currents of air, and catching on the under side of a Raspberry leaf amongst the down they, in presence of moisture (always evaporating from the earth and from the stomata), send out slender tubes, which enter the tissues of the leaf from below, either by a stoma or by directly piercing the cuticle. Once in the leaf, the tube divides or branches, forming a seat of mycelial hyphæ, and pustules are developed.

Coming to means of prevention, the first thing deserving of attention is to watch early in the season for the first pale lemon spots on the under side of the leaves, removing and burning them before they burst. That will end the parasite. The alternative plan is to spray the leaves on the under side with Bordeaux mixture or some powder preparation containing sulphate of copper; but Raspberry leaves are very easily injured, a quarter strength Bordeaux being quite strong enough, and, what is better, effective. Raking up and burning the affected leaves at the end of the season goes a long way in preventing the disease, and deep digging—that is, drawing the surface soil into the spaces between the plants and burying it well down, may prove effective.—G. ABBEY.

ROYAL HORTICULTURAL SOCIETY.

DRILL HALL, DECEMBER 14TH.

THE last meeting of the Royal Horticultural Society was held on Tuesday, and was, taken as a whole, very successful. The various exhibits were splendidly diversified, and examples of excellent culture were frequently observable. Mr. W. H. White's collection of Calanthes was a superb feature of the show. All sections were represented in greater or lesser numbers.

FRUIT COMMITTEE.—Present: P. Crowley, Esq. (in the chair); with Rev. W. Wilks, and Messrs. G. Bunyard, J. Cheal, J. H. Veitch, J. Willard, G. Reynolds, F. Q. Lane, T. Fife, H. Balderson, G. Wythes, J. H. Laing, G. Woodward, W. Bates, A. F. Barron, W. Pope, W. Farr, W. J. Empson, A. Dean, and J. Wright.

As will be seen there was a good attendance of members, as is usual at the last meeting of the year, also, as is usual, they were not overwhelmed with work.

A few examples of Celery were sent from Chiswick, but only one met with special approval; this was *Sutton's Solid White*, with very firm fleshy stalks and hearts, remarkable for great tenderness and sweetness. Award of merit was granted by nine against six votes.

Pear President Barabe was sent by Mr. W. Allan from Gunton Park. A medium size fruit of the shape of Fondante d'Automne, with a large open eye; very juicy, tender, and sweet. An award of merit was granted unanimously.

Prague Celeriac Géant de Prague.—Splendid bulb-like roots of this vegetable were sent by Sir Trevor Lawrence, Bart.; also fine samples of Couve Tronchuda. A cultural commendation was awarded.

Mr. Owen Thomas sent splendid samples of Frogmore All the Year Round Cucumber. Much approved, but, as previously stated, desired to be seen in February. The greater the test the greater the triumph when success is finally won.

Mr. S. Mortimer sent a dozen boxes of selected Conqueror Tomato; extremely bright, flat, but rather small, and fruits corrugated (silver Banksian medal).

Mr. H. Berwick sent from Sidmouth fifty-six dishes of Apples, some of them very fine, including Hormead Pearmain, Newton Wonder, and Striped Beefing (silver Knightian medal).

Twenty dishes of Apples were sent by Mr. J. Day, gardener to the Earl of Galloway, Galloway House, Wigtonshire; excellent fruit for the district (silver Banksian medal).

FRUIT FLAVOUR CLASSES.—The first prize for a dish of Apples was taken by Mr. C. Herrin, Dropmore, with Adam's Pearmain in good form; Mr. C. Ross being second with Cockle's Pippin. For Pears the first prize went to President Barabe, from Mr. W. Allan, Gunton Park; and the second to Mr. G. Wythes, Syon House, with Winter Nelis.

FLORAL COMMITTEE.—Present: W. Marshall, Esq. (in the chair); with Messrs. H. B. May, C. E. Pearson, R. Dean, J. H. Fitt, G. Stevens, J. Hudson, J. F. McLeod, T. Peed, J. Jennings, C. J. Salter, C. Jefferies, W. Bain, G. Gordon, C. E. Shea, H. J. Jones, H. J. Cutbush, E. Beckett, R. M. Hogg, J. Walker, E. Mawley, G. Paul, C. Blick, H. Turner, and the Rev. G. H. Engleheart.

A large group of Chrysanthemums came from J. W. Temple, Esq., Teyswood, Groombridge, but quality was not a very conspicuous feature (silver Flora medal). Mr. W. Farr, gardener to A. F. Pears, Esq., Spring Grove House, Isleworth, staged a collection of well-grown plants of Begonia Gloire de Sceaux. The plants were carrying good flowers above the metallic bronze foliage. A few green-foliaged plants were used to increase the effect. Mr. Farr also sent a group of Poinsettias composed of dwarf plants with richly coloured bracts of good size (silver Banksian medal). Mr. J. Bryson, Helensburgh, staged a number of seedling decorative Chrysanthemums in which quality was conspicuously absent.

Bunches of magnificent Zonal Pelargoniums were exhibited by Messrs. H. Cannell & Sons, Swanley, Kent. The richness and diversity of the colours made this one of the most effective exhibits in the show. Particularly conspicuous were Countess de Morella, Mrs. Simpson, T. W. Lawton, Owen Thomas, Duchess of Marlborough, St. Cecilia, Herrick, Mrs. W. Partridge, Wordsworth, Shelley, Niagara, Lord Reay, Lord Farrer, Soldier's Tunic, and Lady Tennyson (silver Banksian medal). Messrs. H. Low & Co., Upper Clapton, staged a collection of Cyclamens and Carnation Winter Scarlet. The plants of the Cyclamens were rather small, but were producing flowers of good quality and substance (bronze Banksian medal).

Messrs. J. Veitch & Sons, Royal Exotic Nursery, Chelsea, sent several pots of the hybrid Begonia Ensign, as well as plants of a new hybrid called Winter Cheer. This is very floriferous, the colour being rosy carmine. Messrs. W. Cutbush & Son, Highgate, sent a large collection of double Primulas. The varieties represented were Princess and Marchioness of Exeter. The plants were carrying large numbers of flowers of good shape (silver Banksian medal). Mr. G. Cragg, gardener to W. C. Walker, Esq., Winchmore Hill, sent flowering sprays of Cissus discolor, and Mr. J. R. Tranter, Henley-on-Thames, flowers of Chrysanthemum Mrs. J. R. Tranter.

Considering the time of the year, the Chrysanthemums staged by Mr. H. J. Jones, Ryecroft Nursery, Lewisham, were highly creditable. Some were slightly past their best, but that was only natural. Amongst the best were Mrs. W. H. Lees, Geo. Seward, Julia Scaramanga, Miss Phyllis Fowler, Golden Gate, Georgina Pitcher, Mons. Demay-Taillandier, Silver King, Simplicity, Mrs. H. Weeks, Wilfred Godfrey, and W. G. Newitt. Ferns were carefully interspersed amongst the flowers (silver Flora medal).

ORCHID COMMITTEE.—Present: H. J. Veitch, Esq. (in the chair); with Messrs. J. O'Brien, De B. Crawshay, H. M. Pollett, H. Ballantine, W. H. White, H. J. Chapman, W. H. Young, F. J. Thorne, E. Hill, J. Douglas, T. W. Bond, T. Statter, C. Winn, S. Courtauld, and T. B. Haywood.

Messrs. F. Sander & Co., St. Albans, had a small collection of Orchids with Dracæna Godseffiana. Calanthes only were represented, and these comprised Bella, Bryan, Florence, Victoria Regina, and Phaio-Calanthe Arnoldiana superbum. Mr. W. H. White, Orchid grower to Sir Trevor Lawrence, Bart., Burford Lodge, Dorking, staged a magnificent collection of Calanthes. The plants were splendidly grown, and carrying flower spikes of great length. The colours were particularly bright. We noted Veitchi splendens, Victoria Regina, Veitchi lactea, burfordiense, versicolor, Bella, revertens, nivea, sanguinaria, Bryan, and labrosior. Mr. White also sent Cirrhopetalum Medusæ, Cypripedium Leeanum superbum, Masdevallia corniculata, M. irrorata, Dendrobium cymbidioides, Lælia rubescens, and Cypripedium callo-bellum (silver-gilt Flora medal).

A small group of Orchids came from Messrs. J. Veitch & Sons, Ltd. The plants were not numerous, but with no exception they were of good quality. Lælio-Cattleya Pallas was in fine form, as were L.-C. Eunomia, Cattleyas leucoglossa, Miranda, and Mantini. Besides these there were Cypripediums Leeanum, Adrastus, Sallieri, Zeno, Prospero, Actæus, and Niobe (silver Flora medal). Messrs. Paul & Son, Old Nurseries, Cheshunt, staged ten round hampers of Cypripediums. All the plants were very healthy, and producing capital flowers. They comprised Spicerianum, Wallacei, Chantini, Harrisianum, grandiflorum, alba marginata, syletinse, Ashburtoniæ, guttulatum, and insigne aureum.

Messrs. H. Low & Co., Upper Clapton, staged a miscellaneous group of Orchids, amongst which were observed Cypripedium Bellona, C. Pitcherianum, Williamsi var., Calypso, Sallieri Hyeanum, insigne Laura Kimball, and others. In addition to the Orchids referred to there were numerous smaller exhibits sent by Mr. A. Wright, gardener to T. McMeekin, Esq., Lower Norwood; Mr. R. W. Richards, The Priory, Usk, Mon.; Mr. W. H. Young, Orchid grower to Sir F. Wigan, East Sheen; Mr. W. Cobb, Tunbridge Wells; Mr. J. Douglas, Bookham; Mr. T. Duck, Abbey Wood; Mr. G. Walker, gardener to H. Druce, Esq., St. John's Wood; Mr. W. Buckell, gardener to M. S. Cook, Esq., Kingston Hill; Admiral Sir Henry Fairfax, Melrose, N.B.; C. S. Lucas, Esq., Warnham Court, Horsham, and Mr. G. Cragg, gardener to W. C. Walker, Esq., Winchmore Hill.

CERTIFICATES AND AWARDS OF MERIT.

Begonia Winter Cheer (J. Veitch & Sons).—The parentage of this hybrid is B. socotrana and a tuberous-rooted variety. The plant is of an upright habit and very free flowering. The colour is a rich rosy carmine (award of merit).

Calanthe burfordiense (W. H. White).—Crimson is the colour of this charming Calanthe. The flowers are of medium size and good shape. The spikes are of fair size (award of merit).

Calanthe Harrisi (Downes).—A magnificent white form with occasional faint blush suffusions. The flower is of considerable size (first-class certificate).

Calanthe sanguinaria (W. H. White).—The varietal name of this Orchid tells the colour, save that it conveys no idea of the white tips of the sepals.

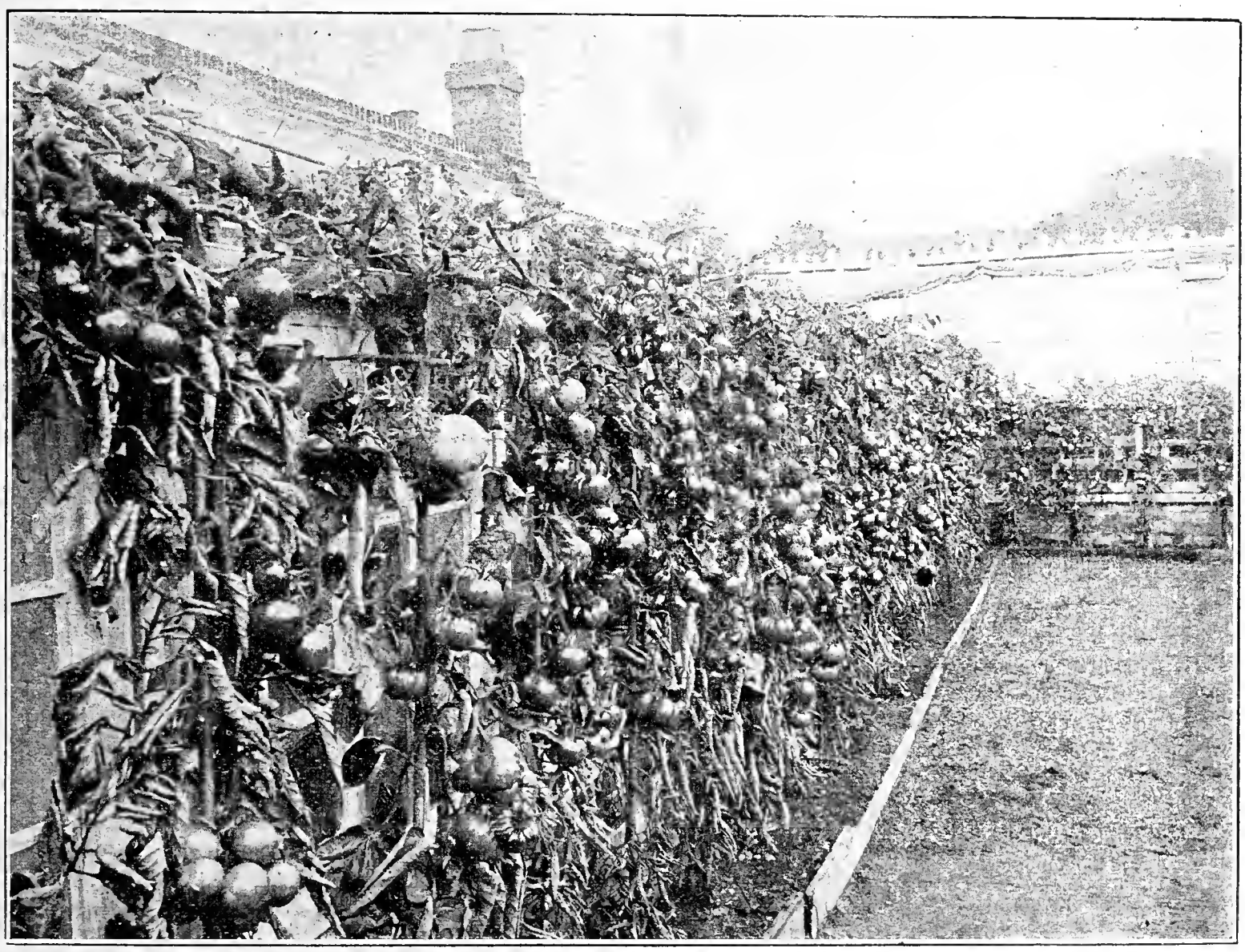

FIG. 84.—MR. EMPSON'S OUTDOOR TOMATOES.

Calanthe Veitchi splendens (W. H. White).—This is a variety of fine quality. The sprays are long and the flowers are borne very closely on them. The colour is very bright rose (award of merit).

Cypripedium Aeson giganteum (J. Veitch & Sons).—An enlarged and improved form of the type (award of merit).

Lælia anceps Mrs. de Barri Crawshay (de B. Crawshay).—A superb form of L. anceps. In all respects it is vastly superior to the type. The sepals and petals are rich purplish rose, while the lip is very deep velvety crimson. The throat is crimson veined on a pale primrose ground (award of merit).

Lælia Briseis (J. Douglas).—This is the result of a cross between L. harpophylla and L. purpurata, the former being by far the more conspicuous. The narrow sepals and petals are yellow, and the long narrow lip white with flushes of purple on the sides. The throat is pale yellow (award of merit).

Lælia Lindleyano-elegans (W. H. White).—The sepals and petals of this hybrid are pale sulphur in colour and very narrow. The small lip is rich crimson, and the throat white with a central crimson line (award of merit).

Lælia præstans superbum (R. W. Richards).—This is an excellent form of the type (award of merit).

Lælia rubescens (W. H. White and G. Cragg).—One of the most attractive Orchids in the show. The sepals, petals, and lip are all of a bright mauve colour (award of merit).

Tricopilia brevis (W. H. Young).—A charming Orchid that is comparatively well known. The short tubular-like lip is white on the outer margins and primrose yellow within. The sepals and petals are deep brown with yellow bars and tips (award of merit).

CYCLAMENS AND PRIMULAS AT READING.

THOUGH the name of Sutton had been to me as "a household word," it was not until a recent date that I was able to pay a personal visit to their establishment. Prior to this I had been in spirit, for my friends had spoken delightedly of what they had seen, and I had read from time to time of visits made by greater wanderers than I can ever hope to be. These served one purpose at least, they whetted my appetite, and caused me to make the most of an opportunity. Having been, and having seen, I will follow up my initial expedition into the town of Reading by a few notes of what I saw and admired.

Some persons may say "Why did you not wait for the summer and then go?" adding, perhaps, that there would be much more to see. To this I would reply that the man who does not seize an opportunity when it arises is—well, remiss, and further that the Primulas and Cyclamens were amply satisfying. More I might have seen so far as numbers are concerned, but a higher grade of quality would be impossible, at least such is my opinion. For upwards of a score of years I have been growing these two kinds of plants, but I have attained to no such excellence especially, perhaps, in the Cyclamens.

There were not half a dozen only, but hundreds, even thousands, of plants, filling house after house and presenting a lovely display. Here one would see a gorgeous mass of brilliant scarlet, there some scores of plants clothed with the purest white, yonder similar numbers of a warm crimson or a bright blue. And so one might go writing in general terms of what had been seen, but such is not the present intention. There was here evidently something to be learned from a cultural point of view, and my guide readily gave me all the information as to the methods of procedure that are adopted. Neither in respect of the Primulas nor the Cyclamens did it differ materially from the lines upon which I had worked, but the results were markedly superior. I shall continue to try my hand, and when I can produce plants superior to those of Messrs. Sutton & Sons I shall rest on my laurels in perfect contentment.

Of one thing I am assured, which is that cultivation alone could not possibly do everything. The best attention will do much, but it will not add every desirable attribute for which the florist looks to any plant. There must first be an inherent quality which high culture may accentuate and bad systems would almost suppress. In this fact lies the crux of the matter. The Reading strains of these two plants possess the best points that can be wished, and plants grown from them require skill and common-sense culture to bring these to the surface. With what the firm started many years ago I am not aware, but it is easy to see the advance that has been made even in the last half a dozen years. Then we should have said the summit is reached and no better can be produced. But Suttons recognise no zenith, and the work that was commenced in the long ago continues to-day with unabated vigour and surprising success. What the end will be none, I take it, will venture to say.

Looking for a moment at the Cyclamens, it will be conceded that it was not long ago considered a far cry from the persicum to the grandiflorum section, and yet since the inception of the latter both have made enormous strides. It is fortunate indeed that there is no confliction between these two strains—each can be grown to advantage in every collection. The former gives the grower small flowers in enormous numbers, and foliage so beautifully marbled that for it alone the plants would readily be cultivated; while the latter provides almost as many flowers of considerably larger size, but the leaves lack the handsomeness of the smaller and older section. It is therefore obvious that both must have a place in all establishments where Cyclamens are appreciated, and I for one would like to know where they are not. I shall not attempt a selection where all are so good, but must single out for special mention the deep-hued Vulcan and the delicate Salmon Rose. These are superb in all respects, but then so are the vast majority of the others.

Chinese Primulas for the embellishment of rooms, greenhouses, and conservatories in the winter are unsurpassed, and are probably only rivalled by the plants named in the preceding paragraph. The diversity of colour now to be found amongst the many varieties was not always a characteristic of Primula sinensis. At the present moment one may have any colour from pure white, through the shades of rose and red to the deepest crimson, with heliotropes and blues to swell the list. Again must the Reading firm be accorded its meed of praise and credit, for it is to its enterprise, persistency, and resource that we owe many of the most distinct varieties in cultivation. Ever since a commencement was made in the cross-fertilisation of varieties of Chinese Primulas the results have shown an advance. There have doubtless been failures of which the horticultural world has never known, but there has, on the whole, certainly been advance.

As the time of beauty amongst these, as with the Cyclamens, is but in its infancy for the present season, no selections will be made. Instead of this, everyone who can is counselled to go to Reading any time during the next two months, and behold the display for themselves. They will find many other plants besides the Cyclamens and the Primulas in which to take an interest. I have been once, but shall go again when I can, for the eye is pleased by the beauty of the flowers, while the mind is being enlightened out of the abundance of Messrs. Sutton's foreman's knowledge. —F. W. W.

A REJOINDER TO MR. J. W. MOORMAN.

IT is to be regretted that Mr. Moorman does not attempt to verify his figures before rashly rushing into print. Until very recently he was a member of the Committee, and if he did not know, the necessary knowledge could have been had for the asking.

The cash contributions of the Royal Aquarium to the N.C.S. during 1896, the year with which Mr. Moorman deals, were these :—

September Show	£50	0	0
October Show	75	0	0
November Show	275	0	0
December Show	50	0	0
Total...	£450	0	0

But there is something which does not strike a superficial observer like Mr. Moorman—*i.e.*, the cost of the four exhibitions to the Royal Aquarium Society. All the necessary staging, tables, and baize; the printing and posting of the bills announcing the shows; all the advertisements in the daily and weekly papers, with the exception of the few exclusively devoted to gardening, are provided for the N.C.S. without charge. The N.C.S. do not pay the costs of hiring the place for their shows, nor for attendants, police, lighting, music and moneytakers. They are free of the many charges incidental to hiring a hall; they are not worried by insurance agents and County Council officials. There is no demand in respect of damage or dilapidation. They are simply at the cost of the labour necessary to the staging arrangements, and the provision of the indispensable machinery of their own exhibitions.

Taking a low estimate, I put the cost of the four shows at the Royal Aquarium as something like the following :—

September Show	£75	0	0
October Show	75	0	0
November Show	150	0	0
December Show	75	0	0
	375	0	0
Add Cash	450	0	0
And the result is	£ 25	0	0

As against Mr. Moorman's £300!

I hold that I have placed the cost of each show at considerably less than that which would have to be borne by the N.C.S. did they have to defray the whole amount. Let Mr. Moorman and those who think with him ascertain the cost of hiring nearly 5000 superficial feet of tabling and baize (the quantity provided at the recent November show), and add to that the cost of labour in erecting it. The growlers are ignorant of the charges incidental to carrying out a large flower show in London as a financial speculation; it is this formidable amount, added to the labour, vexations and worries, which has led me to determine to have nothing to do with any project of the kind unless the entire cost were guaranteed beforehand.

If Mr. Moorman would only take the trouble to examine the last published schedules of prizes he would find it distinctly stated that the Royal Aquarium Company give £50 towards the Dahlia and Gladioli prizes at the September show; but as the Committee prefer to consider this particular exhibition as held by the Royal Aquarium Company and not by the N.C.S., the Society's funds is not credited with this £50; on the other hand, the amount of the Dahlia and Gladioli prizes, a proportion of the Superintendent's expenses, luncheon to the Judges, are not debited to the Society.

There are other points in Mr. Moorman's communication equally imperfect or erroneous, and misleading. At the special meeting of the General Committee to which he alludes in paragraph 4, page 553, he insinuates that the officials quashed the proceedings. Nothing of the kind. A sub-committee of three members was appointed to look for suitable places in which the exhibitions of the Society could be held, and report. They never once met or attempted to discharge the duties they undertook to perform. If I may presume to regard myself as one of the "higher officials," I admit I distinctly stated I should cease to be the Secretary of the Society if its shows were removed from the Royal Aquarium, and I said this in reply to a direct question, or I should not have given expression to this determination. I did not in any way oppose the appointment of the committee of inspection; I simply refused to add to the labour incidental to the secretaryship by acting upon it.—RICHARD DEAN, *Secretary National Chrysanthemum Society.*

FREEDOM FOR THE N.C.S.

WELL-WISHERS of the National Chrysanthemum Society must welcome the discussion which has arisen in the pages of the *Journal of Horticulture* concerning the Society's humiliating position in relation to the Royal Aquarium. The letter from Mr. Moorman last week reviews the subject in an impartial and comprehensive manner, and few men are so well qualified to deal with it as your correspondent. He has had long

experience in connection with shows as an exhibitor, as a judge, and as an active working member of committees, his energy and business aptitude having rendered his help valuable in many ways.

It cannot be possible that the officials are unaware of the inconveniences attending the shows at the Aquarium, nor can they be ignorant of the strong feeling there is throughout the country against holding exhibitions under such circumstances. It is notorious that some of the finest collections of cut blooms and plants ever brought together for competition in Great Britain have been practically ruined as exhibits by the inadequate space for arrangement. Visitors who appreciate the excellent work done by the Society, and who recognise that the N.C.S. officials do their utmost to make the best of such opportunities as they have at their disposal, cannot fail to be distressed at the results when they visit the Aquarium shows in the afternoon or evening.

How the Committee and members have endured the alliance under such conditions so long it is difficult to understand, and how a Society which takes the title of National can be content with such a policy of nervous dependence upon another institution is quite beyond general comprehension.

The great argument against a change is, that besides the contribution to the prize fund, which would be lost, the N.C.S. takes no risk. If the weather prove unfavourable and the attendance be small, the Aquarium Company are the losers and not the Society. But it is obvious there is another side to this argument, for what becomes of the profit when the visitors crowd every portion of the building, as they do at all the November shows? I have never seen the Aquarium so crowded, except at holiday times, as it is on the occasion of the N.C.S. principal exhibitions, and it is certain that it must give substantial results, or a body of business men would not contribute £200 or £300 for the sake merely of encouraging the cultivation of the Chrysanthemum. Probably they do not gain over the October or December shows, but they make it up in November, or they would not have continued the arrangement so long. The fact is the Aquarium Company manage to secure a very important addition to their attractions at much less outlay than many which they provide, and with not half the risk or trouble. Surely, however, the N.C.S. was not founded for aiding in the support of an institut on of this kind, and the profits derived from the immense amount of work performed by the members in producing such large numbers of excellent productions for exhibitions, should be applied entirely to the cause of the Chrysanthemum.

With the reputation the N.C.S. now has it could hold a show anywhere in the London district and insure a large attendance. If a permanent home could not be secured, why could not the shows be held in different metropolitan centres every year? It would be quite possible to find ample accommodation in different directions if it were really desired to do so, and many believe that the Society would receive more substantial support than it does now if such an independent and self-reliant policy were adopted. Unquestionably it would redound more to the credit of a society which has grown to be an horticultural power second to none devoted to a special object. The strength possessed in its long roll of membership, and its prestige, render it all the more pitiable that the Committee should rely so weakly upon an institution absolutely foreign to the purpose and intent of the National Chrysanthemum Society. —Ex-Official.

I SHOULD not have taken any farther part in the discussion which has arisen in your columns with respect to the N.C.S. shows at the Westminster Aquarium but for the receipt of an ordinary letter from a well-known gardener at Reading, who, at the close of his communication, referring to the November show, said "the crush was worse than ever, and there was no chance whatever of seeing the principal exhibits after the morning, except in St. Stephen's Hall, which is a fine room if only it was better lighted. Still few people seemed to find it. There being a cheap trip to London from here on the 10th, five of my men went up to see the show, but they all next day complained of being unable to see anything because of the crowd and the place was so full of smoke. It is really disgraceful that smoking should be allowed at all."

This is the testimony of no partisan or purist, but of a plain, practical gardener, and it is that of thousands of others who are not members of the executive or do not hold briefs for the place. That six persons from one garden only should have come over thirty miles to London expressly to see the show illustrates the undoubted fact that by far the greater portion of those who attended the show go expressly to see the Chrysanthemums and not the variety performances. Is it probable that they would go from an area of certainly fifty miles round London to hear a woman squeal through her nose, or see a man make an ass of himself, or the shouting and hullaballoo that makes the whole place so hard for a flower lover to endure? No one seems to think how many thousands of people keep away from the show which they cannot see and enjoy. Why is not that fine St. Stephen's Hall fully utilised for the purpose? Is it because it keeps the visitors too far away from the reserved seats? —A. D.

P.S.—Since writing the above I have read Mr. Moorman's letter to you. It is one of those documents that is at once convincing and unanswerable. It is specially satisfactory to obtain such information from one who is thus behind the scenes. Still farther does it show how strong is the objection to the R.A. as a place for the Society's shows, entertained by many members of the executive. The side lights thus thrown on the subject at issue are invaluable. I have often wondered why a Society calling itself "National" should not include in its executive any of those gentlemen who in various parts of the kingdom have shown deep interest in the cultivation of the Chrysanthemum. Is their absence due to the distance from the place of show? Very likely officials may feel in a friendly way bound to the R.A, but the N.C.S. does not exist, neither was it originated, to exploit a glorified music hall. —A. D.

I THINK responsible officials of the N.C.S. are very short-sighted in sticking to the Aquarium. They might have a distinguished, fashionable, and wealthy list of members and larger funds if a more suitable building could be found. I sent tickets to some friends this year. They met me at the Aquarium, and I was really ashamed to introduce them into such an atmosphere of smoke. I am a smoker myself, and would not be thin-skinned about allowing it in reason, even at a show, but I do not see how it can be avoided in volume at the Aquarium. It is objectionable to many, and prevents many from going, especially ladies. I am very sorry it is so, and not to observe any signs of improvement, but the reverse. More and better space was formerly placed at the Society's disposal, and the shows were decidedly better displayed and certainly more enjoyed than they are now. Such crushing, pushing, and huddling cannot, I think, continue without prejudice to the Society. – A Member of the N.C.S.

N.C.S. Floral Committee.

The last meeting for the present season of the Floral Committee was held on Monday, the 13th inst., Mr. Thomas Bevan in the chair. On this occasion there was not a single exhibit of Chrysanthemums, this experience being almost unique in the history of the Society. A flower-pot was submitted for adjudication, having a narrow and shallow channel running round the rim of it. The object of the channel is to prevent earwigs from getting on the plants. However, this was generally considered quite inadequate for the purpose, as during very hot weather the channel would have to be filled repeatedly, and also was too small for the purpose.

A resolution was moved altering the number of blooms to be submitted of any new variety to two only, instead of three as formerly. This was, however, lost. A vote of thanks to the Chairman for his services during the past season was unanimously carried.

In the evening the Floral Committee dined together as the guests of the General Committee at the Royal Aquarium Tavern, under the presidency of the Secretary, Mr. R. Dean. A goodly number were present, and an enjoyable evening spent.

Popular Varieties of Chrysanthemums.

A table showing the number of times certain varieties were exhibited at eighteen of the principal shows may be of interest and utility to many readers, as now is the time to purchase anything new to lay the foundation for a successful flowering season. There have been no less than 110 varieties exhibited. The table has been taken from the winning stands of twenty-four Japanese, and duplicate blooms are counted as one.

No. of times shown.		No. of times shown.	
17	Phœbus	4	Mad. Gustave Henri
15	Viviand Morel	4	Jno. Seward
15	Mons. Chenon de Leché	4	Pride of Madford
13	Edith Tabor	4	A. H. Wood
12	Madame Carnot	3	Mrs. H. Weeks
12	Australie	3	Van den Heede
11	Charles Davis	3	Mad. Ad. Chatin
10	Australian Gold	3	A. G. Hubbuck
10	Simplicity	3	Hairy Wonder
8	Etoile de Lyon	3	Primrose League
7	Mrs. J. Lewis	3	Graphic
7	International	3	Viscountess Hambleden
7	Mrs. C. H. Payne	3	Miss Rita Schroeter
6	Pride of Exmouth	2	Baron Ad. de Rothschild
6	Modesto	2	Mrs. G. Carpenter
6	Mutual Friend	2	Mdlle. M. A. de Galbert
5	Edwin Molyneux	2	Col. W. B. Smith
5	M. M. Ricoud	2	Mrs. G. W. Palmer
5	Mrs. W. H. Lees	2	President Borel
5	Mrs. C. Blick	2	Mons. Hoste
5	Mons. Panckoucke	2	James Bidencope
5	Eva Knowles	2	Bellem
5	Thérèse Rey	2	Silver King
5	Duke of York	2	Miss D. Shea
5	Thomas Wilkins	2	Reine d'Angleterre
4	G. C. Schwabe	2	Mons. Georges Biron
4	Lady Hanham	2	Amiral Avellan
4	Elsie Teichmann	2	Mdlle. Marie Hoste
4	Lady Ridgway	2	Lady Byron
4	Mons. C. Molin	2	Dorothy Seward
4	Oceana	2	Commandant Blusset

The following varieties were shown once:—G. J. Warren, Julia Scaramanga, Mons. Bernard, M. de la Rocheterie, J. Seward, Richard Dean, Mrs. Dr. Ward, C. W. Richardson, Lady Dorothy, Prefet Robert, W. Fyfe, La Colosse Grenobloise, Mons. Gruyer, M. Demay Taillandier, Mrs. H. Kloss, Mrs. E. Tate, General Roberts, L'Isère, Madame Rozain, Mrs. C. Orchard, M. Gerard, Elthorne Beauty, Queen of Buffs, Jno. Shrimpton, Beauty of Teignmouth, W. G. Newitt, Violetta, Robert Owen, Mons. Ed. André, H. H. Spencer, Madame Ad. Moulin, A. H. Fewkes, Rose Wynne, Ialene, Snowdon, Deuil de Jules Ferry, Sunstoue, Duchess of York, Mrs. F. A. Bevan, Waban, Golden Gate, Duchess of Wellington, Floreuce Davis, Stanstead White, Wm. Seward, Eda Prass, Louise, and Mephisto.

—A. E. Raisbeck, *The Gardens, Benton Hall, Newcastle-on-Tyne.*

Timing Chrysanthemums.

May I suggest, for the benefit of myself, and no doubt other readers of the Journal, that Mr. E. Molyneux, or some other experienced Chrysanthemum grower, give a list of, say, sixty of the best Japanese Chrysanthemums (old and new) to grow for exhibition cut blooms; also indicate any that require stopping and when, and which bud to retain?

It is very disappointing, after having grown plants for twelve months, to find the season's trouble and expense thrown away by not knowing the exact treatment of certain varieties. I have mismanaged old ones this year. For instance, I took some on the crown bud that I ought to have taken on the second crown; and, again, I have taken second crown buds where I ought to have taken crowns.

Only being a grower of 200 plants, and wishing to make the best of these, a little advice as to the selection, when to stop, and buds to select would be very acceptable, so as to have them all as near as possible in full bloom together by the middle of November in the West Riding of Yorkshire.—William Bowman.

Appointments of Judges.

May I be allowed to make a suggestion that I feel sure, if adopted, would be of great service to a large section of your readers who are interested in Chrysanthemum exhibitions? That is, to ask you to devote a space under the "Exhibition Notices," signifying what judges had been appointed to adjudicate at such exhibition. We know that, as a rule, as soon as the N.C.S. date is fixed for the principal November show, the leading provincial societies follow on in chronological order, avoiding each other if possible. But many are obliged to clash, not being able to sandwich themselves between others they would like to avoid.

After the date of the exhibition is fixed, the next important thing in most societies is to appoint judges, and it often occurs that the persons chosen by the committee have already been engaged by another society, and even the reserve man has been engaged also. This means much correspondence on behalf of secretaries and judges, and very often delay in publishing schedules; whereas if there were some authority they could refer to, it would save no end of inconvenience and time.

If it is practical I should suggest something in this order:—

Chrysanthemum Exhibitions.—Judges Engaged in 1898.

Hull, Nov. 16th and 17th.—Messrs. G. Gordon, Ed. Molyneux, J. W. Moorman, and J. Wright.

This would facilitate business, and be of immense service to those directly interested in making arrangements for the autumn exhibitions, and their names is now legion, so many springing up in every county. I feel sure secretaries and judges themselves would keep you posted up as soon as the engagements were fixed. I already have had to refuse engagements for next season on account of being engaged for the dates, as have no doubt some of my fellow judges.—C. Orchard, *Bembridge, I.W.*

[We can only publish such notifications as come to hand, as in the case of Hull. Our excellent correspondent and able chrysanthemumist omits his own appointments. Mr. Wright wishes it to be known that he does not desire fresh applications, though he will endeavour not to disappoint the few societies at whose shows he officiated this year if his services should be required.]

Naming Chrysanthemums at Shows—Prize Cards.

I was pleased to see "E. M." calling attention to the laxity of naming blooms (page 557). It is grievous to see the very slovenly way this is done at many excellent exhibitions. The wrong or imperfect naming of a variety does not end at that exhibition, but is very often perpetuated and carried on through others by young beginners taking the names down and feeling safe in being correct after passing the ordeal of the keen eyes of judges at an exhibition. I remember once having to disqualify a stand of blooms that should have been distinct for containing duplicates. It subsequently turned out to be that of a "young beginner," and he assured me that he had copied the names from a prize stand at an exhibition he had attended, and procured his cuttings from the same source, so he was more to be pitied than blamed. I certainly think it of very great importance for the Chrysanthemum world at large to have all the varieties legibly and correctly named.

There is another reform that I should like to see at some of our most excellent and leading societies, that more concerns the executive than the exhibitors. That is, the mode of displaying the prize cards. In the majority of cases the card is pushed in between the blooms, or under the board in front, or laid on the top of perhaps the finest bloom in the stand. If there should be a prize for the premier bloom in the show, the award card has either to be placed immediately on the top of the flower itself or laid on one near it, and the general public often wonders which it is intended for. Although in the majority of cases the premier bloom is elevated a little higher than the rest, the great B.P. does not know what the judges and the committee know, so constant inquiries are solicited, or mistakes are made, or people go away in ignorance.

The plan adopted in some societies and which we used to practise at Kingston-on-Thames was to have the card elevated on a wire support fixed to the back of each stand, so that the names could be very plainly seen. All cards were so displayed whether the blooms were prizewinners or not, so that it made it doubly interesting to the public to see, not only who were the winners but who were exhibiting. Many excellent stands of blooms in a strong competition contain flowers but very few points removed from the first prize lot, and of which the exhibitors not only need not be ashamed, but would like their friends to notice, though very often cannot because the card was out of sight, and they could not observe who was the exhibitor.

If executives could pay more attention to this matter by making the necessary arrangements for a person to fix and elevate all the cards by following after the judges, the show would be doubly interesting to the visitors who are immediately interested in the exhibits, and to the public at large, besides adding greatly to the effect of the exhibition as a whole.—C. Orchard.

Single Chrysanthemums.

A very extensive, as well as successful, grower of these pretty flowers is Mr. Forbes, gardener to Madame Nichols of Surbiton Park, near Kingston. Beyond growing all the best varieties in commerce, he has succeeded in raising a fine collection from seed. Last winter he found a plant of Purity carrying what promised to be a good cluster of seed, and knowing how long a time is required to enable seed to mature, placed the plant in a warmer house, and kept it there till the end of January. By that time the seed was plump and ripe. It was then gathered, and sown in a shallow box on sandy soil, and placed in heat. Very soon the seeds germinated, and growth was excellent. The seedlings were shifted singly into small pots, then into others rather larger, and in June were planted out into a solid block, rather close together, in a sheltered and warm part of the gardens. Here, when in the autumn they showed bloom, a rough cover was erected, over which mats could be thrown at night, and so cared for the plants bloomed capitally. Out of the several dozen seedlings at least twelve have been found so good and varied as to be specially propagated for a further trial. It is interesting to find that, although the seed parent Purity is a pure white, and there was no effort at intercrossing, several diverse hues of colour have resulted. Semi-doubles are not good singles, and these, it is hoped, will soon be removed from the lists. Such singles as Purity, Earlswood Beauty, Admiral Symonds, Captain Felgate, Miss Rose, and Duchess Elizabeth are of the most pleasing forms.—A. D.

Chrysanthemum Notes.

"W. S." (page 557) draws attention to the value of groups of Chrysanthemums for providing interest and beauty in an autumn exhibition. Those opinions I cordially endorse. Even at such a fine show as that recently held in Edinburgh, the remark of how some representative Chrysanthemum groups would have added to the interest and splendour of so good an exhibition were frequently heard. Of course there were groups of Chrysanthemums at that particular show, but not what might be expected. Grouping, no matter how well done, cannot be so popular among so many growers as cut blooms. The cost of transit is a serious item, and it is not every gardener who can provide the material at that season of the year. Groups of Chrysanthemums alone at Birmingham, Ascot, Winchester, Kingston, Windsor, Brighton, and York, have been so invariably of high quality for years, that if no other feature were presentable the fame of the groups alone would have made a reputation for the societies named. Equally so at Hull, Lincoln, Birmingham, York, and at the National Chrysanthemum Society's exhibitions have the combined groups of Chrysanthemums and foliage plants won for the societies a reputation.

Much as I sympathise with the exhibitor of cut blooms, it is idle to disguise the fact that the finest exhibit of cut blooms ever seen fails to make a display equal to that of one of the Hull groups. Visitors to the shows of the Chrysanthemum Society of Portsmouth, held in the huge Drill Hall, lamented the bareness of the walls created by the paucity of the groups, and instances might easily be doubled, if it were necessary, in favour of groups as a means of embellishing the exhibition buildings. It would certainly be advisable if some societies were to increase the value of their group prizes, even at the expense of reducing the number of classes of cut blooms. The continued repetition noticeable in the schedules of some societies of twelve and six Japanese blooms, only tends to satisfy the cravings of exhibitors without adding to the beauty or interest of a show. Committees would find, by a judicious cutting up of these useless classes, and a substitution of others, that greater interest would be taken in the show annually by the contributing visitor. For the benefit of the latter the executive ought to have some consideration.

It may be urged by those responsible that anything new in the way of Chrysanthemum classes is difficult to suggest. For the last two seasons the executive at Hull have embodied in their schedule a class that is quite new, and one that appears to be coming popular with exhibitors and visitors alike. I allude to the following class—"A drawing-room mirror, or panel, group of Chrysanthemum plants interspersed with foliage plants arranged for effect in a space of 9 square feet." The Society provided the mirrors, which were 3 feet wide and 7 feet high, and also stipulated that the decorations must in all respects be carried out as if in a drawing-room. As each of the seven competitors arranged their groups in a dissimilar manner much interest was created in this one class.

"W. S." also suggests special classes for blooms of one colour, but in variety. As the Editor remarks, these special classes, if I may so term them, were effectively represented at Winchester as well as at the N.C.S. November meeting. In Edinburgh not only do they have classes on similar lines, but also for special varieties, six of each. For instance, Charles Davis, E. Molyneux, Duchess of York, and Madame Carnot are specially catered for. At Exeter special colours are provided for and interesting results are obtained. Single varieties are referred to also by "W. S." As plants they are seldom seen at shows, but in a cut state their number is on the increase. At the show of the N.C.S. held

on the 6th inst. single-flowered varieties were quite prominent, although I cannot say they possessed very much merit. The excuse for this latter was no doubt the lateness of the season. At many provincial shows I have seen really interesting exhibits of this section, and found them most favourably spoken of by the general body of visitors.—E. MOLYNEUX.

CHRYSANTHEMUM NOTES FROM WALES.

WELSH Chrysanthemum growers must surely be a very modest class, at least judging by the small space they occupy in your weekly columns. It may be safely said, however, that if they do not scribble much themselves they benefit by the scribbling of others, for I find the Journal frequently within reach of the potting bench, where Mr. Expert's tip may be found as to the taking of a certain fickle variety's bud, or which of the up-to-date varieties are really promising and should be added to stock.

The Welsh grower is too far removed to watch and select for himself such new varieties as can only be exhibited at a very limited number of shows. Not that he is far behind either as an exhibitor, as many of our best judges will testify from their experiences at such annual exhibitions as Cardiff, Carnarvon, Wrexham, and others, to say nothing of the occasional friendly excursions made into English territory, notably Bristol, by such doughty champions as Mr. J. Dumble of Picton Castle, Mr. Mabbott of Dowlais, and Mr. Drake of Cardiff. Mr. Dumble is, by the way, a master hand at incurved, and his beautiful stands of these have on several occasions pulled him through with flying colours, where probably his Japs would have failed him. Mr. Dumble took the premier prize at Cardiff, winning for the second year, and thus finally, the challenge cup offered by the Society. This also is the second cup won in the same way by him at Cardiff.

Mr. Mabbott, whose name is already mentioned, works under great climatic difficulties at Dowlais, but has nevertheless done remarkably well. Such foliage as his plants carried I have seldom seen. I think the Editor saw these, for if my memory serve me rightly a note appeared in the Journal about them. Unfortunately Mr. Mabbott, like many more, has suffered from the terrible fogs and damp, but not before his plants had demonstrated fully that good foliage meant in his case good blooms too.

Mr. J. Howe is another enthusiastic Welsh grower who has done wonderfully well at Cardiff for a few years past, but was, unfortunately, unable to show this season, to his very great regret, his blooms being exceedingly good, and his mind being bent on some of the plums of the show. Doubtless had he been allowed to stage, several decisions of the Cardiff judges would have been different. He has of late been at Lanelay, and we have now to congratulate him on his appointment to Dulwich House, where he will no doubt have every encouragement to cultivate his favourite flower.

From Cardiff to Beaumaris is a far cry, but in this lovely corner of the Isle of Anglesey is Mr. Howard, who took all the leading prizes at Carnarvon Show, and might, with great advantage to himself, have ventured much further afield. His blooms, both incurved and Japanese, were of the highest order—large, but not coarse, his stands embracing all the leading sorts. Near at hand is another young but good grower, Mr. Wright, gardener to the Marquis of Anglesey, whose collection has been greatly admired this season.

Growers on the borders, such as Mr. West of Bettisfield Park, who has done so well at Manchester; Mr. Robinson of Brampton Bryan, who is a familiar figure at Hereford, Leominster, Cardiff and Wolverhampton; Mr. Spencer of Goodrich Court, Mr. Townsend of Aston Hall, Mr. Roberts of Halston, and a host of others, practically Welsh growers, are well enough known to your readers. Suffice to say then that their fame has not diminished, though in the case of the last named a bereavement in the family which he serves has unfortunately interfered with his exhibiting arrangements.

Among shows which have not been chronicled in the Journal, a promising one held in the Gymnasium at Newport, Mon., deserves notice. It is the offspring of an old and less pretentious parent at Maindee, and the evolution is a natural and desirable one, such an outlet being necessary among so large a gardening community as a good local show. Cut blooms, trained plants, and groups were really good, and among the successful exhibitors were Mr. J. Lockyer, Pontypool Park, who was also conspicuous at Monmouth, Hereford, and Cardiff; Mr. J. Grisdale, The Gaer, a young grower, who has had large experience as foreman among a noted collection of Chrysanthemums; and Mr. Allen, a successful amateur grower from Penarth. Effective groups were shown by Mr. Sharratt, Stow Park; Mr. Powell, Chesterholm; Mr. Steadman, Maindee, and others.

Another show capable of being, and likely to be, extended much in the future is Swansea, where most excellent examples were crowded into a building much too small. Here we notice the veteran grower Mr. Hawkins of Hendrefoilan and his young rival in the Chrysanthemum arena, Mr. Gilbert of Baglan Hall, late foreman to Mr. Lees at Barnet. Mr. Gilbert is fast making himself a name in South Wales as a first-rate grower and a genial neighbour. Mr. R. C. Williams of Crosswood, too, was conspicuous as usual. We have not had the good fortune to see Mr. J. Lambert's collection at Powis Castle this season. No doubt they were worth seeing, for Mr. Lambert has not cast aside his old love, nor has he lost his cunning.

The season has been exceptionably favourable to the outdoor plants, and both in quantity and quality (and colour especially) they have been a grand success, particularly so in cottagers' gardens in the more rural districts.—BRADWEN.

CHRYSANTHEMUMS—NATURAL-GROWN FOR EXHIBITION.

MANY will no doubt agree with me, that it is chiefly owing to the gigantic prizes given for large blooms at the various shows throughout the kingdom that such grand results have been attained.

Now this has been achieved, I think committees of Chrysanthemum shows would do much good if similar prizes were offered for naturally grown Chrysanthemums. I for one do not appreciate the ungainly looking specimens, trained as flat as a pancake, with about 100 sticks stuck in, for at the best such plants have a very unnatural appearance. Now, as we all know, at the present time there are grand dwarf varieties in the field, therefore I would like to suggest that societies give thoroughly good prizes for the best twelve plants in six varieties grown in 8-inch pots, such plants not to exceed 2 feet 6 inches from the bottom of the pot, and each to be carrying twelve blooms. I would leave it an open question whether such plants should be grown on the one-stem system or not.

It will require some taste and skill to grow twelve such plants with good foliage down to rim of pots, and growers of large flowers would have to leave the beaten track, and adopt another one. I feel certain such specimens would find many admirers, both at shows as well as at home.—A. J. LONG, *Wyford Gardens, Reading.*

POMPON CHRYSANTHEMUMS.

THE value and attractiveness of these lovely free flowering "gems" are each year becoming more apparent. To cut flower arrangements they give the necessary lightness and variety of form, when associated with blossoms of bolder type; and when really well grown plants are produced in pots they find a ready sale. It is useless to grow "leggy" plants with the object of selling them as pot plants, but the man who turns out bushy specimens in small pots, furnished with deep green leaves throughout the entire length of stem, can afford to laugh at the forebodings of pessimists.

I do not intend, however, to champion the good qualities of this section of Chrysanthemums in opposition to those which produce larger flowers when grown in the same way, or even to write disparagingly about the huge, grand flowers modern gardeners and exhibitions provide for both public and private enjoyment. Chrysanthemums of every form are to me "things of beauty," which spread brightness throughout the land at a season when above all others it is needed. The flowering season of Pompons is somewhat earlier than that of other types of Chrysanthemums—excepting, of course, those similar in style to Mdme. Desgranges—and during September and October gardens as a rule are none too well supplied with flowering plants in pots. When those two months come round, how often may gardeners be heard remarking (after seeing a collection of well grown Pompons), "Ah! I must grow a good batch next year." Yet, through some cause or other, the following season finds them in about the same position in regard to a supply of these dainty "midgets" of the Chrysanthemum world. The insertion of Chrysanthemum cuttings is now in progress throughout the country, and these notes are intended as a reminder to those who have made a mental note to grow Pompon, as well as to draw the attention of others to their great value.

As they are the most useful when grown in 5 or 6-inch pots, I find January is quite early enough to insert the cuttings. If large numbers are required they can be rooted quite easily in boxes, but I usually employ 5-inch pots for the purpose, placing the cuttings an inch apart round the edges of the pot, and from three to five in the centre. If room can be spared in a house in which a greenhouse temperature is maintained the cuttings will root quickly when placed under a hand-light and kept close. I have, however, for some years rooted the whole of my Chrysanthemum cuttings in cold pits, and I find by following that plan the plants are invariably very sturdy, and thick in the stem at the collar. I prepare the pits by placing in them leaves to a depth of 3 feet. These are trodden very firmly, and covered with a few inches of sawdust or cocoa-nut fibre for plunging the pots in.

After giving one good watering it is a long time before more is required, provided the pit is kept close, and shaded if a few bright days occur. In the event of a succession of foggy or wet ones it is sometimes necessary to tilt the light slightly to dry up moisture. The only covering I give in severe weather is a double thickness of mats, and although the soil in the pots is sometimes frozen hard, I scarcely lose a cutting, though of course in the event of a continuance of severe weather they are rather late in starting their growth; but I think it is better to have them in that condition than to force them on in houses and then coddle them in pits till they become "leggy," because the weather in April is too severe to place them in the open air.

When the cuttings are well rooted I place them in pots 3½ inches in diameter, and as soon as they are ready for potting, I like to put them into their flowering pots at once, pressing the soil firmly during the process. About the first week in June the pots are plunged in coal ashes, a sufficient distance apart to allow a clear space between the shoots when they are fully grown. If treated in this way and well attended to in the matter of watering, as well as feeding with artificial and liquid manures, well flowered, sturdy, and healthy little specimens will be the result. After the blooming period is over many of the old stools are planted in a warm position in the open air, where they supply quantities of flowers for cutting, as well as young plants for increasing the stock. In regard to varieties, the following selection will be found to include some of the very best.

Early Flowering.—Alice Butcher, red, shaded orange; Anastasio, light purple; Blushing Bride, rose-lilac; California, bright yellow; Flora,

golden yellow (grand in every way); J. B. Douvoir, white, shaded lilac rose; La Petite Marie, white; Martinmas, pink; Miss Davis, pink; Piercy's Seedling, bronzy yellow, one of the best; Précocité, yellow, and White St. Crout's.

Later Flowering Varieties.—Aurore Boreale, orange bronze; Black Douglas, dark crimson; Bob, crimson brown; Cedo Nulli, gold; Comte de Morny, bright purple; Florence Carr, bronze, gold tips, a pretty flower; Golden Mdlle. Marthe, fine; Kyrle, crimson and yellow; Mdlle. Elsie Dordan, rose pink; Maid of Kent, white; Miss Wheeler, carmine; Nellie Rainford, buff; Prince of Orange, orange amber; Snowdrop, a pretty white; Sœur Melaine, pure white; William Payne, bronzy orange, fine; and St. Michael, rich golden yellow.—CHRYSANTHA.

CARDIFF CHRYSANTHEMUM SOCIETY.

"ON Wednesday last between forty and fifty members and friends met to celebrate their annual festive gathering, the chair being taken by Mr. F. G. Treseder, who was supported by Councillor Gerhold, Hon. Treasurer; and Mr. H. Gillett, Secretary. The usual toasts were given, and the Chairman, in responding for "The Society," stated the late show, although not quite so extensive in exhibits, was never surpassed for quality. Councillor Gerhold also responded, and added a few seasonable words of encouragement to the Committee and exhibitors. The Secretary gave a few statistics, and said there would be a small available balance. During the year the Committee have had twelve meetings, and the average attendance of members had been twenty. The town unfortunately lacks a suitable hall for holding the annual show, and besides they have to pay a heavy rental for the two days, which makes a serious inroad on their receipts.

IMPROVING DISEASED PEAR TREES.

OF the specimens submitted by "Young Hand" some are infested by two and others one species of parasitic pests. The twigs are infested in this and last year's wood by brown rot fungus (Sclerotinia fructigena) in the mycelial hyphæ condition. This permeates the cambium (formative layer between the inner bark and outer wood) and alburnum (outer layers of young wood), ruptures the cortex (bark), and produces the first fructifying stage of the parasite — namely, conidia or spores. These spores go forth, and alighting on fruit germinate under favouring conditions of air moisture, and push the germinal tube into the tissues, giving rise ultimately to brown rot—that is, the affected fruits become brown, and afterwards dense downy tufts appear on the surface, often growing in circles, white at first, then dingy red. In this stage the fungus is known as Monilia fructigena, and has spoiled Pears by the bushel.

Some of the shoots have the current year's growth destroyed, and in others the base of this year's wood is swollen to twice its normal size, and in this, in the cambium and adjacent young wood, is seated the mycelium. This spreads, until it girdles the shoot or branch, causing its collapse, the bark having a scarified appearance, but never exposing the wood as in ordinary canker. There is also some scale on the twigs—the mussel scale, Mytilaspis pomorum, now in the egg state. This, however, has nothing to do with the canker.

The roots are for the most part dead, as might easily have been ascertained by slicing off the bark here and there. They are Quince roots, and it is not uncommon for these to die in heavy soil, unless it contains a large amount of gravel.

What can be done to improve the trees? It may be that the soil is unsuitable for the Quince. Many soils have to be improved, and the way to make a strong loam fertile is to first of all drain it, get the water out and air in to a depth of not less than 3 feet, having the drains about 5 yards apart; then remove the ameliorated surface soil down to the clay, and either take this away or burn it, mixing one-third with the soil removed, and put the rest back as ballast for drainage, keeping the ameliorated soil on the top as before with the finer of the burnt clay mixed with it as stated. If the clay is not burnt, which is strongly advised, put in a foot in depth of brick rubbish from an old building for drainage. It is best screened through a half-inch screen, using the rough for drainage and the screenings for mixing in the soil, one-third not being too much, and 15 to 18 inches depth of soil over the drainage is deep enough for Pears on the Quince. Make sure that the border is not a pit for holding water, having a drain to carry it away. In the absence of old building rubbish, loose gravel (not binding) will be found serviceable.

The trees will have to be lifted and laid in whilst the border is made ready. It need not be more than 4 feet wide, or if a high wall, 6 feet. Cut away all the shoots or branches which are cankered all round to sound wood, making clean cuts, and dress every part with a wash formed of caustic soda (98 per cent. purity) and commercial potash, 1 oz. each to 1½ gallon of water, applying with a clean half-worn painter's sash brush, wetting every part, and working gently into the cracks as a painter does into rough parts of woodwork. When convenient the solution is applied at a temperature of 130° to 140°, but it has been found effective when cold.

The roots if matted must be thinned, dead parts removed, and the long healthy roots shortened. Replant carefully, adding wood ashes and a little well decayed manure, for the Quince enjoys humus, and mulch with farmyard manure, about an inch thick. Secure the branches to the wall, and the trees may be expected to prosper.

Another plan we have seen tried in the open and against walls with Pears on the Quince on a stubborn clay was lifting the trees, removing the good soil, providing a foot of drainage, and planting the trees over it with a third of opening material mixed with the top soil. The trees were thus on mounds, and they did well assisted by summer mulchings. On the flat the trees, especially Louise Bonne of Jersey, cankered in stem and fruits. On the mounds the mulching, watering, and feeding enabled them to produce fine fruit, while the sound, healthy growth of the trees did not seem favourable for the attacks of their enemies.—G. ABBEY.

RASPBERRY CULTURE.

IN many gardens, both large and small, it is a frequent thing to find the Raspberry bed in some out-of-the-way corner. This was more commonly the case some years back than it is now, but still I think this luscious fruit scarcely gets its due. The canes, often too numerous, are twisted closely together, many fruiting buds being thus rubbed off or crushed, also no light let into the canes, and the worst of all the grower diligently once a year digs the ground deeply and brings to the surface and removes to the refuse heap great quantities of roots. By this pernicious system the old stools are left standing high up like islands, with no roots save those immediately under them.

In preparation for Raspberries choose a fairly good piece of ground; if under the shade of trees never mind, for our humble friend the Raspberry naturally takes shelter under some growth more imposing than itself. Clear the ground, manure it, and be sure no Raspberries have been ever planted there before, because they in time "grow sick of the same soil." Draw a straight line for a row. At the one end put a stout post (3 feet 3 inches above the ground), a similar one at the other end, and one or two, according to the length of the row, of slighter dimensions between. Run along a piece of galvanised wire, such as is used for hanging clothes on, about 1 foot from the ground, and another about half a foot from the top of the posts; then plant single canes a foot apart all along one side of the wire, passing each cane in and out of the wires for support. You may have as many rows as you require by simply repeating this system. I do not think there should be less than 4 feet between the rows. This is the best plan for growing this fruit, and all others are very second-rate. Each bud has a fair chance; light, sun, and air are admitted. Birds have not so good an opportunity of hiding as if the canes were straggling about, and old ones have a habit of hiding instead of flying out when the boy or man shouts to clear the garden. Then they cannot perch on them as readily as when bent into arches. The whole, too, looks neat and tidy, and above all the fruit can be gathered readily and no canes trodden upon.

I have seen an enlargement of this plan as follows:—A row of Raspberries planted as I recommend, then some rows of Currant bushes, also Strawberries, then another row of Raspberries; the posts, instead of 3 feet 3, being 6 feet high, and a light framework passed from post to post, the whole covered at the fruit season with fish netting. The owner of the garden told me he more than paid his expenses the first year, for he had a choice lot of Currants hanging very late, and all Raspberries, Strawberries, and Currants free from bird or boy depredations. The height of the whole enabled a grown person to go inside without stooping and gather the fruit comfortably.

The Raspberry delights in rich and damp soil, and no Raspberries I have ever seen equalled those grown in the fens; not, indeed, on peaty soil, but on those gardens in the fen towns and villages which were naturally built on the islands in the fens to which the waters never or only partially extended, and where the subsoil is often, but not always, gravel; but whatever the subsoil, the soil above is deep, damp, and rich, partaking something of the fenny nature of the district around.—GROWER.

THANKSGIVING DAY IN NEW YORK.—For Thanksgiving Day trade tempting arrays of fruits were made in the markets and stores. California Grapes were offered in large variety and of excellent quality, and, handsome with their rich bloom, these looked as fresh and crisp as when taken from the Vines several weeks ago. New York State Grapes, of remarkable freshness for this season, were also displayed in variety, and included good Niagaras and Delawares. Lady Apples, some red Bananas, Strawberries from California, Cocoanuts, Pineapples, Italian and French Chestnuts and Cranberries were all in special demand. Other favourite fruits were Florida Oranges and Grape fruits, choice varieties of Pears, as Winter Seckle and Comice, and showy Apples. During one week 37,633 barrels of the latter fruit were received in this city for the local trade, besides 18,861 barrels for export. Other receipts of fruits were two cargoes of Cocoanuts from Colon and Trinidad, which comprised nearly 250,000 of these fruits, and four steamers brought 60,000 bunches of Bananas from Jamaica and Central America. One cargo from Kingston, Jamaica, consisted of 10,613 barrels of Oranges and 665 boxes, besides other shipments of Oranges from the same island. There are now on the way from the Mediterranean to this port 6200 barrels of Almeria Grapes, 3000 boxes of Oranges, and 60,700 boxes of Lemons. Fruits are still coming from the Pacific Coast, and twenty-one carloads were sold in one week, of which nineteen were Grapes. Other western fruits received were Winter Nelis Pears from Oregon, Easter Beurré and other late varieties of Pears from California, a carload of new crop Navel Oranges from the southern part of the same State, and attractive Lemons of excellent quality.—("Garden and Forest.")

GENTIANA BAVARICA.

THE Gentians are impatient of stagnant moisture, especially in winter, and they suffer from full exposure to the midday sun during the hottest months of the year; it is probable that inattention to these points is the chief cause of failure in their cultivation, and of their consequent rarity in our gardens.

With regard to soil they are by no means so particular as is commonly supposed. They will thrive in peat; in a mixture of peat and loam; and also in friable loam containing a little sand. Rich highly manured soil is objectionable, and in wet adhesive loams they will live but a short time; in either case it will only be necessary to supply a small quantity of the compost of peat and sandy loam, with drainage beneath it, in order to place the plants in the condition requisite to insure success.

The plants should be screened from the sun during the hottest part of the day, only the morning and evening rays being allowed to reach them, especially in dry arid soils; but the situation should be as light and airy as possible—they will neither bear to be smothered by other plants, nor endure the drip of trees. During long-continued rains in autumn and winter it will be a good plan to cover the clumps with a large pot, as they are more impatient of wet than cold; but they should not be kept covered longer than is necessary. The species figured is one of the most attractive of the genus, the flowers being rich dark blue in colour. - W. T.

THE YOUNG GARDENERS' DOMAIN.

EUPHORBIA JACQUINIÆFLORA.

THIS species of Euphorbia far surpasses any other in usefulness and floriferousness. The plants are of easy cultivation, and may be grown with great success in a stove where the temperature does not fall below 60° at night. It generally blooms in November or December, but, growing in three successions, abundance of flowers may be had for several months. At this time of the year its intense scarlet flowers and wreath-like shoots with green healthy foliage, add a charming and even a magnificent display. The flowers last well either on the plant or when cut and placed in glasses of water for decorative purposes. Early plants will give flowers from the second growths which are made after the first shoots have been cut.

Cuttings should be selected from young growths in spring with a heel of the old wood when about 3 or 4 inches in length. Have a quantity of powdered charcoal at hand, into which plunge the cuttings to prevent bleeding and flagging. Insert four cuttings close to the edges of 3-inch pots, filled firmly with loam, peat, leaf soil and silver sand in equal parts, allowing a thin surfacing of dry sand on each pot. Make the hole just deep enough for the cutting, and be careful that it rests on a firm base. Plunge the pots to the rims in a propagating pit, where the temperature does not fall below 70°, with a brisk bottom heat of about 75°, wiping all moisture from the glass daily. The cuttings should be kept close until root action has commenced, when air may be given.

As soon as the plants are well established transfer them to large pots, maintaining a ball of soil with the roots. As a compost for this potting use good loam and peat in equal parts, with one-quarter leaf soil and silver sand. The pots must be well drained, and watering be carefully done. Keep the plants close until root action has recommenced, when air can be admitted. A temperature of 65° by night, and about 5° to 10° higher in the day, will be found suitable at this stage of growth. The plant has naturally an erect habit, so that when bushy specimens are required the growths have to be stopped or bent down; the latter, in my opinion, being preferable, as it induces more eyes to break into growth. This operation must not be done until the plants are fairly advanced.

A good method of obtaining specimen plants is to place about six or eight cuttings into a 4-inch pot and shift as required. I believe, however, the plants are more useful when flowered on single stems grown in various sized pots. Plants which are in 60's may be repotted as soon as they have filled the pots with roots. Use a compost as previously advised, with the addition of a little decayed manure. Pots of different sizes may be used, but the strongest plants should be transferred to the 6-inch size, in which they would flower.

Cuttings which are rooted late in the spring may be successfully flowered in large 60's with the help of some approved chemical manure. This is also beneficial to larger plants, and should be applied carefully after the pots are well filled with roots, while an occasional application of clear soot water and liquid manure is appreciated. The plants will require a thin shade during the hottest part of the day; but they must be given as much light as possible, or their naturally straggling habit would be increased. If this method of treatment is followed it will impart both colour and substance to the flowers. As the season advances the temperature ought to be reduced to 60° by night, with an advance of 5° in the day. Ventilation must at all times be given very thoughtfully, using the greatest possible care to avoid cold draughts, which are very injurious.

As soon as the flowering season is over the plants may be kept considerably drier at the roots, giving just enough water to prevent shrivelling until they have made several inches of new growth, which can be used for cuttings if more plants are required. This Euphorbia is less subject to insects than most of our stove plants, although scale, thrips, and red spider will sometimes attack the plants. Syringing with the XL liquid insecticide or fumigating the plants I have found the most satisfactory means of destruction.—J. F. D., *Yorks.*

CARNATIONS IN POTS.

THE Carnation, next to the Rose, is the most beautiful and fashionable flower of the present day, for besides being useful and effective in borders, the plants are especially adapted for pot culture. What can be more effective than these plants when in bloom arranged in the conservatory, Maidenhair Ferns being arranged among the pots? Their many shades may be so mixed that no discord of colour harmony is present. These plants require great attention during their various stages of growth.

The first operation is the layering, which ought to be done about the beginning of July, so that we have good sized and well-rooted plants before the winter frosts set in. The method of layering is—only strong and healthy grass should be taken, the lower leaves stripped off, and a slit made for about a quarter of an inch upwards. The slit should not be too far down the stem, or the plants raised will be spindly. The layer is then pegged down into prepared soil, consisting of equal parts of leaf mould and sharp sand; a part of peat is also a great help to early rooting. If the soil be dry it is as well to give it a watering with the hose the night before commencing to layer. The knife used should be very thin in the blade and sharp, so as to make a clean cut. The next articles necessary are pegs. Some growers use stones in preference to pegs, as they save labour, but they do not keep the layers so steady. Bracken makes excellent pegs, while young shoots of the Snowberry are also used. There are wire pegs made specially for the purpose, these

FIG. 85.—GENTIANA BAVARICA.

of course being good in all respects. The prepared soil, already mentioned, should be forked lightly into that, round the parent plant, care being taken not to disturb the roots more than can be avoided.

Layers made the first week in July should be ready for potting in about five or six weeks. I may mention that the layers should be severed from the old plant about a fortnight before lifting. In lifting the young plants care should be taken to retain as good a ball of soil about the roots as possible. A good compost for the potting is turfy loam, sand, and peat; to every barrowload of loam add a quarter barrowload of sand and a smaller quantity of peat. The pots, before being used, must be thoroughly cleaned and have good drainage, as nothing is more harmful to the success of these charming plants than water-logged soil. The plants should be potted firmly.

The young plants may be placed outside on a gravel walk till the month of October, when they should be placed in the Carnation house. After potting no water ought to be given for a day or two, and when applied it must only be in a sufficient quantity to moisten the soil. After being taken inside they are best kept on the dry side, as too much water causes the leaves to turn yellow and bring on disease. If potted in the early weeks of August the plants will be ready for shifting into their flowering pots by the first week of January. The best size to use for this potting is 6-inch, the plants in these being of a bushy habit and throw up a profusion of flower spikes by the months of June and July. The compost used for the final potting must be a little stronger than the first, consisting of lumpy turfy loam, sand, peat, and charcoal taken from burned prunings of the shrubberies, with a dash of soot. It is the custom of some to add Mushroom bed refuse; but this is unnecessary, as Carnations are better without any manurial agency than that which is contained in the already-mentioned preparation; but it is beneficial that the plants get a top-dressing of sulphate of iron twice in

their growing season. It is a preventive of rust, keeping the foliage green and healthy.

The plants after being placed in their flowering pots should have very little water until the end of March when they begin to grow, but great care must still be taken in the watering of them after this month. Air ought to be abundant on bright days through the winter months. Heat should only be used in the Carnation house in the case of frost or excessively damp weather. As soon as the plants begin to grow they must have stakes affixed, and the young shoots tied loosely to these to prevent breakage. All withered and diseased leaves should be removed, as this not only gives the plants a clean appearance but keeps them healthy, for if these leaves are allowed to remain the healthy ones soon become affected.

During the flowering season bees do much damage to the flowers, and to prevent them tiffany should be placed over the ventilators. From the above culture Carnations are seen at their best, the plants being healthy and the blooms all that could be desired.—EAST LOTHIAN.

NOTES ON CUCUMBERS.

IF an early supply of Cucumbers is wanted a start should now be made. It is to be regretted that one rarely sees a good house of this delicious vegetable with wood, foliage, and fruit in first-rate condition and health, so a few notes as to their successful management will, I hope, benefit readers of the "Domain." For early use it is not advisable to begin before the middle of December. Seeds should then be sown singly in clean thumb pots in a mixture of loam and leaf soil in equal parts. This must be in a moderately moist condition, as no water ought to be given until after germination has taken place. The pots should be filled with the compost, and a slight rap on the bench is sufficient to make it firm enough. Cover the seeds slightly, and plunge the pots in brisk bottom heat, covering them with a sheet of glass to prevent rapid evaporation.

When the seedlings appear through the soil remove the glass, and place the pots on a shelf near the roof in the same house or pit. With the advent of the first rough leaf place the young plants in 3½-inch pots, using a compost consisting of one part good loam and one part old Mushroom manure. This should be previously placed in the house they are to occupy, in shallow boxes, so that it will be thoroughly warmed to the temperature of the house. The pots must be clean and properly crocked, as it is by observing these small details that success is obtained. Provided the soil is moderately moist, as well as the balls of roots, no water will be needed for a day or two. If the young plants have become drawn curl them down in the pots, so that the seed leaves are just above the surface. Continue to keep them near the glass, and if the weather is bright shade lightly until they will bear the sun without flagging. A dew over with the syringe is beneficial to them, but great care must be taken at this time of the year or they will damp off, especially in dull weather. Avoid sudden depressions in the temperature and cold draughts, particularly if the plants occupy a shelf near the ventilators of the house.

Under the foregoing treatment they will be ready to plant out in their fruiting quarters by the end of February. Thoroughly cleanse the house they are to occupy, as this both of structure and plants is the main point in Cucumber growing. The compost for the beds should consist of two parts fresh fibrous loam, one part of horse droppings, and a good addition of soot and artificial manure. Turn it all over a few times to insure all being properly mixed, and wheel it into the house several days before planting, so that it will be well warmed. If the house is span-roofed, say 20 feet by 12 feet, five plants on each side will be ample. The young plants should be carefully turned out and planted firmly, placing a stick to each reaching to the first wire. Care must be taken in watering until they are growing freely, when copious supplies will be required. Syringe on clear days in the afternoon only, and maintain a moist atmosphere by damping surfaces as they become dry. Morning syringing is often the cause of injury to the foliage and should not be resorted to except it can be done very early.

Cucumbers delight in a high temperature and plenty of light. Close early, to raise the temperature of the house to 90° or 100° from sun heat after syringing, and admit a little air before nightfall as a safeguard against condensed moisture, increasing it the next morning at 75°. Never allow the plants to receive a check, either from want of nourishment or by admitting air to cause a draught, and lower the temperature. I find the best way of training is to stop them at the first wire, taking three shoots to each plant, thus giving plenty of room and light for leaf development. The side laterals of these three main shoots will produce fruit in abundance. Regular sprinklings of artificial manure, or diluted stable liquid, will greatly benefit the plants when they are swelling their fruit, also top-dressings of good loam as the roots appear on the surface. Of varieties, perhaps the least said the better, as most gardeners have their favourites, but for handsome fruits and good cropping I find Lockie's Perfection one of the best.—NIL DESPERANDUM.

SUNLIGHT YEAR BOOK.—With the advent of the 1898 edition, this publication enters its fourth year. The range of subjects dealt with is wider than has been the case before, and as most of the information is conveyed in a clear and concise manner, its value will be materially enhanced as a book of everyday reference. Comprising nearly 500 pages, the book is bound in cloth covers, and sold for the price of 3d. by Messrs. Lever Bros., Port Sunlight. In recommending this *vade mecum*, we may mention that it contains an admirably written story by Conan Doyle, entitled "Burger's Secret."

HARDY FRUIT GARDEN.

Winter Pruning Fruit Trees.—Advantage ought to be taken of every favourable opportunity to proceed with the winter pruning of fruit trees in the open quarters, on walls and espalier fences. Exception may be made in the case of Apricots, Peaches, and Nectarines on walls as regards the final pruning at the present time, these trees being best left until closer upon the period when the buds commence swelling. Although, however, the pruning and nailing or tying is best deferred at present, yet in cases where the old bearing wood of the past fruit season has not been removed that work may be carried out at once. It is desirable, also, when the trees are trained on walls to detach the branches and shoots. Secure them in bundles away from the wall, thus preventing the premature swelling of the buds until the time for final pruning arrives.

Pyramid and Bush Trees.—The first important step to take in the winter pruning of these is to look over them for crowded and ill-placed branches. Saw all such out as cleanly as possible close to the point from which they originate. The distance between the main bearing branches of pyramid and bush trees should not be less than a foot. Pare the edges of large cuts quite smoothly with a sharp knife. Branches having very crowded spurs must have some removed or shortened. Those left are much benefited by the process. The summer growths require to be pruned back to one or two buds on the best ripened shoots. Very sappy or green shoots may be cut out entirely, also spray issuing from the old wood in any part of the trees. The leading shoot of each branch, if required to make further extension, should be shortened to one-third its length, so that the buds on the part left may develop into fruit buds, or throw out side shoots, which can be induced by restrictive pruning to do so. The upper bud must of course be a wood bud, in order that the desired extension of the branch may be originated next season.

Wall and Espalier Trees.—Horizontal training is the usual form for Apples and Pears on walls and trellises. When high walls have to be covered Pears, Plums, and Cherries are frequently grown fan-shaped, main branches covering the space, and allowed to extend as far as possible. The branches should not meet at the points nearer than 1 foot. Fruitful trees cannot be obtained when crowding is allowed. The pruning of espalier branches consists in shortening the summer shoots to well-ripened buds at the base, reducing elongated, and thinning out rank spurs. Dead wood must be carefully cut out wherever met. The spurs on the upper espalier branches, particularly on walls, ought to be kept within bounds; for to allow them to project to an undue extent over the branches below is to cause the latter to suffer from a limited amount of light. Neglect in this respect is frequently the cause of trees becoming fruitless, and the proper balance between roots and branches destroyed.

Fan-shaped trees being furnished with a number of main branches may have the foreright shoots shortened and thinned out to form fruit buds. Should any vacancies occur by decay or removals that cannot be filled up by regulating the permanent branches, new shoots originating from suitable positions may be laid in. This can be very frequently carried out with Plums and sweet Cherries, as these fruits are subject to the wearing out or loss of branches, and the system of laying in young shoots affords a ready means of renewal.

Cordon Trees.—The branches of these when the trees are in a flourishing and fruitful condition usually bristle with fruit buds, and the summer growths extending from among the spurs are not, as a rule, numerous. The branches of cordons are trained at the proper distance apart from the first, and each branch receives its due share of light and air. With cordons due attention must be paid to shortening the summer shoots in July, to encourage the formation of fruit buds,

The shoots thus dealt with in summer may now be finally pruned back to the basal buds, leaving two or three, according to circumstances, for increasing the number of fruit buds. When the groups of spurs become elongated so that they extend too far from the main branch they should be gradually shortened back to some of the lower placed buds. Thinning the spurs may also be necessary, in fact essential, where they have become crowded.

The best treatment for cordons is to give all the necessary pruning at the proper time annually from the first formation of the branches and spurs, thus necessitating less drastic treatment than is demanded by neglecting the trees for long periods. Ill-placed spur growths and those behind the branches, also sappy shoots breaking from the old wood, are best removed entirely.

Standard Trees.—The principle of winter pruning free-growing standard trees is that of thinning and regulating the growths to allow the entrance of light through the trees when the foliage is present. The best course to follow is to cut out entirely all interlacing branches, those growing too closely together, and any that spoil the outline of the tree. It is indispensable that dead or exhausted wood and rank sappy spray should be cut out. Standard Apples, Pears, Plums, and Cherries may all be treated on these lines. Though the simplest of all methods of pruning it invariably brings good results, provided the trees have a sufficient amount of space to do their best.

FRUIT FORCING.

Cherries.—The house to be employed for supplying ripe Cherries from the middle of April onwards must now be closed. Be sparing of fire heat at the commencement, not employing it unless absolutely necessary to maintain the temperature at from 35° to 40° at night, and 40° to 45° by day, ventilating when the temperature is about 50° to 55°. Close the house at 50°. Syringe the trees early on fine afternoons, so as to admit of the buds becoming fairly dry before dark. The house will also need damping in the morning and afternoon of fine days, occasionally only in dull weather. The border will be sufficiently moist for some time through the removal of the roof-lights, if not, it must have water to bring it into a thoroughly moist state. Trees in pots, if at all dry, will require repeated supplies of water to secure the thorough moistening of the soil down to the base of the pots.

Strawberries in Pots.—When the crowns commence swelling and the trusses appear, the temperature may be advanced a few degrees by day, but 50° to 55° is sufficiently high at night. Syringe the plants lightly in the early part of fine afternoons. Examine them daily, and supply water to all that require it. Keep a sharp look out for aphides. They cluster on the swelling crowns, and if any appear, vaporise with nicotine, or fumigate with tobacco paper on two or three consecutive evenings. It is very important that the plants be perfectly clean, and fumigation must not be practised when they are in flower.

Another batch of plants should be placed in a house from which frost is excluded, removing the decayed leaves, loosening the surface soil, and, after removing the loose material, supplying a top-dressing of rich compost with a little steamed bonemeal added to it. Attend to the drainage; if defective rectify it, and wash the pots. The plants may be introduced during the next three weeks to shelves in a Peach house started at the next year, or into a Strawberry house. La Grossé Sucrée, Vicomtesse Hericart de Thury, Noble, and Royal Sovereign are suitable varieties, also Keen's Seedling and Sir Harry, when true.

Plants for starting later will be quite safe in their quarters outdoors plunged in ashes to the rims of the pots, and a light covering of dry fern or litter may be given in severe weather, allowing to remain until the plants are thawed after being hard frozen, otherwise remove in mild weather. If the plants are placed in frames the lights should be drawn off in mild weather, but in this and wet tilt the lights at the back of the frames so as to throw off the rains, yet let the plants have plenty of air. They cannot be kept too cool, and none should be allowed to suffer through want of water.

Vines.—*Earliest Forced in Pots.*—When the buds break the temperature will need to be increased to 60° at night in mild weather, and 55° when severe, gradually increasing it so as to have it 60° at night when the Vines are in leaf, and from 65° to 75° by day, with moderate ventilation. Sprinkle the floors and surfaces of borders or beds twice or thrice a day in clear weather, avoiding too damp or too dry an atmosphere. Afford liquid manure whenever moisture is required at the roots, always supplying it at the mean temperature of the house or that of the fermenting material about the pots. Disbudding must not be practised until the bunches show in the points of the shoots, as any extra growth goes towards increasing the activity of the roots.

House to Afford Ripe Fruit in May.—The structure for this purpose should be started without delay. A bed of leaves and litter in a state of fermentation placed on the floor of the house, turning a portion of it daily so as to supply ammonia to the atmosphere, saves fuel, and conduces to a good break by constantly giving off moisture and warmth. Outside borders should have the needful protection from cold rains and snow; a few inches thickness of dry leaves, and a little litter over them, answer where the Vines are planted inside, but where the border is all outside a covering of warm litter is preferable, two-thirds of leaves and one of stable litter affording a less violent heat than manure alone, also more lasting, adding fresh material as necessary. The inside border must be made thoroughly moist by applying water, or, in the case of weakly Vines, liquid manure, and never less than the mean temperature of the house. Avoid, however, making the soil very wet, for that hinders root formation, and tends to a soft growth. Start with a night temperature of 50° in severe weather, 55° in mild weather, and 65° by day, except the weather is cold, when 55° will be more suitable. This slow work is better than a high forcing heat, which induces a weak growth, and we do not advise these temperatures to be exceeded until the growth commences. Depress young canes to the horizontal line, or lower, to insure the regular breaking of the buds. Maintain a moist atmosphere by syringing occasionally, but avoid excessive moisture and keeping the rods dripping wet, which excites the production of aërial roots from the rods.

Midseason Houses.—The Vines should be pruned and at rest. If this has yet to be done lose no time in pruning, cleansing the house, dressing the Vines, removing the loose soil from the border, and supplying a top-dressing of fresh compost. Where the Grapes are partially cut the remainder may be removed with a good portion of wood attached, and if the stems are inserted in bottles of water the bunches will keep admirably in a dry room from which frost is excluded. Thus the Vines will be liberated for pruning and the house for cleansing, repairs, and painting. A long and complete rest invigorates Vines, and early pruning effects that better than anything else.

Late Houses.—Vines that have the foliage all off will only require fire heat to exclude frost, but there must not be anything like a moist, stagnant atmosphere, or the Grapes will speedily damp and decay. Leaky roofs are a chief cause of Grapes keeping badly, and wide laps are not much better, as the wind drives the water from them all over the upper side of the berries, causing them to spot and rot. Grapes cannot be kept under such circumstances, and the sooner they are cut and bottled the better. A temperature of 40° to 50° suffices for the thick-skinned Grapes. Muscats require a mean temperature of 50°. The air must be kept in motion by a gentle warmth in the pipes, and ventilation given whenever there is a chance of securing a change of air without danger of letting in more moisture than expelled.

Figs.—*Earliest Forced in Pots.*—To force Figs successfully the trees must be brought on gradually and not subjected to too much heat in the early stages. This is apt to occur with bottom heat, the heat above the pots exceeding 70°; then the trees and embryo fruit come on too rapidly, and often fall instead of setting. Until the leaves are unfolded the heat at the roots should not exceed 70° at the base of the pots, then it may be increased to 70° or 80°, giving an atmospheric temperature of 70° to 75°. The temperature of the house started at the beginning of the month should be increased gradually to 60° at night, 65° by day by artificial means, and 70° to 75° with sun and moderate ventilation, closing at 75°. In mild weather a "chink" of air should be admitted early in the day, or between 60° and 65°, always at the top of the house, so as to allow the pent-up moisture to escape and insure a change of air, to insure a circulation in the house. In cold weather the heat from the hot-water pipes will keep the atmosphere in motion and the moisture will be condensed on the glass, therefore ventilation is not then required. Be careful, however, not to bring on the growth too rapidly, especially in dull weather, as foliage produced under such conditions is not of stout texture, but large and thin, possessing little elaborating power, and very susceptible of external changes, often scorching and becoming infested with red spider. Afford water whenever necessary, always equal in temperature to the mean of the house or that of the fermenting material about the pots. Syringe the trees in the morning and early afternoon so as to have the foliage dry before nightfall, but avoid excessive moisture, damping the house only in dull weather and only when the paths and walls become dry.

THE FLOWER GARDEN.

Herbaceous Plants.—When the ground is fairly dry, and the weather mild, advantage may well be taken of a favourable time to lift, divide, and replant many of the stronger growing hardy occupants of the mixed or herbaceous borders as may need it. All in time become either too large for the site, or present a less healthy appearance, owing to having exhausted the stock of food contained in the soil. The first to become crowded and exhaust the soil are Phloxes, Delphiniums, Spiræas, Campanulas, Potentillas, Hemerocallis, Asters (Michaelmas Daisies), Pyrethrums, notably P. uliginosum, Heleniums, Chrysanthemums, Helianthuses (Sunflowers), and Anemone japonica. About every third year these pay well for lifting, dividing, and as many as are required replanted, either in their old stations, after some fresh soil and manure have been added, or, better still, in fresh quarters. When crowded and starved, the flowering season is frequently of short duration, especially if they have to pass through a hot dry summer; whereas, when freely divided and replanted in fresh rich soil, they are much less affected by drought, and in any case the quality of the flowers is superior. Plunging forks, and in some cases ordinary digging forks, are much the best for dividing strong clumps, and when replanting the divisions take good care to well bury and firmly fix the soil about the roots, without, however, unduly lowering the hearts of the plants. Less vigorous plants, and which are too numerous to name here, may well remain undisturbed for a much longer period, or say double the time of the strong growers, and these require to be more carefully handled.

Re-arranging Herbaceous Plants.—Not unfrequently old, and, it may be, somewhat neglected mixed borders, would be greatly improved by being re-arranged, and on the whole the present time is, weather permitting, as suitable as any for this important work. It is true they are more often taken in hand in the spring, but in most gardens there is then usually much other work to be attended to, and besides this also greatly interferes with the display made by early-flowering bulbous plants. Old clumps of the latter are in many instances now rooting freely, and at this stage of growth may be lifted, divided, and replanted without detriment to their flowering either during the next or following spring.

Supposing it is decided to re-model a border, the first proceeding should be to well scrape back the loose gravel on the walk near at hand (and such are very general), and on this set the clumps of plants and bulbs, according as these are carefully searched for and forked out of the ground. If the nights are somewhat frosty, or the weather unsettled, too great a length of border should not be broken up at one time, or not more than can be trenched and replanted in one day. In most cases double digging or bastard trenching only ought to be resorted to, abundance of half-decayed manure being mixed principally with the top spit. There is no necessity or wisdom in returning the plants to the borders in formal lines, the better plan being to plant them somewhat irregularly, due regard being paid to the respective heights of the species and varieties, care also being taken to well mix them so that the early flowering kinds may alternate with those much later in coming into flower. Nor is it advisable to plant very thickly, there being a considerable number of half-hardy plants that room should be found for in herbaceous or mixed borders. All, whether bulbous or otherwise, to be correctly labelled, the simplest and best kind of label being made from 1 foot lengths of sound Hazel rods, these being pointed at one end, and faced and painted white at the other. Mulch with manure or leaf soil after the border is planted.

Manuring and Mulching Borders.—The least that can be done to an herbaceous border is to thoroughly clean and mulch it at this time of

year. All tender plants, whether dead or not, ought to be removed, and the dead tops of the hardy occupants trimmed off, and these, with any weeds there may be, consigned to the rubbish heap for burning. The surface of the border may then be very lightly and carefully forked up, the greatest care being necessary where many bulbs are grown, after which a liberal dressing of partially decayed manure, with loam added if it can be spared, and also charred rubbish, or the contents of a "smother" generally should be applied. Old Mushroom-bed manure is good for the purpose, and so also is a heap of leaves and manure that may previously have done duty as a hotbed or Vegetable Marrow heap. This mulching will answer the double purpose of enriching the border, and also to a certain extent as a protector of the roots from severe frosts. Bulbous-rooted plants, if planted sufficiently deep, are, as a rule, quite hardy, but if within 2 inches of the surface they may well be protected with a mound of either ashes, cocoa-nut fibre refuse, or leaf soil.

A Selection of Hardy Flowering Plants.—There is an almost unlimited number of species and varieties of serviceable and beautiful plants suitable for filling mixed borders, and which may be purchased and planted at the present time, the only exception being where the pieces are too tiny to be trusted to the tender mercies of slugs and other enemies, including a careless gardener's feet. The following, arranged much in their order of flowering, would be found very satisfactory:—Leucoium vernum, Snowdrops, Crocuses, Chionodoxa Luciliæ, Narcissi and Daffodils in great variety, German Irises, Anemones appenina, sylvestris, and fulgens, Cheiranthus alpina, Polemonium Richardsoni, Ibericus gibraltarica, Alpine Auriculas, Primulas Sieboldi and vulgaris in variety, Dodecatheon Jeffreyanum and meadia, Gentiana acaulis, Aquilegia, hybrids of cœrulea, californica, and glandulosa, Anthericum liliago and liliastrum, Dielytra spectabilis, Campanulas glomerata and dahurica, double Pyrethrums, Centaureas montana and alba, Erigeron aurantiacus, Hemerocallis flava, Lupinus nootkaensis and polyphyllus, Ornithogalum umbellatum, Papaver bracteatum, Solomon's Seal, Trollius asiaticus, Verbascum phœniceum, Tradescantias virginica and alba, double Potentillas, double white Rocket, Geraniums armenum and ibericum, Erigerons speciosus and macranthus, Dianthus barbatus magnificus, hybrid Delphiniums, Asphodelus luteus and ramosus, Pæonies in variety, Spanish and English Irises, Veronica spicata, Spiræas aruncus, filipendula plena and venusta, Pentstemon barbatum, Œnothera speciosa, and Galega officinalis.

THE BEE-KEEPER.

Protection of Straw Skeps.

Bees invariably winter well in straw skeps if provided with abundance of stores, and precaution is taken in the autumn before they become saturated with moisture to provide protection from the weather. Although the moveable frame hive has made considerable headway in the provinces, there are still numerous bee-keepers throughout the country who keep their bees at all seasons in the homely straw skep.

In this district (South Yorkshire) one bee-keeper annually winters upwards of forty stocks in skeps. These in a favourable season increase at a rapid rate, but as the majority of them are in skeps about 18 inches in diameter on which crates of sections are worked, they do not swarm so often as those in the small skeps usually seen. The skeps are placed on a bee stand with a roof, but quite open at the front. They face due south, and the hives are placed on shelves one above the other. Bees situated as above do not require any further protection, as the hives are perfectly dry, and to my knowledge the bees in that apiary come out strong and healthy in the spring.

With straw skeps placed on stands in the open air some protection is necessary, otherwise the bees will suffer. How often one may observe a solitary skep in a cottage garden with only a piece of sacking on the top of the skep, with a tile or broken pot to throw off the moisture, and prevent the wind from blowing it away. I need not say that success cannot be expected from bees treated in this manner.

The best plan that has come under my notice is to make a hood with Wheat straw. This is done by taking sufficient straw to cover the skep, placing the ears evenly together, and holding them firmly with one hand whilst the short straws are combed out with the other. Fasten the straw tightly together with string or fine wire just beneath the ears, or about 6 inches from the top of the straws. The remainder of the operation is very simple. Open the bundle of straw in the middle and place it on the skep, so that the straw hangs evenly round it; place a hoop of iron or wood round the whole, so that it fits tightly round the middle of the hive, and the cover is complete. The ends of the straw hood should be neatly cut, so that they hang a few inches below the floor-board with the exception of the entrance to the hive, where a few straws may be removed so as not to cause an obstruction to the bees; the remaining straws should be drawn on each side of the alighting board so as to allow the moisture to escape. Hives treated in this manner have a very neat appearance, and have the advantage, when thatched with straw, of being warm and thoroughly rain proof.

Straw Skeps for Increase.

The advantage of keeping a few stocks of bees in straw skeps is acknowledged by the majority of bee-keepers who obtain the whole of their surplus from the modern system of bar-frame hives, these being usually worked on the swarming system, and during a favourable season they provide numerous swarms, which are utilised in a variety of ways by the bee keeper. Owing partly to the warmth of the straw hive, and being small in comparison with the moveable frame hive, the bees swarm much earlier. I have closely observed this fact for many years, with always the same result. Some seasons the difference is very marked. Last spring there was nearly a fortnight between the first swarm reported from a straw skep and the one from a frame hive.

Observant bee keepers usually take time by the forelock and provide extra space for the bees when required. Still there are many who leave their bees very much to chance, and so they are on the same level as regards early swarms as those in other hives. Bees when kept in straw skeps only for the swarms they produce are not often robbed of their natural stores, consequently they go into winter quarters with plenty of food in the best possible condition, and being in a warm straw skep they start with an advantage over those in a frame hive, which have been robbed and not supplied with a substitute until late in the autumn.

When feeding is left until late in the autumn, probably several weeks have elapsed since the surplus from the honey flow was taken from them. During that time breeding has been at a standstill, so they commence the winter severely handicapped in comparison with the bees in straw skeps.—An English Bee-keeper.

TRADE CATALOGUES RECEIVED.

Hogg & Wood, Coldstream.—*Nursery Stock.*
J. Peed & Sons, West Norwood.—*Seed Catalogue.*
Sutton & Sons, Reading.—*Amateur's Guide to Horticulture.*

TO CORRESPONDENTS

All correspondence relating to editorial matters should, until further notice, be directed to "The Editor," **8. Rose Hill Road, Wandsworth, London, S.W.**, and **NOT** to Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Chrysanthemum Madame Carnot Sporting (*Henri*).—We already have a primrose coloured Madame Carnot (Mrs. W. Mease), and a yellow one (G. J. Warren or Yellow Madame Carnot), both of which are excellent. As your sport shows no particular merit, we do not consider it worth saving.

Bleaching Pampas Grass (*J. C. R.*).—Cut the plumes with a good length of stem when quite dry and before the plumes are quite clear of the sheaths, placing them in a greenhouse or other place where they will be dry, in a similar position as grown, or upright. In ten days or a fortnight they should have the leaves or grass removed and given a gentle shake; they will then open out, and have the beautiful feathery appearance for which they are so much admired. Plumes dried in this manner retain their beauty for at least twelve months, indeed we have had them attractive still longer. When the sheaths are removed as soon as they show signs of splitting, the plumes are whiter than when left to force off their covering in a natural manner.

Scale on Peach Trees (*A B.*).—The proper strength at which to apply Gishurst compound is given with the preparation, it being important that the instructions be carefully followed in all cases, and the responsibility for the application rest with the vendor and user. The recipe given to "H. G." in last week's issue of the Journal answers for destroying brown scale, but you must dilute to 1 gallon, which you omit in the quotation.

Plants for Windows (*W. B.*).—For an ordinary window few plants do better than the different varieties of Show, Zonal, and other Pelargoniums, with Fuchsias, Petunias, Heliotropes, Mimuluses, and other flowering plants the grower may prefer. Indeed, no one can give any definite selection unless aware of your taste in the matter, it being usual for the individual to express this, or, better, make selections at a nursery or florists'.

Cutting Down Raspberry Canes (*E. B., Dorset*).—If the newly planted canes were short jointed and well rooted, we do not apprehend they will suffer through having been cut down now; but large, hollow canes, which are the worst for planting, might be injured if severe frost followed a term of wet weather. Leaflets, giving the life history and means of combating various insects, are issued gratuitously by the Secretary of the Agricultural Department, Board of Trade, Whitehall, S.W. The cost of binding half-yearly volumes of the *Journal of Horticulture* is 3s. 6d. each.

Gas Tar on Hot-water Pipes (*Coal Tar*).—The only effectual remedy is to remove the pipes and burn the gas tar off them over a red hot wood or other fire. Some good might be done by wrapping cloths dipped in caustic potash about the pipes, and when the tar has softened scrape and remove with hot water. You may try it by dissolving pearlash in water and, mixing with lime, using the clear liquid by means of cloths. It will do some good, if not sufficient, but the better plan would be to remove the pipes and burn off the tar.

Photographing Leaves (*M. R. B.*).—Extremely pretty representations of Fern fronds, and all finely divided leaves, may be obtained in white on a blue ground by means of red prussiate of potash in the following way:—Make a fairly strong solution and paint it on white paper. When dry this paper is ready for use, and on exposure to light it turns blue. A change is effected by light, which produces a permanent blue; but the potash, unaffected by light, is still soluble, and is easily washed off the paper. From the above it will be easily seen how the representations may be produced. Take first a few sheets of paper to form a bed, then lay on the prepared paper, next the specimen, and last of all a sheet of glass to press the whole flat, and through which the light may shine. Sunlight is best, and in that case an exposure of ten minutes or a quarter of an hour is quite sufficient. All parts of the paper not covered by the specimen are now blue, and it remains only to wash out the potash from the paper where it is still unchanged from the protection of the specimen. The prepared paper must of course be kept in the dark before use. This is an easy process by which the outline of Fern fronds may be taken with the greatest precision. Many leaves do extremely well, such as those of Ouvirandra and Jatropha multifida. It is much the best if the specimens are dried before use. Red prussiate of potash, being poisonous, should be used with caution.

Names of Fruits.—*Notice.*—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. *In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing.* The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. *They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state.* (*D. W.*).—1, Newton Wonder; 2, Golden Noble; 3, Alfriston; 4, Unknown and worthless; 5, Beauty of Bath; 6, Court Pendu Plat. (*T. S.*).—1, Beurré Diel; 2, Pitmaston Duchess; 3, Easter Beurré. (*O. A. R.*).—1, D'Arcy Spice; 2, Flower of Kent; 3, Bramley's Seedling. (*B. M.*).—1, Josephine de Malines; 2, Comte de Lamy; 3, Bergamotte Esperen; 4, Braddick's Nonpareil; 5, Northern Greening. (*H. D.*).—The larger Pear is Winter Bon Chrêtien, the smaller one Winter Nelis; the Apple is probably a local seedling, and is not worth growing.

Names of Plants.—We only undertake to name *species* of plants, not varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*A. F. D.*).—The Caladiums that you sent are all florists' varieties, which can only be named by comparison. If you read the rules to correspondents you will find we undertake to name species only. (*A. W. P.*).—1, Woodwardia radicans; 2, Gymnogramma sulphurea; 3, Davallia canariensis. (*C. G. M.*).—1, A very poor form of Cypripedium insigne; 2, Epidendrum fragrans; 3, dead. (*B. J.*).—1, Luculia gratissima; 2, Eucharis grandiflora; 3, Todea intermedia; 4, Pteris longifolia. (*N. W.*).—Through being in the post over Sunday your specimens were quite dead on arrival here. Send fresh ones, and we will endeavour to assist you. (*W. F. M.*).—The specimen is either the typical Iris fœtidissima or a form of it. (*R. C. W.*).—All the specimens are varieties of Cattleya labiata, which can only be named by comparison in a large collection such as Veitch's.

COVENT GARDEN MARKET.—Dec. 15th.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	1 6	to 4 0	Grapes, lb....	0 8	to 2 0
Cobs	22 6	24 0	Lemons, case	11 0	14 0
Filberts, 100 lbs.	0 0	0 0	St. Michael's Pines, each	2 6	5 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, ½ sieve	0 0	0 0	Onions, bushel	3 6	4 0
Beet, Red, doz.	1 0	0 0	Parsley, doz. buchs.... ...	2 0	3 0
Carrots, bunch	0 3	0 4	Parsnips, doz.	1 0	0 0
Cauliflowers, doz.	2 0	3 0	Potatoes, cwt.	2 0	4 0
Celery, bundle	1 0	0 0	Salsafy, bundle...	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Seakale, basket	1 6	1 9
Cucumbers	0 4	0 8	Scorzonera, bundle	1 6	0 0
Endive, doz.	1 3	1 6	Shallots, lb.	0 3	0 4
Herbs, bunch	0 3	0 0	Spinach, pad	0 0	0 0
Leeks, bunch	0 2	0 0	Sprouts, ½ sieve...	1 6	1 9
Lettuce, doz.	1 3	0 0	Tomatoes, lb.	0 4	0 0
Mushrooms, lb.	0 6	0 8	Turnips, bunch	0 3	0 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6 0	to 36 0	Ferns, var., doz.	4 0	to 18 0
Aspidistra, doz.	18 0	36 0	Ferns, small, 100	4 0	8 0
Aspidistra, specimen ...	5 0	10 6	Ficus elastica, each... ...	1 0	7 0
Chrysanthemums, doz. ...	4 0	9 0	Foliage plants, var., each	1 0	5 0
,, ,, single plants	1 6	2 0	Lilium Harrisi, doz.... ...	12 0	18 0
Cyclamen, per dozen ...	12 0	18 0	Lycopodiums, doz.	3 0	4 0
Dracæna, var., doz.... ...	12 0	30 0	Marguerite Daisy, doz. ...	4 0	9 0
Dracæna viridis, doz. ...	9 0	18 0	Myrtles, doz.	6 0	9 0
Euonymus, var., doz. ...	6 0	18 0	Palms, in var., each... ...	1 0	15 0
Evergreeens, var., doz ...	4 0	18 0	,, specimens	21 0	63 0
Erica hyemalis, per doz.	9 0	15 0	Pelargoniums, scarlet, doz.	4 0	6 0
,, gracilis, per doz. ...	6 0	9 0	Tulips, various, doz. bulbs	0 9	1 6
,, various, per doz. ...	8 0	12 0			

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms ...	4 0	to 6 0	Mignonette, doz. bnchs. ...	2 0	to 4 0
Asparagus Fern, bunch ...	1 0	2 6	Mimosa or Acacia, bunch (French)	0 9	1 0
Bouvardias, bunch	0 6	0 8	Narciss, white (French) dozen bunches	1 0	2 6
Carnations, 12 blooms ...	1 0	3 0	Orchids, var., doz. blooms	1 6	12 0
Chrysanthemums, 12 bnchs.	2 0	6 0	Pelargoniums, doz. bnchs.	4 0	6 0
,, ,, 12 blooms	1 0	4 0	Roses (indoor), doz.... ...	0 6	1 0
Eucharis, doz.	4 0	6 0	,, Tea, white, doz. ...	1 0	2 0
Gardenias, doz.	3 0	6 0	,, Yellow, doz. (Perles)	1 6	4 0
Geranium, scarlet, doz. bnchs.	6 0	9 0	,, Safrano (English) doz.	1 0	2 0
Hyacinths (Roman) dozen bunches	6 0	9 0	,, ,, (French) per doz.	0 6	1 0
Lilac (French), bunch ...	3 0	5 0	,, ,, ,, per 100...	5 0	7 0
Lilium longiflorum, 12 blooms	4 0	6 0	,, Pink, doz.	1 0	2 6
Lily of the Valley, 12 sprays	1 0	2 0	Smilax, bunch	1 6	2 6
Marguerites, doz. bnchs....	2 0	3 0	Tuberoses, 12 blooms ...	0 3	0 4
Maidenhair Fern, doz. bnchs.	4 0	8 0	Tulips, doz. blooms	1 0	1 6
			Violets, doz. bnchs.	1 6	2 0
			,, Parme (French), bunch...	2 6	3 6

NOT WHAT THEY SEEM.

How easily is the sentence written, how wide is the application, and how true it is. How is it that so many of us have two sides? A fair pleasant side to the world; a fretful, anxious, capricious one in the family circle. And if we find this variation in ourselves, how much more we find it in many commercial transactions.

Mind, do not mistake us, there are many excellent men engaged in commerce who would scorn to defraud by word or deed. It is only, we hope, of the few we now speak; but alas! as evil deeds are always more prominent than good, these things of darkness come to the fore and throw shame, not only on their perpetrators, but on whole classes and communities.

One body of men have borne reproach from time immemorial,

possibly in many cases deserved, in many others not at all. It has been said that let an honest man try his hand at horse dealing he inevitably swerves from the path of rectitude. Ever since Moses Primrose went with the family horse to the fair there have been both sharpers and dupes—the one the result of the other. Every man thinks he can carve, poke a fire, and drive a gig, and most men talk very knowingly about a horse. Depend upon it these very knowing men make knaves. Who can resist to "do" a conceited would-be horsey man? You cannot be both seller and buyer too, and the opportunity is too fine to be lost. So much for poor human nature.

If a would-be buyer could only be persuaded to place himself in the hands of a respectable man who really knows the points of a horse, horse dealing would cease to bear the reproach of roguery, because the rogue would have no chance against an honest man who knew his business. So many amateurs like to do a deal. They get their fingers bitten, and then, like the prophet of old, declare "all men are liars." We prefer to say that all men are not what they seem.

Horse dealing, with its snares, affects the few rather than the many. It is with everyday matters that we would deal. We have a free breakfast table, but on that breakfast table things are often far from what they seem, and it appears to us that the British trader is beset with foes before and behind. We suppress names, but these facts are taken from a London daily paper, and they speak for themselves.

At one of the suburban courts four tradesmen, late in this last September, were summoned for selling as English, Canadian and American hams. One case appears to us very bad, where an American ham was labelled "Bath" simply because it had been imported by a person living in that town. If that were not with an intent to defraud, we are sadly mistaken. Then again, it appears that American hams are usually cut quite differently from English or Scotch, but in this case these hams had been fashioned on the English model—perhaps unintentionally; who knows?

It appears there is a society called the Bacon Curers' Association of Great Britain and Ireland, and it was at the instance of this society these prosecutions were made. A substantial fine was inflicted, and the case appeared at full in the London dailies, possibly this being the greater punishment of the two. Do we always get fresh country butter even when we pay the fresh butter price? It is very much to be feared that other fats rather than that of milk figure in our pretty butter dishes. If we can only afford margarine, well and good; but if our purses allow of a little more expenditure it is as well to see we get the genuine article. And, indeed, we may have butter fresh from the farm in a far from pure state. Only this week did we meet with such. Nice to look at, but on close acquaintance revealing a quantity of buttermilk, which ought to have been entirely removed. In these days of dairy classes this is an unpardonable offence.

Then, too, although butter may be quite free from buttermilk, there may be a much larger per-centage of water than is desirable. Butter should be perfectly dry, and this is quite attainable with proper management. Butter-workers (we are alluding to the small ones worked by hand) are so reasonable that no dairy should be without one. They are kept in all sizes, to suit all purses.

There has been much said about the adulteration of milk, and great discussions as to what should be taken as the standard value—*i.e.*, the per-centages of fatty matter and solids. Now there is a difficulty here; cows vary in their milk value in many ways. Some breeds are infinitely more valuable as milk producers in quantity; others again produce the quality.

An old cow, or a cow that has been calved some time, gives, as a rule, poorer milk than a young freshly calved one. Then, again, both will vary accordingly as they are fed; and some owners understand the art of feeding far better than others.

The time has come, however, when some sort of a general rule must be laid down, and men well up in the subject suggest that 12 per cent. of total solids and 3 per cent. of fatty matter would be a fair thing for both seller and buyer. Milk certainly is not adulterated to the extent it was some years ago—that is, adulterated with extraneous matter; but there is still great room for improvement of what we may call natural milk. If people really prefer frozen New Zealand mutton to well-fed Southdown, we say let them have it; but at any rate they should know what they are buying, or they might be buying English, and how the imported meat is to be recognised easily by the average housewife is still an open question.

The Earl of Londesborough has spoken strongly on the necessity of branding imported horses. We see "Made in Germany" on many of our dry goods; why not carry out the same idea with regard to live stock? On the question of feeding stuffs and manures we have written before. We have safeguards now of which our fathers knew nothing. It is simply our own fault if we allow our cattle to be poisoned, or our fields and pockets impoverished by purchasing harmful cakes or meal or manures, whose only property is their fearful smell.

[Our correspondent has not come to eggs; when he does he will perhaps give a gentle intimation of the advantage to some of the "Continentals" of a trip into the country—going out at 24 a shilling, and coming back to London as "fresh laid" at 2d. a-piece. "It's a queer world, my masters, and things *are* not always what they seem."]

WORK ON THE HOME FARM.

We are now enjoying the first slack time since harvest, and can attend to the numerous little odds and ends of work that may, without loss, have been deferred to this more convenient season.

Autumn fallow, after receiving a good cleaning, has been waiting for the plough; meanwhile the mild autumn has encouraged the growth of weeds, which will now be destroyed and buried by the plough to enrich the land rather than impoverish it.

The recent heavy rains have been very welcome, not only to reinforce the failing springs, but for their consolidating influence on the young Wheat. For this latter we have fears, and not without reason. Never has the wireworm been noticed in such numbers as this autumn, and already we see complaints of its ravages recorded in the agricultural papers. Rape dust to act as food for the grubs in place of the young Wheat or thorough consolidation by rolling and weather are the only antidotes of which we know.

Farmers who took full advantage of the dry autumn to thoroughly cleanse their watercourses must look now with great satisfaction on the excellent outlet afforded for each rushing stream, and we have ground for hope that the numerous small outbreaks of diphtheria and typhoid fever which have created such alarm in almost every country-side will cease now that the village streams and becks have had such a thorough flushing.

With more rain and freshened springs, wet spots requiring drainage will bring themselves into notice by their glassy appearance and boggy nature when we walk across them. Where land has already been well drained, this often only means the blocking up of some particular branch. This should be attended to at once, as a block at one place may soon cause a breach higher up, and consequently a fresh blockage. The original break may have been caused by the drain having been laid too near the surface. In loose soils this may be easily done, and the drains should be put well out of the reach of pressure. On very strong land, however, if the drains are put very deep they may be of little use, as the surface water could not find its way to them.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Long. 0° 8′ 0″ W.; Altitude 111 feet.

DATE.		9 A.M.					IN THE DAY.				
1897. December.		Barometer at 32°, and Sea Level.	Hygrometer.		Direction of Wind.	Temp of soil at 1 foot.	Shade Temperature.		Radiation Temperature.		Rain.
			Dry.	Wet.			Max.	Min.	In Sun.	On Grass.	
		Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Inchs.
Sunday	5	30·241	37·8	34·9	S.	38·2	42·1	2[illegible]·8	42·4	30·4	0·0 8
Monday	6	30·031	41·4	41·0	S.	39·1	46·3	37·7	46·9	36·0	0·053
Tuesday	7	30·14	39·6	37·8	S.W.	3 ·9	53·9	35·9	53·1	29·1	0·641
Wednesday .	8	29·410	43·6	41·3	N.W.	42·8	44·1	4[illegible]·3	64·4	36·2	0 021
Thursday....	9	29·296	38·6	36·1	W.	40·9	44·4	36·4	64·2	30·9	—
Friday	10	29·509	39·1	37·1	S.	39·4	48·3	33·2	48·1	28·2	0·183
Saturday ..	11	29·376	44·7	41·5	N.W.	41·1	48·2	38·9	65·5	36·1	—
		29·728	40·7	38·5		40·2	46·8	36·0	54·9	32·4	0·176

REMARKS.

5th. Overcast all day, and damp at times.

6th.—Drizzle early; frequent rain from about 8 a.m. to 3 p.m.; fair evening.

7th. Fine, with faint sun at times till 2 p.m; then rainy, and steady rain from 5 p.m. and gale at night.

8th.—Steady rain till 6 a.m and showers till 8 a.m.; sunny almost throughout, but a smart hail shower lasting fifteen minutes from 1.5 p.m.; clear night.

9th.—Bright sunshine most of the day, but cloudy at times in afternoon; clear night.

10th.—Dull early; almost continuous rain from 10.30 a.m. to 3.30 p.m., frequently bright after.

11th.—Bright sunshine till 1 30 p m.; dull afternoon; bright night.

Temperature near the average, rainfall at last above it.—G. J. SYMONS.

FOR GARDENING LAND AND GARDENERS

Journal of Horticulture.

THURSDAY, DECEMBER 23, 1897.

THE JOURNAL OF HORTICULTURE *can be obtained from the Office,* 171, *Fleet St., London, post free for a Quarter,* 3/9. **Editorial communications must be addressed to 8, Rose Hill Rd., Wandsworth, S.W.**

CHRISTMAS THOUGHTS AND WISHES.

WHEN these lines appear in print the grand old season of Christmas will be close upon us—a time when old and young alike shake off, as best they can, the cares of daily life, and join each other in such mirth as inclination or surrounding circumstances allow. Friends and relatives from far and near will gather once more around the festive board to enjoy the good things of the world, to crack their jokes, to talk of days that are gone, of plans and prospects for the future, and in some cases to note with sadness the "vacant chair," which will ne'er again be filled with the old familiar face and form.

Gardeners are a social class, and enjoy as well as any the pleasures we all look for at Christmastide, and when a few "choice spirits"—who practise the "gentle art"—happen to meet in a promiscuous way, for hearty greetings and harmless joviality, I would fearlessly pit them against the "best" that any other calling can produce. Gardeners in responsible positions are not as a rule given to wandering far for the sake of mere pleasure; their work may in a sense be said to occupy their whole life, inasmuch as their thoughts are seldom separated from it for any length of time. We all know it has become a proverb that a gardener's idea of a holiday is to go and see the garden of some brother of the craft—as long as it entails a fair amount of travelling. In truth, there are many reasons why a gardener should never be happier than when in a garden; at the same time it is good for all to sometimes have a change, if only to help them to appreciate more fully the pleasures of their home life when they return to it.

The competition of modern times has been felt by gardeners as much as by any class, and there can be no doubt that it becomes each year more and more a matter of the "survival of the fittest," which shows the absolute necessity of being well equipped with a sound technical as well as practical knowledge. The great facilities for obtaining such knowledge at the present time are so pronounced, that no one can be excused for not taking advantage of them. The various horticultural journals each week supply a mass of information, which deals

with both the practical and scientific part of gardening. If these are carefully read, and their teachings acted upon by all who read them, the sum total of improved results must be inealculable. We have in addition, however, a splendid reserve of literature to draw upon, as numerous works dealing with every phase of gardening—as well as the sciences which bear upon it—can be obtained at a marvellously cheap rate. Towns, both large and small, and even villages, have their institutes, in which popular lectures are given during the winter evenings by scientists of varying degrees of eminence, who are each striving, in their own sphere, to help forward the grand progress of the Anglo-Saxon race. Although we may have allowed continental nations to obtain a good start in the matter of technical education, there are signs on every hand which show the "British Lion" is at last aroused, and is working in earnest. A knowledge that such is the case—that we are on the right road—ought to enable us all to enter with zest into the "joys of Christmastide."

Young men who are on the threshold of a life which may become prosperous or otherwise, in proportion as they utilise or neglect their opportunities, should sometimes ask themselves the significant question, Are we doing our very best under present circumstanees? It is necessary for us all to sometimes bestir ourselves to renewed action, for at times there comes to all human beings a great inclination to "take things easy," though fortunately this is combated in the average Briton by a spirit of restless energy. Gardeners as a body can, I think, lay claim to possessing this latter element in a large degree, and the amount of work the "smart young men" will accomplish in a single day during the busiest seasons is sometimes quite as marvellous in its way as some of the much-vaunted athletic feats. I doubt not that many young gardeners who read these lines will remember instances of rivalry in which the "bothyites" have each been doing their utmost to surpass the others in the accomplishment of some great task, and when this spirit of rivalry is conducted in the right way it expedites the progress of work and makes it a real pleasure.

Gardeners, both old and young—especially the young—will, however, at this festive season be looking forward to pleasures of other kinds, those which spring from the meetings of friends and relatives as they meet in the social circle. Holidays cannot be showered very plentifully among the workers in gardens, because of the nature of their work; but Christmas is perhaps one season, when by combined effort and management some may receive short holidays to visit the homes and join in the general reunion, which is looked forward to with so much zest by friends and relatives who throughout the year are scattered abroad in the land. In many places, again, Christmas is one of the busiest seasons of the year, as house parties, with their attendant gaieties, are the order of the day. There is little chance in such for the young gardeners to pack up their traps and "hie" for home; they must instead be content to work both early and late in attending to the duties connected with large establishments, so as to have the houses and gardens in good condition for the visitors to admire, and in carrying out the necessary plant and floral decorations.

Notwithstanding these drawbacks, young gardeners have a very happy knack of catching as much enjoyment as circumstanees permit; they can adapt themselves to varying conditions. I retain a vivid recollection of many joyous Christmas days spent far from home, when the "bothyites" were not allowed to wear out the time in lonely solitude, but, according to a good old custom, invited to spend their evening at the "Castle." The unfortunate one "on duty" in such cases often received a visit from one or other of his comrades during the course of the evening, to prevent him from feeling unbearably lonely; but the turn of duty on Christmas Day was usually borne with philosophical fortitude, and I actually knew one who quite gloried in having the place "all to himself" for once.

To gardeners old and young, at home or abroad, let the cheery words be recorded in the Journal once more—

A Happy Christmas.

—Onward.

SHOWING AND JUDGING GRAPES.

Perhaps I may be allowed to contribute a short letter on the subject of fruit showing and judging, particularly Grapes. Of all garden produce I think these at autumn shows are the most unsatisfactory fruits to deal with according to present schedule arrangements, both for exhibitors and judges. Take, for instance, the usual wording of the smaller classes—"Four bunches of Grapes, two white and two black allowed"—what is there here in this assertion to guide the exhibitor? He does not know whether to enter for flavour or appearance. Neither can the judges obtain any assistance from the words above cited to guide them in their action, and very often their decisions are unsatisfactory to the public and to themselves. If handsome bunches, irrespective of flavour, are awarded first honours, uncomplimentary words have to be heard by the judges from some Grape connoisseur who may be criticising their awards.

If perchance the awards are given in favour of flavour, what an outcry is sometimes heard from the public, and general disatisfaction seems to permeate the whole place. Very few judges dare ignore size and appearance in a bunch of Grapes. I think all this perplexity and discontent might be avoided if schedule makers would be more explicit in the wording of the classes.

For example and argument's sake we will say a class reads thus:—"A collection of ripe dessert fruit, eight distinct kinds, two varieties of Grapes allowed, three black and three white." This is explicit as far as it goes, but would it not be infinitely more satisfactory and more to the point if some qualifying sentence were added? something like the following:—"The judges, in making their awards, are to be guided by the most perfect examples of well finished fruits." By some such wording the exhibitor would know he must produce his best looking bunches of Grapes and the finest of his other kinds, irrespective of flavour, and the judges would know they had to give their decisions from appearances only. And might not all collections of fruit be similarly dealt with?

We will now take another class exclusively for Grapes. It reads thus:—"Six bunches of Grapes, two bunches each of three varieties. To be judged by flavour, combined with perfect examples of their respective varieties." By "perfect" examples I mean that the bunches should be of average, or rather above average, size, also of good shape, well set with full sized evenly thinned berries, good colour, and a dense bloom, according to the variety. By some such wording as the above it would be shown that flavour must have the first consideration. Similar wording could be applied to a four-bunch and a two bunch class.

No Grapes equal the Frontignans in flavour, and one of my reasons for advocating flavour classes is to give those varieties a chance in competition, as this might perhaps be the means of bringing them into prominence, so that they might again find their rightful place on the tables of the wealthy. I am fully persuaded there are many owners of gardens who are wholly unacquainted with those varieties, and it is to be regretted that those gardeners who are allowed to select the varieties of fruit for their employers' tables do not introduce a few of those high-class Grapes where suitable structures exist for their growth. I know that some of the best flavoured Grapes are not easy to produce in high-class condition, but I believe the difficulties are not insurmountable, as witness Madresfield Court.

I have not one word to say against those noble looking Grapes we are so familiar with at autumn shows; they are indispensable for late supplies, and after the turn of the year their flavour becomes quite first-class, also their good keeping qualities so prolong the supply that very early forcing is not now so necessary as formerly; but my contention is that "flavour" should be the first consideration in dessert fruits, and for autumn supplies highly flavoured Grapes should be more extensively grown. I would like to hear what others have to say on this subject.—J. Easter, *Nostell Gardens.*

[We have seen many classes in which Grapes were judged by "flavour" alone, "culture" not being mentioned as a point of merit. Generally the prizewinning exhibits have been so poor in appearance as to impress those visitors who might be unacquainted with the varieties with the idea that such miserable looking Grapes had better be left severely alone. Mr. Easter is aware of this, and wishes to provide against it. His suggested class might perhaps read better in some such form as this:—"To be judged by flavour combined with distinct cultural merit of the respective varieties." There are no degrees in perfection. It will be advantageous to hear "what others say" on the whole question.]

BRUSSELS SPROUTS.

Few vegetables excel Brussels Sprouts in delicious flavour and tenderness at this season of the year. The solid, ball-like sprouts are freely produced on well-grown plants. The larger the plants, as a rule, the finer the sprouts, and the longer the season during which the crop is available.

No kitchen garden crop pays better for superior culture, but the plants must have a long season of growth. Therefore, when plants are raised early and good culture follows in a suitable position the crop will be abundant and satisfactory.

The majority of those who cultivate Brussels Sprouts give their best attention to raising and cultivating this vegetable, so as to afford a supply of fine, solid sprouts, from November to April. This is the time when they are most in demand, though up to Christmas the autumn Cauliflowers and Broccolis compete with the Brussels Sprout, but that is no great disadvantage. Brussels Sprouts are very hardy, and keep well on the plants.

February is a suitable period for commencing operations in sowing and raising. If a frame cannot be spared sow in boxes placed in gentle heat. More sturdy plants, however, can be obtained from sowing on a bed of light soil formed near the glass in a cold frame. Introduce old potting soil, having it of a moist character, and make it firm and smooth on the surface. Give a gentle watering with a fine-rosed can, then sow the seeds thinly. It is better to take time in doing this than to have to draw out the small seedlings after germination, the operation often damaging those left. Cover the seeds one-eighth of an inch with fine soil, pressing it flat and firm. The bed may be darkened until the seeds germinate and the young plumule pushes its way through the soil to the light which they must then have free access to. The advantage of plenty of room for each seedling will now be apparent. Air must be freely admitted on every favourable occasion. Weakening the seedlings by confined treatment is as bad as thick sowing. As they advance and become stronger there will be brief periods when full exposure may be ventured upon. When the seedlings reach the stage of rough leaves they may be transplanted into a bed of rich soil formed in a sheltered but open situation. Place them 4 to 6 inches apart in a careful manner, seeing that the roots are not huddled together and are placed rather lower than previously.

From this time the plants will have every opportunity of strengthening their tissues and forming abundant fibrous roots, so that when the final planting period arrives they may be lifted and planted without any fear of severe checks.

While the plants are accumulating strength the ground intended for their reception must be prepared. The position should be an open one, and the soil of medium texture. A light sandy soil does not possess the requisite firmness, and is likely to be deficient in moisture at a period when the plants need it. Such soil must be freely manured with well-decayed farmyard manure, so as to add to the humic matter in the soil and assist in conserving moisture. Medium fertile soils also need a liberal manuring, and to be cultivated to a depth of 2 feet. The nature of the subsoil must determine whether a portion of it may or may not be mixed with the surface soil. When the former is very poor it is better to break it up well and liberally manure it in its original position rather than bring it to the surface. Heavy clayey soil can be brought into good condition by trenching, liming, and leaving the surface rough for frost to act upon. Such soil should be prepared at once and again before planting. It may not be possible, however, to bring it to the most desirable condition in a few months' treatment, but it will be much improved.

Planting may take place in May, or not later than the first week in June. Many growers are very anxious to plant when the soil is moist, and will risk the dirt and discomfort of tramping about on wet ground in order to plant. In my opinion this is a mistake. It is much more comfortable to plant in dry weather, and better for the soil. Draw a garden line across the plot to be planted, and with a spade take out a trench, place the plants at the required distance apart, cover the roots with a little soil, firm it, and apply water; then fill in with dry soil. This method takes up a little more time, but it serves to effectually establish the plants, for very seldom is more water applied artificially required. The plants do not flag, or at least not seriously, and they are ready to take advantage of the first showers.

The rows should be 2½ to 3 feet apart, and the plants 2 feet asunder. There is room then for the cultural operations, which include hoeing for destroying weeds and keeping the surface open to promote growth and prevent evaporation of moisture from the soil in dry weather. During growth two dressings of nitrate of soda may be applied at the rate of 1 lb. per rod each dressing. Scatter it evenly on the surface and hoe it in.

One of the best varieties of Brussels Sprouts is undoubtedly Sutton's Matchless. They can be easily grown 3 to 4 feet high, furnished with compact sprouts from top to bottom. The variety Aigburth also produces very large sprouts, and is well worthy of cultivation.—E. D. S.

EARLY STRUGGLES FOR KNOWLEDGE.

Education is so absolutely essential to every man at the present time, whatever his station in life may be, that strenuous efforts should be made to acquire it at any cost. For this reason the following account of a worker's struggles to gain knowledge in the face of many difficulties, and without the aid of friends, station, or means, may serve as an encouragement to persevering young men who are striving to improve themselves. The writer cannot be accused of egotism, or seeking for the applause of readers, because, except to the Editor of the Journal, his identity will be known to very few, but it would be idle to pretend that the record is not a source of self-satisfaction. Work of all kinds thoughfully undertaken, carefully, thoroughly, and perseveringly carried out, always yields this inward gratification. For the inclination for study I can take no credit, as this and other qualities were inherited; but mental capacity is improved by sustained application, and the development of the mind is an ample return for all labour in that direction.

Circumstances, which need not be entered upon here, compelled me at the age of twelve to commence working in a garden when a very brief period at school had merely furnished the rudiments of knowledge. It was enough, however, to indicate how much there was to learn if I wished to obtain and hold with credit an ordinary station in life. Beyond this I felt an insatiable desire to understand somewhat of the world and the life it supports, and to learn something of what the skill of man had accomplished in the past, or was performing in the current work of the age. Being left entirely to myself in the choice of my studies, these covered a much wider range of subjects than would probably have been selected for me, nor would I advise others to follow precisely in the same steps; each must choose for himself. What a lad or a man takes a deep interest in he will learn readily, but forced studies of any kind are useless, and troublesome alike to the learner and teacher.

It is wise to confine one's efforts to one or a few channels, and it has been well said that a man should know "something of everything, and everything of something." There should be a special subject to be exhaustively studied, but besides that every man requires a general knowledge, and it is surprising at times how usefully some things learnt in youth may be applied in after life. Certainly on three great occasions in my experience, totally different in their nature and requirements, special knowledge which I gained in my early days has enabled me to perform important duties, to the satisfaction of employers and the credit of their servant.

Perhaps I was ambitious as a lad. I did not then think of devoting my life to horticulture; I hoped to fit myself for a post as assistant to a scientific gentleman, or as a librarian, and for a considerable time this object was steadily kept in view, but further experience gradually developed a love of horticulture in all its departments, which effectually determined my path in life.

The first consideration in the commencement of my studies was the purchase of books, and here I was confronted by a great difficulty; my weekly pay was very small, and with the most rigorous economy I could only afford a few pence every week for anything outside the necessities of life. Being situated within three or four miles of a large city, however, conferred one advantage, and that was, it enabled me to visit the secondhand bookstalls, and thus frequently pick up useful books at a nominal price. For some years I made it an invariable rule to visit these stalls one evening a week, and sometimes twice; and in that way I bought nearly every book used in my studies, and besides acquired a familiarity with general literature. Though I was such a poor customer, some of the stallkeepers would let me search their whole stores, both in the shops and out, and many an hour have I thus spent on wet evenings. I have been a book lover and buyer ever since, and have spent pounds with dealers with whom my weekly expenditure in the early days did not exceed 2d. or 3d. It would be difficult to convey an idea of the pleasure experienced when some valued or long-sought-for treasure was thus obtained, and how eager I was to dive into its pages on my return home. Occasionally I have been weeks, or even months, searching for a particular book, and when this was needed to remove some difficulty which impeded my progress in any special subject, one of the troubles an unaided student with a slender purse has to encounter is revealed.

Second in order was the method adopted in my studies, with the time allotted to them. In regard to the hours at my disposal I had no advantages other than those of ordinary garden lads. We had a good master, a man of long experience, who thoroughly understood his business in every department; but energetic, active, and industrious himself, he expected the full complement of work from everyone under him. The working hours were 6 A.M. to 6 P.M. in the summer, and 7 to 5 in the winter, with occasional time in the evening to attend to ventilation or fires. By rising at 5 A.M., as I could easily do, I was enabled to have an hour before work in the summer, and two hours in the winter. On an average my dinner rarely occupied more than a

quarter of an hour each day, thus leaving three-quarters for my studies; and in the evenings I could always manage at least three hours on four days each week. With the addition of such time as I could devote to reading on Sundays this represents the portion of each week which was regularly devoted to learning for a period of seven years.

Recognising the prime importance of a thorough knowledge of my own language, I commenced with Lindley Murray's English Grammar and English Exercises, upon which I worked diligently for a considerable time. Then Dr. David Irving's Elements of English Composition and Dr. R. G. Lathom's History and Etymology of the English Language were obtained and studied carefully, both proving most useful aids, especially the former. Several interesting works by Dr. R. C. Trench on the Origin of Words were obtained, and that entitled The Study of Words was especially helpful. At this time also I procured an edition of Dr. Johnson's Dictionary, and taking 100 words or more each day to write out and study, I ultimately worked through the whole book. Finding, however, the necessity for some acquaintance with Latin and Greek for the due understanding of a large portion of the words in our language, I procured Dr. Peithman's Practical Latin Grammar, and following that, an interlinear literal translation of Virgil's Æneid, and to these, with some other classical works, I applied myself in translation and re-translation until I was familiar both with words and composition. Monteith's First Greek Course was next attacked, and with the aid of a lexicon and a Greek New Testament, I made some progress in that language as regards mastering words and their variations. Then came a study of French, Hamel's Universal French Grammar being the first book I had; but this was succeeded by several others and a series of Readers, as I was determined to acquire a knowledge that might be useful of a language to which I became much attached. I remember, in one of my bookstall hunts, picking up a quaint old work to practise on in translation—namely, Pitton de Tournefort's "Relation d'un Voyage du Levant," which contained many curious illustrations of plants, places, and people. The study of French was prolonged much later in my life, and has always afforded me a good deal of pleasure.—A Working Student.

(To be continued.)

HARMFUL AND HARMLESS GARDEN MOTHS—13.

Probably it is necessary to introduce the pug moths by name to most gardeners, because a knowledge of insects and their doings can exist without any acquaintance which tends to recognition of either genus or species. The moths themselves may not be very familiar, but one or other of the caterpillars is certain to make its presence manifest in all gardens containing a variety of plants and shrubs. Small creatures are not always pacific, the ants, for instance; but the pugs of the moth tribe have no pugnacity about them, and the point of the name would scarcely show itself to us when merely inspecting the moths alive or dead. A strong family likeness prevails amongst them, which makes the Eupithecia group very perplexing to the naturalist in identifying species, though the genus is soon ascertained. The moths are on the wing at dusk, seldom during the day, when they sit on fences or trunks of trees, the wings expanded and pressed closely to the object on which they rest. We have our attention drawn to some of the pugs by a conspicuous collar or belt, white, it may be red, but the general colour is some shade of brown. Mostly the four wings are ornamented with bars and lines forming a sort of pattern extending over all of them, only the markings on the hind wings are paler and less distinct.

Arriving at the caterpillars we find a clue to the name, which seems to have been suggested by the short, stumpy aspect of many, but they vary both in form and colour. Though of diminutive size, they are, as a family, certainly to be ranked amongst tree and plant disfigurers. Of course some are not found in gardens, or they are harmless, and the troublesome ones seldom occur numerously. Leaves suit the appetite of only a few; most either revel on flowers, devouring petals, stamens and pistils, while partially concealed, or they pierce into capsules and pods, subsisting upon the seeds. Being, then, entirely hidden, they are difficult to discover; sometimes they form cocoons within the fruit in which they have fed up. But the majority of them come down to the earth when ready to change, and it is curious to see how very skilful they are in weaving fragments with silk, so that the cocoon, lying on the surface, looks like a small lump of soil. Hence they frequently escape enemies, not only birds and mice, but beetles and other insects, which regard the chrysalis of a pug as a choice morsel. Many of these chrysalids, small as they are, show bright and varied colours.

Now, since the useful is generally considered to be more important than the ornamental, I may speak first of the Eupithecias that, while caterpillars, reside in the flowers of Apples, Pears, and other fruit trees at times. Guence, who paid much attention to continental species which had the repute of being mischievous, afterwards came rather to the opinion of our great entomologist, Newman, that these caterpillars might not be very harmful in the usual way. Emerson somewhere tells us that Nature makes fifty poor Melons to one that is good, and Leigh Hunt, in verse, has dwelt upon her great prodigality:—

> "Too much grass and too much tree,
> Too much air and land and sea;
> Too much seed of fruit and flower,
> And fish, an unimagined dower."

Everyone who knows anything about vegetable life is well aware that of the profusion of flowers which cover our fruit trees in a favourable spring, the greater part seems to vanish somehow. Even of the fruits that are actually formed, a percentage has to drop, the vitality of the tree is not sufficient to mature them. Therefore such insects as the caterpillar of the green pug, the grub of the Apple weevil, and other flower-eating species may even act a useful part in thinning out the redundancy of blossoms. But there are certain birds, which Nature provides as a check upon the too rapid increase of such caterpillars, and our French cousins, so Guence thought, had been unwise in slaughtering these without discrimination, and rather cruelly too.

This brings us to notice, next, the above green pug, as Newman calls it (Eupithecia rectangulata); though in fact the moth is of several colours, specimens occasionally turn up which are dark brown or black. The Latin name is scarcely correct, for a mark upon the wings is indeed angular, but is not a *right* angle. We have in these islands but one annual brood, the caterpillars feeding part of April and May, the moth flying in June. This caterpillar is decidedly puggy, pale yellowish green, with a line down the back of a darker colour, and also a few short hairs; the whole body is transparent. It is an abundant species throughout Britain. Rarer and local is the pinion-spotted pug, E. consignata, which is on the wing earlier, and though found in Sussex, chiefly occurs in the Apple orchards of the Midlands. Sitting by day upon the trunks rather high up it escapes notice, being just the colour of the bark. It has been recommended to hunt these moths at the egg-laying, but catching them is a tedious operation. Killing the caterpillars when young has its difficulties too; various washes have been applied for this purpose, amongst them the poisonous ones made from Paris green and London purple, to which I have always considered there were objections. But there is no question about their destroying these and other insects, if it is worth while running certain risks which ensue.

Very common in gardens throughout England, Scotland, and Ireland is the lime speck, E. centaureata, which has, however, no connection with the Lime tree that I am aware of. We see them from May to August, resting on walls or fences, especially at early morning. Probably these moths emerge in succession. The caterpillar is also noticeable during two or three months towards autumn. It is slender, a little wrinkled, and varies much in colouring. The food is flowers, principally of the Composite order, that have compact heads; but they live also upon some Campanulas and Saxifragas. The common pug, E. vulgata, merits its name. Its abundance is quite accounted for by the plentifulness of its food plants, the Whitethorn and the White Willow, upon which it feeds in July. The moth flies in May. It is brownish, barred with black and white, the hind wings pale brown, and is sometimes seen hovering about flowers at dusk, or reposing during daylight. Gardens show us now and then specimens of the brindled pug, E. abbreviata, a spring species, for it comes forth in March or April; small as it is (like most of the pugs, the wings only expand about an inch), the ornamentation of them, which is expressed by the English name, reminds us of a colouring to be seen upon some cows and dogs, but which seems now to be uncommon. The caterpillar has been taken on Oak and other trees, feeding upon the leaves; it is yellowish red, faintly spotted.

The netted pug, or Eupithecia venosata, has the wings, which are grey, crossed by numerous black lines. It is one of the larger species, and occurs about gardens in May or June. Later, we find the stumpy, grey and white caterpillar, hidden within the capsules of Silene and Lychnis species, devouring the seeds. A beautiful, and rather smaller pug, is E. pulchellata. The caterpillars live in the flowers of the wild Foxglove and the garden varieties. They are yellowish or green, with a few white hairs, and during July they draw threads over the mouth of the corolla, and thus protected, eat the stamens and unripe seeds, finishing off upon the capsule, when they descend to form an earthen cell, where the chrysalis remains till May. Some caterpillars of the pug tribe feed upon all sorts of flowers, as, for example, that of the dull-hued grey pug, E. castigata, not uncommon in August and September, a slender caterpillar brown and tubercled, with a purple line on the back.

From a peculiar mark upon the wings, the V. pug, also E. coronata has its familiar name; there are two broods each season; the caterpillar is partial to the flowers of Clematis and Golden Rod. The latter plant has its special pug, E. virgaureata, which feeds in September. The chrysalis, if examined by a glass, shows a skull-like device, surrounded by a sort of border.—Entomologist.

A HAPPY FAMILY.

It would be difficult to imagine any assemblage more fully entitled to the above familiar designation than that of Mr. Sherwood and his merry men at the famous Holborn Restaurant last Saturday evening. A wonderful place would this centre of social and ceremonial festivities be regarded by some, even many, of our readers who live laborious, though happy, lives in the quiet solitudes of rural Nature. Let them fancy a crowd of people ascending massive marble staireases, flanked with glistening balustrades, then galleries leading to the right and left, and on each side of these galleries noble rooms. Let them imagine just one of those rooms, with its eight pendent "chandeliers," each with at least thirty "globes," through which shines with subdued brilliancy the electric light; and as if these were not enough for the dissipation of darkness, let them further imagine rows of branched candle "sticks," each with its seven illuminants, along the tables, and then let them again imagine at the least twenty of such rooms, with as many "parties" of not less than a hundred, and thus 2000 diners at the least entertained at one and the same time, and they will in some sense be able to appreciate the difference between a cottar's Saturday night in lonely happy Arcadia and social "life in London."

There is indeed a difference, but each gathering, of few or many, may be, and is, in instances innumerable, equally, purely and harmoniously enjoyable. It is a question of numbers. In this particular London room a table runs near one side and the whole of its length; some forty guests, with the Chairman, Mr. N. N. Sherwood, one of the finest commercial men in London in every way, in the centre. Cross tables extend to near the other side, with twenty rows of his merry men—some, even many, grown grey during their long, loyal, and honourable service in the great wholesale seed firm of Messrs. Hurst & Son; others of varied age, down to the boys just "starting life" from school. See Mr. Sherwood (fig. 86), the embodiment of this great firm, greet his respected guests, shake hands with every boy and every man when his hand can reach them, accompanied with a cheery word for each, and then you feel and know that the gathering is indeed a "happy family."

See, on the side of the room opposite the Chairman, a raised platform with its pianoforte, and note on the conclusion of the repast vocalists and instrumentalists rise from the crowd at the Chairman's call and discourse sweet music in joyous strains; then must you be assured that among this great band of workers are not a few who have, most worthily and well, cultivated with success the delightful art of making others feel that labour is not an irksome task to all, and does not deaden the susceptibilities of those whose services are appreciated.

Note the warmth of the reception that is accorded the founder of the feast as he rises to give to all a hearty welcome, and with innate courtesy thanks all who have honoured him with their presence. Observe the warm acceptance of the loyal toasts. Listen to the several speeches earnest, eloquent, humorous—in fact, all kinds but those which depress, that were elicited in carrying out the programme. From this—a full one—nothing appropriate seemed to have been forgotten, and everything that was said seemed to meet with enthusiastic response; but the two speeches that went home the most directly were those of the veteran, Mr. Hugh Aiton, in proposing the "Chairman," and Mr. Sherwood's in response. The former described his having watched the growth and wonderful expansion of not only the "House," with which he had been so long and pleasantly connected, but he had enjoyed the privilege of also watching with admiration the progress of its honoured head from youth to manhood—his attention to details till he "knew the ropes," his diligence, thoughtfulness, and charming disposition; and whose sons were also following, in all those respects, in the footsteps of their much-loved father and friend of all whom he had welcomed on the present festive occasion.

Then came the great ovation—ringing and prolonged cheers from many more than a hundred throats—while Mr. Cox was bravely striving to get a hearing from his grand pianoforte—bravely but vainly, till the vocal music waned, and then soon all became still—as "still as mice"—for the master. There was no mistake about his speech. It emphasised the gratifying fact that there *is* unity in spirit between workers of all grades and directors. It is so, we are happy to know, in many establishments of a similar character, and never was it signalised more clearly than on this occasion. In a speech of gratitude and hope, Mr. Sherwood expressed his obligations to all—men and boys—who served him so loyally, faithfully, and well. Some had grown from boyhood to manhood in the work of his "House," and he read with pride the names of many who had served continuously for from nearly twenty to nearly forty years. He hoped other boys present might do the same. His business could not have been raised to its present dimensions without such an able staff and worthy, willing workers as he rejoiced in. He knew the work, and what men could do, and warmly appreciated what his friends had done, were doing, and would do; and they might depend upon it that so long as they did their duty to him he should not be lacking in endeavour to do his duty to them; and while the best of feeling existed and mutual trust prevailed, all would be stimulated to do what was just and right, and then as they were satisfied with, and thankful for, the past and the present, they might look with confidence to a prosperous future, when his sons would be as faithfully served as he himself had been.

Such is, in brief, the substance of a speech that made many hearts, old and young, leap with joy. It is not given to all to do what Mr. Sherwood has done in the institution of these banquets. They commenced in connection with some special event, or the event was seized as an excuse for friendly meetings, which seem to have become established

Fig. 86.—Mr. N. N. Sherwood.

features to be looked forward to annually by those who have come to believe that such gatherings are good for all who attend them.

But if not in this particular way and at this particular time, yet in other substantial ways and at other times, are pleasant gatherings promoted and good deeds done by the proprietors of other firms which occupy leading positions in the great industry of horticulture.

There are still other modes, and a time never out of season for bringing them into operation, which go to the making of "happy families"—little personal acts of kindness and of grace which will pass to and fro before many days are over, and are, in fact, on the way. If each and every person would seek to make one human being happier in a thoughtful way the sum total of happiness would be great. The time almost by universal consent for doing this is now, and if it were done we should be nearer the realisation of the ancient wish that will shortly fall from a million tongues and pens as naturally as it slips from the pen of the writer; it is a Catholic pen for the moment, and inscribes for all of every creed, rank, class or party the wish for

A Merry Christmas.

GLADIOLUS GANDAVENSIS.

The position which this splendid autumn-flowering plant at present holds, at least in London and its neighbourhood, is a very remarkable one. Well fitted to attract admiration by the bright and delicate colouring of its flowers of all shades, from pure white to the most brilliant scarlet, it may well be asked why it is not more popular: by popular I mean in the sense of its being more generally cultivated and exhibited. Whenever Gladioli are exhibited, people stand before them admiring their extreme beauty; but they go no further than this, and if you ask them they will probably shrug their shoulders and say, "I have tried them, and have utterly failed to keep them." I have asked many why, and the reply has been, as one leading nurseryman said to me, "I spent £50 on them, and have not one left."

I can look back upon twenty-five years of exhibiting, and the number

of exhibitors at any one show has never exceeded half a dozen, and I do not at present know of one amateur who cares to take the trouble of bringing his flowers to the show ; indeed, there is now very little encouragement for him to do so. The Crystal Palace Show, that was held early in September, always used to bring a certain number of exhibits, but that is now abandoned, and gives place to the great fruit show that is held at the end of the month. There are prizes offered by the National Chrysanthemum Society at the Aquarium, but from this amateurs are excluded—not avowedly, but the prizes offered are for collections, not for any specified number, and a collection which takes the prize consists of about 150 spikes, and an amateur's small number would look very out of place in competition with such an exhibit.

There is no regular competition at the exhibition held at the Drill Hall, so here again it is the nurseryman who comes to the front. In August Messrs. Kelway & Son always stage some magnificent collections, and Mr. Burrell of Cambridge comes out later on. This is one reason, I think, why the flower is not so popular as it ought to be, for disguise it as you may, it is, I think, a fact beyond dispute, that when a flower does not attract exhibitors it falls into the background.

But there are other causes tending to the same end. I have already alluded to the fact of the difficulty of keeping up a stock ; this can be done with pains and care, but it needs both. The corms which you plant this year may last for three or four, though in truth they are not the same, for the old one dies and the new one is formed on it. For all practical purposes, however, it is the same, and therefore those who said that they degenerated were in one sense correct ; at the same time the variety does not degenerate. I saw, for instance, this year, a bloom of Orphée with sixteen flowers expanded on it, and yet this sort has been in commerce for more than thirty years. This apparent contradiction is reconciled by the fact that each variety throws out more or less a number of cormlets which growers call spawn ; these when taken off and carefully planted, will grow in a couple of years into a flowering size, and thus, although the bulbs from which these have been taken have perished, the small ones produced do not seem to inherit any delicacy of constitution.

I have said more or less, for in truth the difference between varieties in this respect is amazing. I have mentioned Orphée, from which I recollect taking from one bulb in one season more than a hundred small ones, while there are other sorts which hardly ever throw out a cormlet. There is a remarkably fine variety raised by Mr. Burrell called Snowdon ; it is the purest white, with flowers of a large size, forming a grand spike containing eighteen to twenty expanded blooms ; but it is utterly valueless to the raiser, for it hardly ever produces a small bulb, and this explains the fact that many sorts do not drop in price like others. There are those which came out in the same year, of which one can be had for a few pence, while the others are still priced at a few shillings, and so I would say that those who wish to keep up a collection must depend for a continuance of their stock on these small corms.

There is also another cause why this flower is so sparsely exhibited—it involves a great deal of trouble in bringing it to the place of exhibition. Various have been "the dodges" to which growers have resorted for this purpose, for it must be remembered that you cannot bring them in the stand in which they are to be shown. I myself used to try this, but was ultimately obliged to abandon it. They are mostly taken now in frames covered with canvas and securely fastened, and anyone who knows the remarkable agility which railway porters always manifest wherever flowers are concerned, will readily imagine that it requires a somewhat watchful eye and a liberal expenditure of "tips" to get them safely through. Then when you have your flowers at the table for exhibition you have to take them out and arrange them in the show stand. Compare this with what an exhibitor of Chrysanthemums, Dahlias, Asters, and other autumn flowers has to do, and the difference will be at once seen. Their flowers are already arranged on the show stand, and all the exhibitor has to do is to draw them out of the case in which they have been brought to the place of exhibition. He may have, it is true, a desire to fiddle about with them, but that is the way of florists ; they always think they can make their flowers look a little better, and so as at our Rose and Dahlia shows it is very difficult to get exhibitors away from their boxes to make room for the judges.

These difficulties have prevented our amateur growers from continuing to exhibit Gladioli. I used to be a constant exhibitor at the Crystal Palace, but when that show was given up I had no place at which to stage ; in the same way, two very ardent and successful cultivators, Mr. Herbert Fowler of Taunton, and Mr. Lindsell of Hitchin, contributed some grand stands, but they too became tired of it, and although they both exhibited once or twice at the Aquarium, they afterwards abandoned it.

Other varieties besides those of Gandavensis have been exhibited at the Drill Hall, such as those of the Lemoinei and Nancianus section, and some also raised in America by Mr. Childs, but I do not think any of them can ever hold the place in the estimation of the true florist that the Gandavensis varieties have obtained.

The following new varieties have obtained the award at the shows of the R.H.S. in the Drill Hall, and came from Messrs. Kelway & Son of Langport :—Carlton, a large and well-formed flower of rich rose purple colour ; J. C. Clarke, a soft rosy purple, the flower is large and the spike good, but it is not of a colour that everybody would admire ; Countess Amy, a very beautiful flower of large size and good substance, colour a bright rosy purple with white throat ; Mike Lambourne, a rich deep velvety crimson, the form is excellent and the substance of the flowers good and firm ; and Countess of Leicester, a large flower, the ground white with rose and purple markings.

There was a very beautiful stand exhibited by Messrs. Burrell on September 21st, but as the raiser was very much occupied with some seedling Cactus Dahlias that were of such merit that out of the four set out for certificates three of them obtained awards of merit, that he had no time to set up his Gladioli, evidently impressed with the idea that in a commercial point of view the Dahlia surpassed the Gladiolus.

The following new varieties from the Continent have been grown in my garden :—Actéon, salmon, pink striped ; Duguesclin, described by the raiser as a brilliant scarlet, with a large white centre and a good deal of slaty marking in it, but it did not strike me as being anything remarkable ; Hébé, white, striped rather heavily with deep purplish crimson ; Hellé, a very pretty pale flower, with cream ground and blotch, and slight lilac pink markings ; Le Cid, a grand deep scarlet lined with white, the blooms very large and the spike good ; Marie Caroline, rose colour, large flowers ; Marquis de Mores, a large well-opened flower of bright cherry red colour, lined and blotched with pure white ; Menelik, a novel and unique colour, flowers not very large ; Toison d'Or, a pretty flower, pale yellow, with slight pink striping, a remarkable combination of colour ; Tristan, a fine flower, red, with stripes of darker red ; Almée, clear yellow, slightly tinted with pink at the edges ; and Sablé, a curious combination of colours, deep orange scarlet, blotched, lined, and spotted with bright yellow.—D., *Deal*.

ROYAL HORTICULTURAL SOCIETY.

DECEMBER 14TH.

SCIENTIFIC COMMITTEE.—Present : Dr. M. T. Masters (in the chair) : Mr. Michael, Rev. W. Wilks, Mr. Sutton, Prof. Church, and Rev. G. Henslow (Hon. Sec.).

Cypripedium, Monstrous.—With reference to the specimen sent to the last meeting by Mr. Veitch, Dr. Masters reports that the lip was wanting, but the dorsal and ventral sepals as well as the lateral petals were normal; both stamens were present, but only two carpels, standing in an antero-posterior position.

Tuberous Growths on Vines.—Mr. S. T. Wright sent some gall-like structures taken from Vines in the large vinery at Chiswick. He observes that "many of the old and young rods are similarly malformed at their base. It does not appear to affect the health and vigour of the rods. In all the malformations grubs or maggots are present ; but neither moths nor weevils have been seen in the house." Mr. Michael pronounced the grubs to be coleopterous, but they were not likely to have been the cause. Prof. Church undertook to examine them chemically. There was no apparent structure in them beyond a mass of cellular tissue with a corky exterior surface.

Hellebores Diseased.—Some badly diseased plants were received from Mr. F. W. Burbidge, Botanic Gardens, Dublin. They were submitted to Kew for examination. The report was as follows :—"*Phoma effusa*, Desm., is the name of the fungus attacking the Hellebores. The diseased portions should be removed and burned, as at this season the fungus is producing myriads of spores, which live as saprophytes on humus in the soil for some time before they are capable of acting as parasites. The Hellebore shoots of next year will be infected by these spores. The above alternation from a parasitic to a saprophytic mode of life enables the fungus possessing one form of fruit only, as in the present instance, to tide over the period during which its host plant is not actively growing. Spraying with a solution of potassium sulphide (1 oz. to 3 gallons of water) when the leaves first appear next season would to some extent prevent the chances of inoculation from floating spores."

Holly with Red and Yellow Berries.—Mr. Ch. Turner, Slough, sent some sprays, on which he remarks, "They are cut from a large tree which retains its berries for two years. The berries are yellow in the first year, but change to red in the second year.' As no seasonal break was distinguishable between the group of yellow and that of the red berries below it on the same stem, some doubt was expressed, and some further information desired. This Mr. Turner has kindly promised to furnish.

SOLUBLE PHENYLE.

ALLOW me to thank your correspondent "Halogen" for his clear remarks about soluble phenyle and its composition (page 579), and also for the three remedies he has given us for the destruction of eelworm. It seems, from what he says, that there is practi ally no plant food in soluble phenyle. I thought there could not be any, hence my remark on page 547, viz., "I have yet to learn what soluble phenyle contains to make its application valuable to crops as food." If it contains no plant food, why are such statements made as we find on May 6th (page 400), and July 1st (page 140) ? On the former date we are told that "soluble phenyle will give value for outlay as a manure,' and on the latter date, "it acts as a fertiliser.' Surely there is something wrong somewhere.

So, "By the Sea" has turned his back on soluble phenyle. All I can say is, he is not the only one who has done so. Perhaps I may suggest to him a practical way of getting rid of the eelworm in his Cucumber house. Procure some quicklime fresh from the kiln. Slake it in a tub with boiling water, adding enough of the latter to make the lime just workable. After clearing out all the old soil, put the thick limewash on the walls with an ordinary whitewash brush, being careful to fill up every crevice. After finishing the walls, put a quarter of an inch of the thick wash all over the ground inside the houses, and allow it to remain until the houses are required. The heaps of soil for planting the Cucumbers in may be

placed upon the dried limewash. The turf should be cut and stacked at the same time interlacing with good fresh horse manure, and in addition a good quantity of basic slag and kainit. Before the soil is used, saturate with boiling water to kill any eelworm living.

Yes, Mr. G. Abbey, last year I reported a failure with kainit when 1 oz. in a gallon of water was used. On page 547 I was able to report a success because the medicine was used about twelve times stronger, and in conjunction with basic slag. Like Mr. Abbey, I do not wish to enter on another discussion about eelworm, for these notes finish all I now have to say upon the subject; but I would like to ask your correspondent if he be sure that 4 ozs. of kainit per square yard is sufficient to kill any species of eelworm in England, why he cannot advise one of your numerous readers to rush off for that £50,000 named by "Halogen" in last week's issue? Four ounces per square yard is only about 10 cwt. per acre; cost 25s. What would anyone have cheaper?

With regard to the substance used so disastrously on Cucumber plants, as reported on page 547, I wish to inform Mr. G. Abbey (1) that Little's soluble phenyle was the liquid used; (2) it was obtained direct from their works at Doncaster; and (3) it had the formulæ C_6H_5 upon the bottle.—W. DYKE.

THE AWARDING OF EQUAL PRIZES.

THE disposition of judges to award prizes of equal merit to exhibits at autumn shows seems to be on the increase. This is a proceeding of which I much doubt the necessity or the advisability. Prizes are offered for various exhibits—it may be a collection of fruit, one of vegetables, a group of Chrysanthemums, a collection of stove and greenhouse plants, or possibly two dozen cut blooms. The duty of the judges is to find the best, and in all such classes I maintain there is a difference, and that distinction ought to be made between the competing exhibits. As Mr. J. Douglas once said (or was credited with saying), the awarding of equal first prizes is an easy way out of a difficulty for the judges.

Personally I do not think it is possible for two exhibits of a similar nature to those noted above to be so arranged that the merits of each are absolutely equal. Take, for example, twenty-four Japanese or incurved Chrysanthemums; it is not to be expected that two competing collections can be so arranged that they contain exactly similar varieties. Surely, then, the placing of two stands on an equal basis of merit cannot be in accordance with the individual merit of each variety. Where two stands of blooms run each other so closely that the difference between the two cannot be determined by comparison, resort is usually had to judging them by the allocation of points. I have frequently had instances of two competing stands totalling up the same number of points. The arrangement of colours and the "setting up" of the blooms is then generally sufficient to give the casting vote.

In a group of Chrysanthemums, interspersed with foliage plants, there would appear to be more points for consideration, and consequently more opportunities of finding weak spots in the same way, that there is greater scope for merit. Apart from the quality of the Chrysanthemum blooms, there is the question of their foliage and the disposition of the plants themselves as to whether due regard is paid to harmony of colour, or otherwise, with the quality and placing of suitable foliage. All these points, combined with a pleasing margin to complete the group, not forgetting the hiding or the exposure of the pots containing any of the plants, must be considered.

From the newspaper reports we learn that a unique occurrence took place at the autumn show at York. The regular judges could not agree as to the merits of a group of Chrysanthemums and foliage plants, two others were called in, and they also were unable to settle the point of supremacy. A third couple were deputed, and, strange to say, they also disagreed. Here we have six persons failing to agree over the awarding of the first prizes, and this may be taken as a strong argument for the advocates of equality in prizewinning. Eventually at the show named equal first prizes were granted. From such a conclusion there seems reasonable grounds in this class that substantial justice was done. Still it is difficult indeed to imagine two large groups of plants even in every point of quality, and the reverse. At the Ipswich show a similar decision was arrived at over a collection of fruit in six dishes. In that particular class a faulty dish of Doyenné du Comice Pears gave an equal award to the competing collection.

The only legitimate ground that I have ever seen for the awarding of "equal" was where prizes were offered for one bunch of Grapes, irrespective of variety. Handsome specimens of Black Hamburgh, in every respect, competed against faultless ones of Madresfield Court. Here, then, was a really a difficulty. The question of deciding which was the superior bunch was really a matter of personal taste, liking or disliking one variety as against the other. Black Hamburgh, in superb condition, is hard to excel by any other variety, while the difficulty of "finishing" Madresfield Court is recognised as demanding more skill, and this, coupled with the fine flavour possessed by the variety, give it an equal position as a Grape.—SADOC.

[If a silver cup had been offered for the best group at York it would seem that it could not have been awarded. As to Grapes, if the Black Hamburgh and the Madresfield Court bunches were equal in merit as to size, shape, uniformity, and finish of berries, ought not the "more skill" required in producing the latter to have been the determining point? Were equal prizes ever awarded in the cast of the "premier" bloom in a Chrysanthemum show?]

EELWORM ON YOUNG VINE ROOT-STEMS.

THE young Vine submitted by "Cross" to the Editor on the eve of the Chrysanthemum season well represents the attack of root-stem eelworm (Tylenchus obtusus, *Bastian*), hence a representation of the attacked part (fig. 87, *A*) may be interesting to some readers of the *Journal of Horticulture*.

The Vine in question was planted in March, 1897, evidently a cane from an eye of the previous year, and had not been deeply planted; indeed, there was only 2 inches from the setting-on of the roots (*a*) and the surface of the soil (*b*). The cane had been cut back to two buds, and the wound thus made had healed over (*c*). It had made abundance of roots, a complete "mat" of fibres, which, when cut off, weighed 1¼ lb., and the extending roots, one of which is shown at *d*, were quite clean, perfectly free from vegetable or animal parasites. The growth of the Vine had been excellent, as shown by the canes (*e*), and these also were quite clean and healthy. They are reduced one-half of the natural size, and do credit to the grower, being short-jointed, stout in bark, hard in wood, and small in pith.

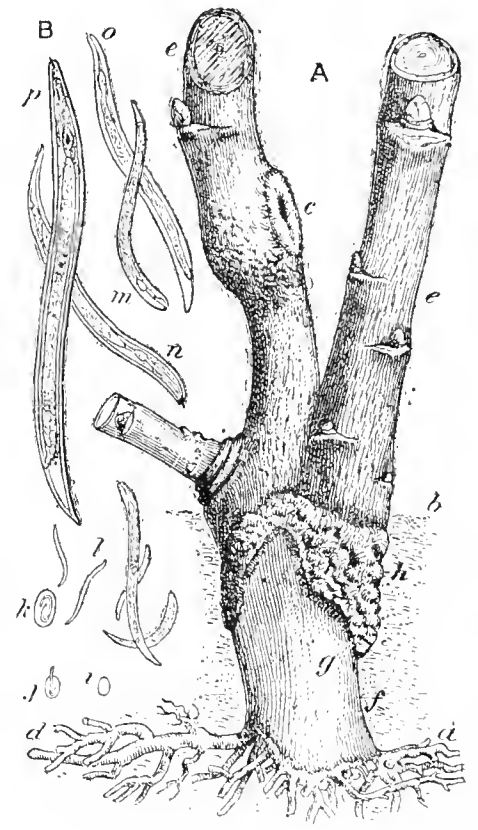

FIG. 87.—ROOT-STEM EELWORM (TYLENCHUS OBTUSUS, *Bastian*) ATTACK ON YOUNG VINE.

References.—*A*, part of Vine (half natural size) showing: *a*, setting-on of root-system; *b*, surface of soil; *c*, point of pruning or cutting back of cane in previous season; *d*, healthy root, free from eelworm; *e*, canes; *f*, barkless stem, arresting (partly) ascent of sap and descent (wholly) of assimilated matter; *g*, exposed stem; *h*, excrescence—"canker"—caused by eelworm. *B*, root-stem eelworm, enlarged (130 diameters); *i*, egg; *h*, eelworm emerging from egg; *k*, cyst-eelworm coiled inside; *l*, young found in part of excrescence; *m*, growing male; *n*, developing female; adults—*o*, male; *p*, female.

There was nothing to indicate disease except a decay of the bark at what is called the "collar," and some of this had fallen off, as represented at *f*, leaving the wood exposed (*g*). Above this, on the root-stem, appeared an excrescence (*h*), commonly called root-stem "canker," and in this a white mould was seen with a pocket lens. Its hyphæ did not pass into the living tissues, therefore, was considered a saprophyte which it is. I happen to know it well, but it can also break down living cells by contact of ferment or extruded juices, though that only happens under certain conditions not in this instance present.

Taking a small bit of the excrescence, and placing it in a drop of aniline, I got the animals, shown under *B*, as "still as mice." They were all forms of the blunt eelworm (Tylenchus obtusus), the root-stem pest of various herbaceous plants—weeds in Britain—and about as common as ditch water. I do not know what they do not live on, but they seem to delight in exotics, such as Cucumbers, Melons, Tomatoes, Chrysanthemums, Gardenias, and Ixoras.

The pest is not uncommon on Vine stems—that is, the root-stem, but somehow gets stopped in its work, and all goes well. Occasionally, however, it happens otherwise, and "Cross's" case is one to the point. Four Vines planted in March last with many others, have gone like the one represented, and that by root-stem eelworm, which never attacks any part of the plant but the root-stem; by so doing it makes sure of a supply of nourishment in abundance, the roots catering for it, and the descending current supplying bounteous assimilated matter, forming an excrescence—growth of cellular tissue.

The eggs were many; one is shown at *i*. One more venturesome inmate than the rest must come into this great world of things, but the animal only gets partly out of the shell (*j*). There were cysts, one represented at *k*, and several small fry, some before and others after encysting (*l*). There were males, one shown at *m*, and females, one represented at *n*, staid adults—Tylenchus obtusus—*o*, male; *p*, female. In "Cross's" specimen, everything appertaining to root-stem eelworm was there that is to be seen.

The eelworm leads a very simple life, lives on organic vegetable substances in a state of decay, and performs a very useful office in the great work of Nature—the reduction of organic material into inorganic—the food of plants. The larvæ, so called, emerge from the eggs, sport about in the decaying matter the parent has shed them in, then they encyst in the less decayed parts of the vegetable matter, or even in living, always soft cellular tissue, and after a time come out very active creatures, feed, grow and pair, the female gives forth some 200 eggs, and like her preceding consort, dies when her life work is done, the whole thing in summertime lasting four to six weeks. In winter, outdoors at least, breeding ceases, but under glass proceeds more or less the year round.

I know no more about this eelworm, and have put the matter in the

simplest way I am capable of, therefore need not proceed further, only "Cross" hit the nail on the head. "Soil may be rank, as the top (6 inches) is old Cucumber soil, the bottom virgin soil." The whole thing is there in a nut-shell. "Rank"—food for eelworms.—G. ABBEY.

THE NATIONAL ROSE SOCIETY.

ONLY the other day a correspondent was asking why the Rose should enjoy the appellation of the Queen of Flowers. Until the Chrysanthemum came no one thought of disputing the propriety of that title. So great are the claims of the Chrysanthemum, however, for regal honours in the floral world, that for some time she has been dubbed the "Autumn Queen," and as by the time her beauty shines most richly that of the Rose is on the wane; hence there is hardly after all a case of rival queens, for both are superlatively lovely in their seasons.

Reading over the report of the recent meeting of the National Rose Society I could but remark how different is the class of courtiers which thus annually meet to do honour to the summer queen to what are found in the court of the autumn queen. Not but what all are mortal and human, and therefore tainted with the feelings that pertain to humanity, and especially to those who are exhibitors. Still, the Rose does have a much more refined body of courtiers than the Chrysanthemum seems to have.

I have wondered whether the N.R.S. would care to meet or to hold its shows where the N.C.S. does; but surely I need not wonder, because it seems impossible it could be so. Association with the Rose, whether growing only, or both growing and exhibiting, evidently does refine. It could hardly be otherwise.

A floral society, to be worthy of the distinction of "National," should have a most important section of the community adequately represented on its Council—namely, amateurs, who occupy positions distinct from that of working gardeners, however honourable this occupation may be and high-minded the conduct and character of many of those who are engaged in it. It is the affluent after all who to the largest extent provide the means for the acquisition of new plants and the requirements of their cultivation.

It is most desirable to enlist the personal sympathy of this influential class with floral and horticultural associations, and this cannot be done, or done so well, otherwise than by according them a share in their government. It is not, however, by any means for their wealth alone that their official connection with societies is desirable, for there are many gentlemen who live and move in the same plane who are not wealthy, though ardent lovers of flowers, who can and do exert an influence which cannot, in the very nature of things, be exercised in the same direction by gardeners alone.

Moreover, gentlemen of high standing and education who may be engaged in large and successful business undertakings, or distinguished by their ability in the learned professions, possess great administrative capacity, and take broader views of things than any body of men can do who have had no such training. In a word, they give character and permanency to a society that must add to its strength.

I do not belong to class of which I write, and am a little more closely associated with Chrysanthemums than Roses; but I could not help observing, on reading the report, a source of strength possessed by the N.R.S. that seems to be unfortunately lacking in the sister society of the autumn queen.—MODESTO.

BUD VARIATION.

IT is odd that in the paragraph you inserted on page 576 under this heading, and quoted from an American paper, both the fruit sports referred to should be of English origin. The well-known Canon Hall Muscat Grape is there said to be product of a sport from the ordinary Muscat of Alexandria. There is no proof that such was the case. Mr. Barron, in his Vine book, refers to it as a probable seedling. No doubt the American writer has got a little mixed over recent mention of the sport at Chiswick, which resembles Canon Hall Muscat on the Muscat of Alexandria. As to the yellow Plums on a purple Plum tree, the only case that I ever read of or saw of this nature was in the late Dr. Stewart's garden at Alton, Hants, where a standard Plum, I think Angelina Burdett, for several years had produced yellow Plums on one branch. —A. D.

THE paragraph on bud variation brought to my mind a singular freak which occurred during my practice in Grape growing; that is, in a bunch of white Frontignan Grapes there appeared a perfectly black, naturally coloured, berry, rather larger than the normal white ones. This being on the side of the bunch facing the walk in the vinery, it excited some little interest at the time. I think such an occurrence is unusual. I cannot say that I ever heard of a similar freak.—J. EASTER.

YOUNG GARDENERS' EXPERIENCE OF CANADA.

IT may be of interest to readers of the *Journal of Horticulture* to give a few extracts from letters received during the past five years from three young gardeners who left the land of their birth for Canada in March, 1892. They were led to take this step after visiting the Royal Agricultural Show at Doncaster, where specimens of corn and fruit grown in that country were on view. They went out strangers in a strange land, having no friends there nor letters of introduction to assist them in obtaining employment. I was much interested in the success of their undertaking, as two of them had been employed under me for four years, and the other one for upwards of two years, as journeymen; all were good workers and of excellent moral character.

Knowing that I was interested in the commercial part of gardening they at various times mentioned the prices obtained for flowers and fruit in their adopted country, which compare favourably with the low prices prevailing in this country for several years past; but in making a comparison one must take into consideration the extreme cold and cost of production.

"A." writes: "I have now been here (Ontario) three months. I reached my destination at three o'clock in the morning after a cold and unpleasant journey. I would not advise anyone to come out steerage, as the majority of the passengers are foreigners, and the sleeping accommodation is not good. After leaving the steamer I was nearly three days in the train, which was enjoyable after seeing so much water and the rough life on board. 'B.' and 'C.' stayed at Montreal. I was extremely fortunate in securing employment in a private garden on the first day of my arrival, the wages being equivalent in English money to 31s. 3d. per week. There are few private places in this country, but anyone coming here and expecting to see nothing but log shanties will be much surprised, as there are some of the finest buildings I have ever seen. Electricity plays a prominent part even in the small towns. The electric light and electric cars are common, and nearly all the houses are connected by telephone. One can count as many as 100 wires in one street.

"The gardens are not kept in such good order as in the old country, as everything is done on a rough scale. It is very hot in the summer, the thermometer ranging from 90° to 96° in the shade, and all the lawns have to be watered, or the grass would soon be scorched up; but as we are near Lake Ontario water is plentiful."

After a year's experience the writer says, "This is called the Garden of Canada, and right well it deserves its name. This place is thirty miles from Toronto, the whole district being planted with Vines, Peaches, Apples, and Strawberries. One may go for several miles and see nothing else. Strawberries are soon over, and are of poor quality, the price being 1s. per punnet, Bananas 5d. per dozen, and Pines 6d. to 1s. each. Apples, of which there are great numbers grown, sell for 7d. per peck. Grapes are extensively grown and very cheap, the price being 1d. per pound; the bloom on them is perfect. Honey is abundant and good, the price being 5d. per pound.

"Chrysanthemums do not succeed well in the open air, owing to the dry atmosphere and the liability to be damaged by a bug which eats the centre out of the shoots. They, however, do well under glass if rooted in May or June and flowered in 5-inch or 6-inch pots. Plants treated in this manner will grow about 2 feet 6 inches in height, and produce from twenty to thirty small blooms. Odontoglossums, Cœlogynes, and Poinsettias are grown in the open air during the summer months. The latter do remarkably well, the bracts being larger than any I have seen in the old country. Orchids under glass are not shaded as much as at home, and they appear to do well and bloom as freely. Although it is very hot during the summer months one rarely sees the Vines scorched when grown under glass.

"Owing to the severe frosts, Cabbage if planted in the autumn would soon succumb, so plants are raised on hotbeds in the spring and planted out. In the autumn they are placed in large heaps and buried, the same as Potatoes are done in England, and they turn out all right in the spring.

"We have a few familiar trees to remind us of home; the Lilac and Philadelphus are to be seen growing and flowering freely, but of the common Hawthorn I have only seen one specimen. I am also much struck by the scarcity of wild flowers and song birds, which are so plentiful in the old country, but there are few here. The cold is not so severe in Ontario as it is in the North-West, where the thermometer often registers 40° below zero. The severest frost here has been 13° below zero, which is quite cold enough, as the ground was frozen to the depth of 3 feet, and ice on Lake Ontario was 2 feet 6 inches in thickness. It is not often we have more than 2 feet of snow, which, by the way, is different from what I have before seen, being like fine dust."

"B." found employment in a market nursery the second day after his arrival in the suburbs of Montreal, and after he had spent a year there he wrote: "I am in a commercial establishment, and receive 7½ dollars per week. There are many market growers in the neighbourhood of Montreal, and it is an easy matter to find employment so long as one can do the work; that is all they want. Roses, Carnations, Violets, Cyclamens, and Chrysanthemums are what we chiefly grow for winter. The flowers are gathered every morning and sent to the stores in the city, where there is a great demand for them. The retail prices during the last two months of the year have been—Roses, 10s. per dozen; Carnations, 3s. per dozen; and Violets, 1s. per dozen. Only six varieties of Roses are grown—namely, The Bride, Catherine Mermet, Souvenir de Wooten, Perle des Jardins, Sunset, and Madame Hoste. With us Carnations Daybreak, W. Scott, Silver Spray, McGowan, Portia, and Garfield are

most popular, and invariably flower well throughout the winter months. Of Violets, Marie Louise is the only variety grown. One house contains over 6000 plants, from which great quantities are gathered daily, which find a ready sale at the above price.

"Chrysanthemums are grown in 6-inch pots, and average eight to twenty blooms to a plant, one flower to each stem. The majority of the plants made from 50 to 75 cents each. Cyclamens are well grown in this country. We had grand plants, well flowered in 6-inch pots; they were two-year-old corms. The retail price of these was from 3s. to 5s. per plant. They are grown on a different system from what I was used to in the old country. We never allow the old corms to dry off at all, but keep them moist and growing throughout the season. My experience of Cyclamens treated in this manner is that they are much better than if kept on the dry side and allowed to rest. It may not be all in the treatment they receive, the different climate probably having something to do with it.

"The houses are all heated by steam; 30,000 feet of 1-inch piping is all heated by one boiler. Another little boiler is used for pumping and watering purposes. All the watering is done with the hose. There is a great saving in labour, the water is always warm. I like this country and the commercial business, but there is a great deal of competition. It is very hot in summer and cold in winter. February is the coldest month; 24° below zero is the most severe frost we have registered."

"C." wrote, after he had been in Canada nine months, "I am getting on well in this country. I obtained a situation in a commercial garden at Montreal the first day of my arrival. I am getting 7 dollars per week, and do not doubt but that I shall be able to command more wages next year. The chief things grown are Roses, Carnations, plants for decoration, and bedding plants in the spring. There is a great demand for flowers in this part, which command good prices. Roses are grown to perfection, and are managed so as to begin blooming the first week in September right on to the end of May, when they are replaced by young plants that are rooted from cuttings of the flowering shoots and grown in pots until the end of June. They are then planted out in the beds, which are 4 feet wide by 4 inches in depth, and run the entire length of the house. Cow manure is extensively used for growing Roses, and the temperature of the houses is maintained as near 60° as possible, which keeps them growing and blooming freely the whole of the time. As each bloom opens the shoot with the bud is cut back to the second bud, as might be the case with pruning Vines. Every shoot that breaks never fails to bring good blooms. That is what they call pruning.

"This place is on the banks of the river St. Lawrence, and about four miles from the city. The scenery is grand. Although we have the two extremes in heat and cold the atmosphere is dry and clear."

Since the above letters were written I have had further communication with the writers as to the advisability of young gardeners going to Canada, and the reply is nearly the same in each instance. "There is plenty of employment for young men in market establishments, and wages are an advance on the old country. There are few private gardens in which young gardeners are employed. Clothes and boots are similar in price to what they are at home, but rent and fuel is dear, and owing to the excessive cold a fire has to be kept burning throughout the night."

In answer to my query as to their future prospects I find they are not very good unless they can save sufficient money to commence business on their own account. They do not advise others to follow their example, although they own they would not like to come back to this country and work under the old conditions. They are loud in their praises of their adopted country. In the States, they observe, better wages may be obtained, but the hours of labour are longer, as Sunday is very much the same as other days of the week. They therefore remain loyal to the British Flag.—S., *Yorks.*

GRAPES AT TILEHURST.

I SEE on page 552 that "A. D." does not credit my statement as regards the vinery at the Tilehurst Nurseries. I advise him to read the paragraph again more carefully than he did before, ere he makes another calculation, for in my *Journal*, at page 521, the statement reads thus:—"The Vines are planted 5 feet apart at the back of the pipes, each Vine consisting of two fruiting rods, and one-rod Vines were planted in front of the pipes to get a crop of Grapes at the top of the house." These Vines have not been removed, but are still in the position in which they were planted, just 2 feet in front of the back Vines, and had Grapes on them this season.

Now if Mr. "A. D." will add fifty-eight rods more to his calculations he will then be able to see that it is not so very wonderful that a house of Grapes, grown for market, should have that number of bunches, representing, as they do, 3 tons or more of Grapes.

I suppose Mr. "A. D." noticed the Editor's remark. If your correspondent cannot see the photograph that was sent with the sample of Grapes I will send him one by return of post if he will send 2s. worth of stamps; if he cannot see his way to do that, if he will let me have his address, I will send him one gratis.

If he would take a trip down the Lee valley in Middlesex and Herts, he may see many such vineries, also in other districts; but it is rather late for that now, as the weather has been too warm for keeping Grapes back. We could not keep the houses cool enough for Grapes that were ripe at the beginning of September.

If I am spared till another September, and Mr. "A. D." is willing to pay me a visit, I may be able to let him see another good show of Grapes. If we do not get all the bunches to average 1½ lb., we can always find a corner in the basket for a smaller bunch that will just make the weight right and the basket full. I did not say that 1 lb. was the average weight, but "not less than 1 lb."

I thank "A. D." for the compliment he pays me of being a Grape producer. This is exactly what I want to be—namely, able to supply the masses with Grapes.—JOHN BRADLEY, *Tilehurst Nurseries.*

[The facts of the case would have been clearer if the sentence had read, "One-rod Vines were *also* planted in front of the pipes." Mr. "A. D." shall see the photo, and he may just be able to discern a row of Vines between the pipes and two side walls of the span-roof, also another row on the opposite side of the pipes, or between them and the central path, but, of course, near the pipes, seeing there is only a distance of 2 feet between the two rows of Vines. Such a dense, dark mass, with Mr. Bradley and his men, about the same colour as the Black Alicantes, could not be reproduced with justice to either the Grapes or the men, and we should be sorry to spoil either one or the other.]

REST IN PLANT LIFE.

"A. D." in his note on page 553 has, we may hope, set many cultivators thinking, for his subject is a very wide one. It is quite true, as he says, that rest is a relative term, but he appears to have overlooked the fact that it is also a variable quantity. Because the tropical vegetation he speaks of rests in a different way from that of cooler climes, is "A. D," right in saying that "There is in the case of all this tropical vegetation absolutely no proof that what is empirically termed rest is necessary?" As a matter of fact some at least of the plants he mentions take a decided period of rest, both in their habitats and also under cultivation, without the temperature being reduced beyond natural requirements.

During the natural period of apparent inactivity that may be noticed in almost every plant known, Nature is still alive, and the forces of the plant are fulfilling their proper functions, and I have no hesitation in saying that to keep any of these in a continual state of growth, were it possible, would eventually weaken and ultimately kill the plant. It would take longer with some than others, no doubt, but the end would be the same in all.

I cannot think "A. D." in earnest when he asks if deciduous trees really remain inactive above and below ground. If he is he may easily satisfy himself by keeping, say, a Peach tree, absolutely dry from the time the leaf falls until the proper time for it to start growing naturally. If he find at the end of it that no harm has been done to the tree, then it will be sufficiently demonstrated that the roots and branches pass into a comatose condition, have nothing to do, and do it. But of course "A. D." knows perfectly well that it is not so, and he also knows, I take it, that what we call rest is "an indispensable part of the great plan," just as much as growth is, but that absolute "rest" comes to plants as to animals only when they cease to exist.—H. R. R.

I VENTURED to allow the brief article upon this subject to be concluded ere replying to "A. D.'s" criticisms (page 553) upon it—a reply which common courtesy not only demands, but from the apparent interest taken by my able critic in the matter, with his pertinent questions still unanswered, judgment would go by default, and I am guilty of setting "an empirical theory" upon a foundation of "egotism" rather than that of observation.

Firstly, the conclusion of the article has, perhaps, in some measure shown the broad view taken by me—the writer of it. Perhaps not. In either case the fact remains, and no endeavour shall be made to ignore it, that either an assertion has been made, "an unquestionable dictum" constituted, or an "empirical theory" set up, and this is the crux of the critique. Whilst wishing "A. D.' to know that it was no hastily penned paper, being indeed the endeavour to express such knowledge as the observation of a lifetime in the great garden of Nature affords, with the benefits generally conferred by the labours of our great leaders in the botanical field of research, I must confess that his critical pen has led me to review the subject, and this has strengthened (in my own mind) the original assertion, dictum, or theory. This, I am aware, is rather self-comforting than critic-convincing; and, however one may wish to eliminate all bias from a broad question, our subject being too broad to admit of narrowing down into a matter of personal opinion, I, at least, while sticking to my guns, would rather hear a little independent firing settle the matter *pro tem.* This advisedly, having not a shadow of doubt but what in a century hence (and probably long before) the now contentious dictum—it is an indispensable part of the great plan that all life should have rest—will be duly recognised and fully established.

Obviously rest in plant life does not necessarily insist upon a total suspension of the functions of life any more than in the animal kingdom; frost alone, to repeat what has been already advanced, being the sole agent whereby vitality is completely arrested. Upon the similarity existing between life of the vegetable and of the animal kingdom sufficient evidence exists, from the observations of some of our most eminent men, to warrant the thought that it is worthy of another paper, which, with permission, will be given. All of such evidence as can be adduced is, at least, interesting, some of it has a distinct bearing upon our practical work, and in one particular instance the similarity is startling.—INVICTA.

Notes & Gleanings

Weather in London.—It cannot be said we are having what is generally acknowledged as typical weather for the Christmas season. Last Thursday, Friday, and Saturday were mild, the latter being very foggy, while on Sunday it was damp. Monday and Tuesday were fine, a cold wind prevailing over both days. At the time of going to press on Wednesday there was a very sharp frost.

—— Royal Horticultural Society and Victoria Medal.—At a meeting of Council held on December 14th it was decided to issue a diploma to all the recipients of the Victoria medal of honour. It was also unanimously resolved, "That in the event of any recipient violating the conditions on which the Victoria medal of honour was bestowed by using it for advertising, or for the promotion of trade interests in any other way, the name of such offender shall be struck off the list."

—— Ancient Society of York Florists.—On the 15th inst. the members of this Society met to partake of the annual dinner, under the presidency of Sir Joseph Terry, J.P., who was supported by several influential local gentlemen. The well-known Secretary, Mr. J. Lazenby, occupied the vice-chair. The company numbered between seventy and eighty, and from the tone of the several speeches it was easy to gather how excellent was the status of the Society, and how harmoniously everyone seemed to work for its good. The evening was in every respect a great success.

—— Apple Bramley's Seedling.—The value of this excellent Apple is becoming more recognised every year. For the Christmas season it is surpassed by none, and only equalled by a few, such as Newton Wonder and Wellington. It is now becoming well known on the markets, and buyers are ready to take good samples at high prices. An instance of this is furnished in a letter from a friend in Yorkshire. He writes: "I am selling my Bramley's at 20s. per cwt., and wish I had had a few tons of them." In all probability many growers will fervently re-echo the wish embodied in this brief sentence.—D. R.

—— National Dahlia Society.—The annual general meeting of this flourishing Society was held on Tuesday, the 14th inst., at the Hotel Windsor, under the presidency of Mr. T. W. Girdlestone. The company was a capital one, growers being in evidence from all quarters. From the annual report read by the Secretary, Mr. J. F. Hudson, it was easily gathered that the season of 1897 had been a successful one, and that the determined efforts of the leading spirits of the Society were not passing unrewarded. References were made to the climatic conditions during the growing period, and also to a few of the several classes. The financial aspect of the Society was placed before the meeting by Mr. E. Mawley, and it is pleasant to record that things are in a very satisfactory state, the balance in hand being just over £21. Routine business and votes of thanks occupied the remainder of the meeting, which was a most harmonious one. The work done by the Society is praiseworthy, and we wish it every success.

—— A Mild Season in Ireland.—The season so far here has been remarkably mild. It is certainly unusual a few days before Christmas to have the open air temperature, as it was recently, 60° Fahr. in the open air; while the night temperature did not fall below 45° Fahr., and with, up to the present, practically no frost. I am still gathering bunches of Chrysanthemums in my town garden, not merely hardy Pompons, but fine blooms of Col. Smith, G. C. Schwabe, Viviand Morel, and secondary terminals of Etoile de Lyon. Madame Berard, the most floriferous and persistent bloomer of all the Tea Roses, has several blooms still opening, while Marie Baumann and Mrs. R. Sharman Crawford gave me fine blooms the present week. A new supply of Teas in the open air, planted a month since, are now unfortunately expanding their growth buds, which, unless a climatic miracle takes place, must be badly burnt back by-and-by. We have often had second crop Strawberries and second crop Apples, but until this week I never saw second crop Gooseberries. There have been continuous rain downpours, with southerly and westerly gales, which accounts for the mild season; but northerly winds and night frosts may later on be expected to supervene.—W. J. Murphy, *Clonmel.*

—— Appointment.—Mr. John McLean, late gardener and manager to Sir William Pearce, Chilton Lodge, Berks, has been appointed and taken up the duties of steward and general manager to the Right Hon. Lord Annaly, Luttrellstown, Clonsilla, co. Dublin.

—— Devon and Exeter Horticultural Society.—The Committee of this Society has decided upon the dates on which to hold the two annual exhibitions. The summer show will be on August 19th, and the fruit and Chrysanthemum show on November 3rd and 4th. The Hon. Secretary is Mr. G. D. Cann, 16, Queen Street, Exeter. Schedules of the exhibitions may be had from Messrs. R. Veitch & Son, Exeter.

—— Avery Hill, Eltham.—We are informed that the family of the late Colonel North have decided on relinquishing this Kentish residence as a home. The plants are to be sold, and the capable gardener, Mr. George Abbey (son of the veteran whose name is familiar to readers of the *Journal of Horticulture*) is only to remain in charge of the establishment till he obtains an appointment of a similar nature elsewhere. His excellent work at Avery Hill has been described in our columns.

—— Birmingham Horticultural Society.—The annual dinner of the Birmingham and Midland Counties Chrysanthemum, Fruit, and Floricultural Society was held on the 15th inst. Mr. W. B. Latham presided. The Chairman proposed the loyal toast, which was followed by that of "The Society," given by Mr. A. Coombes. He remarked that they had every reason to be proud of the Society, because it was one of the best—if not the best—of its kind in the country. The show held at Bingley Hall was undoubtedly the finest ever held, not only in Birmingham, but anywhere in England. The Chairman and Mr. Pope responded. The health of the exhibitors was drunk on the proposition of Mr. W. Jones, who presented a financial statment which showed receipts amounting to £834 12s. 6½d. It was also estimated that they had yet to receive about £265 7s. 5½d., which would raise the total to £1100. The expenditure so far had been £656 3s. 10d., but it was estimated that bills outstanding would amount to £293, which would bring the total expenditure to £950. There would, therefore, be a balance of about £150 on this year's show. The names of Messrs. J. H. Goodacre and J. Crook were associated with the toast. The health of the non-competing exhibitors and donors of special prizes was submitted by Mr. W. H. Dyer, and drunk with enthusiasm. Mr. W. Jones's name was associated with the toast of "The Officers," which was given by Mr. W. Spinks. The health of "The Visitors," submitted by Mr. J. Child, and replied to by Messrs. Fellows and Twyford, and the "Chairman and Vice-Chairman" were also drunk. During the evening the cups and medals gained at the exhibition were distributed.

—— Conifer Seeds.—A great difference exists in the germination of Conifer seeds from different localities. The seeds of all the Conifers hardy in the Eastern States of America come up (says Mr. T. H. Douglas in "Garden and Forest') at the same time, or nearly so. Norway Spruce, White Spruce, Scotch, Austrian, and Mountain Pines, the Colorado Conifers, Picea pungens and P. Engelmanni, Douglas Spruce, Abies concolor, and other common Conifers can all be uncovered at one time. But few seedlings come up ten days after the first ones appear, while Conifer seeds from a warmer climate are very irregular in germinating. I raised a large quantity in California in 1889 and 1890. Those already named were sown in beds adjacent to the more tender kinds. Pinus Jeffreyi, P. ponderosa, and P. tuberculata started from two to four weeks before the others came up. Abies magnifica, A. grandis, and A. amabilis came very scatteringly. The first of these appeared in April and the last in September, and they required careful attention. The various Cupressus varied as much as the Abies. Douglas Spruce, Abies concolor, and Pinus ponderosa, from Colorado, came up much more regularly than the same species from seed collected in California, but the seedlings from California seed made much larger plants at the end of two years. Most of the seed from the Orient acted as those of our native and European species do, being very regular in germinating. The exceptions are Picea Morinda and P. Ajanensis, but as I had very little seed of the latter, and that apparently two or more years old, I may be mistaken in this particular. The seeds of Sciadopitys verticillata, Cedrus Deodara and C. Libani are also irregular in time of germinating. Cedrus atlantica may also be added to the list, but it comes up more evenly than the seeds of other Cedars. The seeds of our native White Pine are the most uneven in germinating of those of the hardy Conifers; but although they sometimes come up irregularly, this tree can hardly be classed with the species which are irregular in germinating. Thuia gigantea and Libocedrus decurrens are irregular.

—— Death of Mr. James Casey.—It is with sincere regret that we learn of the sudden death of Mr. James Casey, which occurred on the 8th inst., from the result of a chill contracted the previous week. The deceased, whose age was fifty-one, had been with Messrs. H. Low and Co. about thirty-four years, and latterly has represented this well-known firm as a traveller in England, Scotland, and Ireland, where he was thoroughly well known and respected.

—— Flowers in the Scilly Islands.—According to a daily contemporary the flower crops on the Scilly Islands are not so forward as they were last year, which was a record one, and the general opinion among the farmers is that the early blooms will not be so prolific as last season. Various reasons are given for this, one being that the bulbs are somewhat exhausted after the exceptionally heavy crops they produced last year. It is to be hoped that good prices will compensate for any deficiency in quantity. Much has been done recently by the Great Western and the North-Western Railways to develop this delicate industry. New markets in the North have been opened up by a quick and improved service of fast trains, particularly the new night express from Bristol by the Severn Tunnel route, in direct connection with the up night mail from Penzance. Consignments leaving the islands in the forenoon are in the Liverpool and Manchester markets as early as six the next morning, at Edinburgh and Glasgow by midday, and at such a distant station as Aberdeen at six o'clock on the evening of the following day.

—— Royal Meteorological Society.—The monthly meeting of this Society was held on Wednesday evening, the 15th inst., at the Institution of Civil Engineers; Mr. E. Mawley, F.R.H.S., President, in the chair. Mr. W. Marriott read a paper on "The Rainfall of Seathwaite, Cumberland." This place has long been noted for its heavy rainfall, being in fact one of the wettest spots in the British Isles. The average yearly amount is 137 inches. The spring months of April, May, and June are the driest, so they not only have the least rainfall, but also the least number of rainy days. August, the month when the Lake District is thronged with visitors, has the greatest number of rainy days. The heavy nature of the rainfall may be gathered from the fact that 21 per cent. of the falls are above 1 inch, 2 per cent. being above 3 inches. The greatest fall in one day was 8·03 inches, on November 12th, 1897. The author has investigated the atmospheric conditions under which the heavy rainfalls occurred at Seathwaite, and he finds that these heavy falls are due to the direction and force of the wiud. When the wind is blowing strongly from the south-east or south-west, it will be concentrated in the valleys on the windward of Seafell, and rush up them with considerable force, the air current consequently being projected to a considerable altitude beyond Seafell. Owing to the reduction of temperature with elevation the air parts with a great deal of its moisture, which falls as rain. With such a process going on continuously for a whole day, the heavy rainfall at Seathwaite is fully accounted for. Mr. R. C. Mossman, F.R.S.E., also read a paper on "The Daily Values of Non-instrumental Meteorological Phenomena in London from 1763 to 1896."

—— The Rating of Nurseries.—One of the unfortunate results of the Agricultural Rating Act was that in granting relief to all land classed as agricultural the burthen of recompense is thrown upon the taxpayer at large, and thus the agricultural interest, which denounces sugar bounties in other countries, readily accepts a bounty in the shape of relief of rates from the Government. It will seem to the unfortunate and over-burdened taxpayer grave aggravation of his burthens if, as was recently claimed at Teddington, nurseries of glass houses on building land in populous districts should claim exception from local burthens, on the ground that the land so occupied is agricultural. As well say that every piece of land occupied by a factory or workshops of any description is agricultural also. Surely it was never intended by Parliament that other than land purely agricultural should be so exempted from a burthen of rate which everybody else has to make good in taxes. When we see wealthy florists and nurserymen claiming exemptions we are naturally led to infer that they have scant consideration for the pockets of their neighbours. It is too much of a joke to assume that the nursery or market growing industries are "distressed." Already, indeed, we see that the purely agricultural interest is rapidly becoming more prosperous, and the gross injustice of the Rating Act is thus rendered all the greater. Naturally the decision of the House of Lords is awaited with exceeding interest. It is hoped that the law will be so clear on the matter that there shall be no division of opinion, as was seen in a recent case. It is too much to hope that the House will denounce the Rating Act as grossly unjust, but at least it may, by its decision, protect the pockets of taxpayers from outrageous demands.—Taxed.

—— Tree Planting in the Isle of Man.—We learn from a contemporary that a movement, at the head of which is Lord Henniker, has been initiated in the Isle of Man for extensively planting the island with trees, and thus making its arboreal charms more attractive to visitors. At a meeting held at Douglas reports favourable to the project were received from various parts of the island, and a resolution was adopted for the formation of a tree-planting society, and an influential committee appointed to draw up a constitution and code of rules for the management and development of the same.

—— Schizostylis coccinea.—This, I venture to assert, is one of those plants not cultivated nearly as much as its merits claim. This applies more especially to the southern and West of England counties. For the last six years I have annually seen some fine clumps of this Kaffir Lily, producing many spikes of the graceful scarlet flowers with their effective yellow anthers, and very useful they have been found when arranged in vases. Flowering naturally out of doors in October there are then usually a good quantity of Anemone japonica alba in flower, and the two growing and flowering side by side in the garden, or arranged together for decorative purposes, enhance the beauty of each other in a most desirable way.—Exile.

THE MILDNESS OF THE SEASON.

There are too few records published of the condition of the Arctic ice north of Europe to dogmatise about and to predict general outlook as to the severity of the coming winter. It would be of the greatest value to know more. The annually increasing movement of vessels in those regions, however, will remedy this defect somewhat, and it is consistent with the repeated reports received thence as to the unusual retreat this year of the Arctic ice-masses to point to the actual mildness as a possible consequence of that retreat, and the continuation of which might allow us to look for a generally mild winter. Furthermore, the reduced rainfall we find so prevalent this year would mean, if over larger areas and further north, reduced snowfall, and tend in the same direction towards mildness.

A meteorological station at Spitzbergen—nay, at Franz Joseph's Land and elsewhere—with submarine cables, should be the natural outcome of this age of science and exploration. Even the homely question of the Christmas meat market might not inappreciably direct its attention to early information as to the useful limits thereby counselled to the production of Christmas cheer, and a more general influence on agriculture might be exercised by future regular news from those northern regions.—H. H. R., *Forest Hill.*

OLD PARK, VENTNOR.

This, the residence of Mrs. Spindler, is beautifully situated on the Undercliffe of the Garden Isle. Extensive beltings and plantations have been formed from time to time to afford shelter and privacy. The horticultural department, in the capable hands of Mr. Geo. Abbott, comprises many good points. The erection of four houses, consisting of three Orchid houses and a show house, each about 20 feet by 25 feet, with tanks for rain water, and cellars underneath, proves the interest taken in horticulture by Mrs. Spindler. The lean-to vineries contain some healthy canes of Black Hamburgh, Foster's Seedling, and Buckland Sweetwater, which have yielded abundant crops this season. Two large greenhouses were well stocked with a miscellaneous collection of plants, Calla æthiopica being exceptionally fine. The Chrysanthemums were gradually getting over, with the exception of L. Canning (which is considered to be indispensable for late work) and Mrs. H. Weeks.

There is not much to see in the kitchen garden at this time of the year, though we noticed some fine Celery, autumn-sown Onions, and a healthy collection of winter vegetables. The fruit department is excellently arranged. There are two gardens, each comprising an area of about 900 square yards enclosed with a wall 10 feet high, securely netted overhead so as to exclude the birds, which are innumerable in the fruit season. Wall trees are grown in quantity, consisting of well trained Pears, Plums, Cherrics, and Peaches; whilst in the open quarters are bush Apple trees, Gooseberries, Currants, Strawberries, and Raspberries. In the cultivation of Strawberries Mr. Abbott finds that they fruit well for four or five years, and pay him better than making a new bed every second or third year; and also that digging amongst them in autumn or winter is productive of good, and not harm. I need not say that only the best varieties of fruits are grown.

On a south wall Roses are cut nearly all through the winter. The grounds surrounding the mansion are very picturesque and charming in the extreme. On the edge of a large lake were fine plants of Calla æthiopica, which bloom profusely. The aquatics include Nuphar lutea and Nymphæa alba. The extensive lawn is relieved by large plants of Eucalyptus globulus, Yucca aloifolia variegata, Chamærops Fortunei, Aralia Sieboldi (over 18 feet in circumference), Magnolia grandiflora, Choisya ternata, Picea pinsapo, Picea nobilis, and other magnificent specimen plants.

The estate is one of the largest and best in the Garden Isle, and well worth a visit from anyone interested in gardening. It is one mile from St. Lawrence Station, and three miles from Ventnor, on the road to the world-famed St. Catherine's Lighthouse and Black Gang Chine.—S. H.

CATTLEYA OLIVIA.

IT is probable that no section of the great Orchid family is more generally popular than that which embraces the Cattleyas. Amongst them may be found flowers of all colours, from white, through all the tones of rose, to the deepest red, with many of beautiful yellow shades. Notwithstanding the already enormous number of species, hybrids, and varieties, a new one, if distinct, and a marked advance on those existing, is sure to be received with favour. One of the most attractive that has recently been exhibited is Cattleya Olivia, of which we give an illustration (fig. 88). This was staged by Messrs. J. Veitch and Sons, Ltd., Chelsea, at a meeting of the Royal Horticultural Society held on October 26th of this year, and the Orchid Committee recommended an award of merit being given to it. It is a hybrid resulting from a cross between C. intermedia and C. Trianæ, the flower being of great beauty. The colour of the sepals and petals is delicate blush, the outer portion of the lip being rose, and the inner part cream. The flower is of excellent form and substance.

SOPHRONITIS.

WHEN Dr. Lindley founded this genus upon the typical S. cernua he doubtless hit upon a good name for it—viz., the Greek word meaning modest. Nothing could have been more applicable to it, for, as is well known, it is a small unassuming-looking little plant, growing so close and dwarf as almost to appear to be trying to hide itself from view. But when this was done the splendid showy kind with which we are all now so familiar—S. grandiflora—was unknown, and to this species Lindley's name seems out of place. But it is euphonious and also easily remembered, and as not one orchidist in a dozen troubles much about the derivation of their names, it is a matter of small importance to many.

To the botanist explorer Gardner the credit of introducing the Sophronitis in quantity to this country is due, though at least two out of the three species were known to science beforehand. Their culture is not difficult if due care is exercised, but being small-growing plants they are more subject to checks than their grosser growing congeners, the Lælias and Cattleyas. To compare a Lælia of the purpurata type, say, with a Sophronitis seems to the uninitiated a curious proceeding, but the fact of their so freely crossing the one with the other proves the near relationship. To grow them well and cause them to flower freely a house rather higher than the Odontoglossum house, but cooler than the compartment where Cattleyas are grown, is necessary.

Instances of successful culture in the coolest house are on record, but there can be no doubt that they like a few degrees more heat than the Peruvian and New Granadan species herein grown. S. cernua is a plant that seems to delight in clinging close to its support, whether it be wood, cork, or compost; and this evidence of a true epiphytic habit must be kept in mind when providing a root-hold for it. If pans are used these should be nearly filled with clean crocks, only about half an inch being left for compost. This may have a slight rise to the centre, and the plants wired so firmly on this that they are not likely to be moved in the least when the pans are taken down for watering or examination.

Sound fibry peat and sphagnum suit it well for compost, and though in the resting season it must have a sensible reduction in the amount of water given, yet a very dry régime is to be avoided. About three of the charming little flowers are produced on each peduncle, which only rises a little above the squat little bulb and foliage, and they are a delightful combination of cinnabar red and yellow, the latter colour occurring principally upon the lip. Although so small, the flowers last a very long time in good condition, and brighten up many a house during the dull days preceding Christmas. Its habitat is Rio de Janeiro, whence it was sent to Mr. Harrison of Liverpool many years ago by a relative in Brazil.

Much more showy, and a plant quite indispensable at this season, is S. grandiflora, the best in the genus, and a remarkably fine Orchid. So free flowering is it that from twenty-five to thirty flowers are produced on only medium-sized plants, and what is most surprising is the fact that these beautiful blossoms, some 2½ to 3 inches across, are produced and maintained for six weeks or more by tiny pseudo-bulbs scarcely above an inch in length. Such a glowing scarlet mass of flower is not produced by any other Orchid of its size, so one ceases to wonder at its great popularity.

As far as my experience goes, it is not possible to determine the varieties of this species by their habit, but, as a rule, it may be taken that the rich crimson flowers are generally produced on long, thinnish, bulbed plants, those of the crimson purple type usually occurring on the more obese bulbed plants. Their culture is, of course, the same, and does not, in fact, differ materially from that noted for S. cernua. If any difference is made, S. grandiflora, being the stronger growing of the two, may have a little more compost than the other, and rather wider receptacles to grow in. It first flowered in this country in 1841 with Messrs. Loddiges of Hackney, to whom it was sent by the collector named above. It must be a very abundant species in its native habitat—the Organ Mountains in Brazil—when we consider the enormous number of plants of it that have been imported since then.

Perhaps the least known of all is S. violacea, though it is a very pretty little plant. In habit it differs from the others in that the pseudo-bulbs occur on a creeping rhizome at some little distance apart instead of clustering. The bulbs are about an inch high, fusiform and fluted, and the leaves are about 3 inches in length. The scapes bear one or two flowers of a pretty rosy magenta hue, paler in the centre than on the outer segment. This, too, flowers in the winter months, and is rather more difficult to cultivate than the other species.

Owing to the rambling habit mentioned it is not suited for growing in pans, but does much better when it is allowed perfect liberty. I know of no better holding for the roots than pieces of Tree Fern stems cut into suitable lengths. If the plants are firmly wired to these they will take no harm afterwards, each little bulb and portion of rhizome pushing its own quota of roots into the soft bark of the Fern. No compost is necessary, the roughness peculiar to these stems being ample for their needs. Some growers use blocks of cork or wood more or less lightly dressed with sphagnum moss, and I have seen nice specimens grown this way. In either case the chief points to be observed are room for the full extension of the rhizomes and available support for the roots. This, coupled with a regular and constantly moist atmosphere and freedom from insects, will enable anyone who has had a little experience with Orchids to grow it well.—H. R. R.

HERBS AND AROMATIC PLANTS.

IT is often a matter for surprise, to me at least, that so little attention is paid to the culture of these plants in many gardens which in other respects leave little or no opening for adverse criticism. This, in allusion to herbs or, more correctly speaking, pot-herbs—a designation which, if not always pointed in application, has at least the merit of being an old-fashioned name for rather a large family. It may be that modern cookery on the one hand demands less from the herb border than in days of yore, and on the other we are too "up-to-date" to retain faith in but a tithe of the virtues ascribed to the "herbes and simples" by our grand-dams. However that may be, no garden can be considered complete if unable to furnish such things under this head as may be occasionally called for by the *chef de cuisine;* or is our renascent love for old-fashioned plants sincere without some recognition of those whose aromatic qualities endeared them to our ancestors. The latter are, indeed, pregnant with tender associations of the past; they are indelibly printed in the earlier history of gardening, and no later attempt to delineate a modern edition of this good old-fashioned work can afford to miss so important a page of it.

With few exceptions the culture of these simple plants requires only the most ordinary attention—but this they do require, and probably the majority will admit they are worthy of it; and their demands in the way of either space, soil, or situation are so limited that no excuse is provided for their exclusion. These remarks spring from two sources; the one is in repeatedly observing in really good gardens how poor an apology for a herb border is the meagre patch of impoverished plants bearing that title; the other is in having, long since truly, been called upon by a very arbitrary *chef* for some special thing on particular occasions, and found wanting. This led to some attention being given to the matter, by devoting a border to their culture, and forming a collection sufficiently comprehensive to meet all the real or imaginary wants of the most exacting of *chefs*.

The advantages of devoting a special plot or border to the cultivation of herbs, to be known as "the herb bed" or "border," are sufficiently important to be noticed, for when the many species and varieties are so gathered together and legibly and permanently labelled no margin is left for mistakes in obtaining what is required, mistakes which may have unpleasant, if not serious, consequences to him who is responsible for those who by ignorance or carelessness make them. It is here proposed to give a brief list of such plants which are either essential to or are worthy of being included in a general collection, with some simple directions for culture, to be followed by some notice of those aromatic plants which, whilst yet adorning some old-fashioned gardens, are too often conspicuous by their absence from more pretentious ones.

For the convenience of attention in the way of weeding and

replanting when necessary the formation of beds 3 or 4 feet wide at right angles of the walk, supposing a border to be devoted to the purpose, with narrow alleys between, is probably the best method; and whether the whole space be much or little, a thorough preparation by cleaning and enriching it will eventually give the best results, and save trouble among those perennials requiring no disturbance for several seasons. Our list may well include such herbs as are thought worthy of being found in a first-class garden, although the virtues of some are purely medicinal. *Apropos* of this, I recollect with pleasure an episode which occurred when my herb border, previously mentioned, was flourishing. This was an application made by an old dame, who had trudged some miles across country for a few sprigs of certain herbs now rarely met with, but dear to the heart of old-fashioned people. "If they were to be had anywhere I should have them;" and I had, to our mutual satisfaction.

The choice of position may be given to any border fronting a wall with a south, south-west, or south-east aspect. Commencing our list in the order of merit, such merit being merely a matter of what is in most demand—Mint may be first mentioned. Both Spearmint and Peppermint, being of such vigorous habit of growth, it is perhaps surprising that any difficulty is encountered in their culture, yet there are instances of such being the case, this proceeding from a want of replanting in fresh soil when deterioration is in evidence. To increase the stock, root pieces or cuttings taken in early spring and inserted under glass protection will give good plants for the Mint bed a little later, and some old potting soil or Mushroom bed refuse worked into the soil will insure success for two years at least, after which replanting or a good top-dressing, if exhaustion is imminent, will maintain the supply.

Sage is so freely produced from seed that no better method can be employed if the stock is worn out. Although the green-leaved variety is mostly in demand for culinary purposes, a few roots of red Sage must not be overlooked, an infusion of this being still in high repute as a gargle.

Common Thyme and Lemon Thyme, seeds of both of which will produce a more vigorous stock than from cuttings or division, may, with most herbs of perennial habit, be sown in their permanent position, to be subsequently thinned out; and it may here be remarked that the most satisfactory way of establishing a herb border is to obtain a collection of seeds from any good seedsman, which will generally prove to be as reliable as they are cheap. The same may be said of aromatic plants, and any difficulty which some experience in establishing plants of either is removed by the power of seedlings to adapt themselves to a change of soil or position.

Tarragon, which holds a rather prominent place among pot herbs, and where the necessary stock cannot be obtained by division, will give the best results by raising seedlings under glass early in the season, deferring planting outside until the plants are fairly strong and the weather genial. Marjoram under its two perennial forms, commonly known as Pot Marjoram and Sweet Marjoram, is of easy propagation by division; the more tender variety known as Knotted Marjoram may be included in our spring sowings of those herbs which are either annuals or treated as such.

Basil plays rather an important part in high-class cookery, and the two varieties in general use being annuals, it is not easy to supply the sweet variety, this being in most demand through the winter in a green state. The seed, whilst germinating freely, has a trick of disappointing the grower during the dark days of winter, and I have known the time when more hopes and fears were concentrated in a pan of Basil than in the whole catering of supplies at this season. However, a couple of pans or shallow boxes thinly sown and very carefully tended, especially in watering, will usually meet all requirements, although in respect to its "miffy" character it is as well to have two strings to one's bow by placing one sowing in a cool

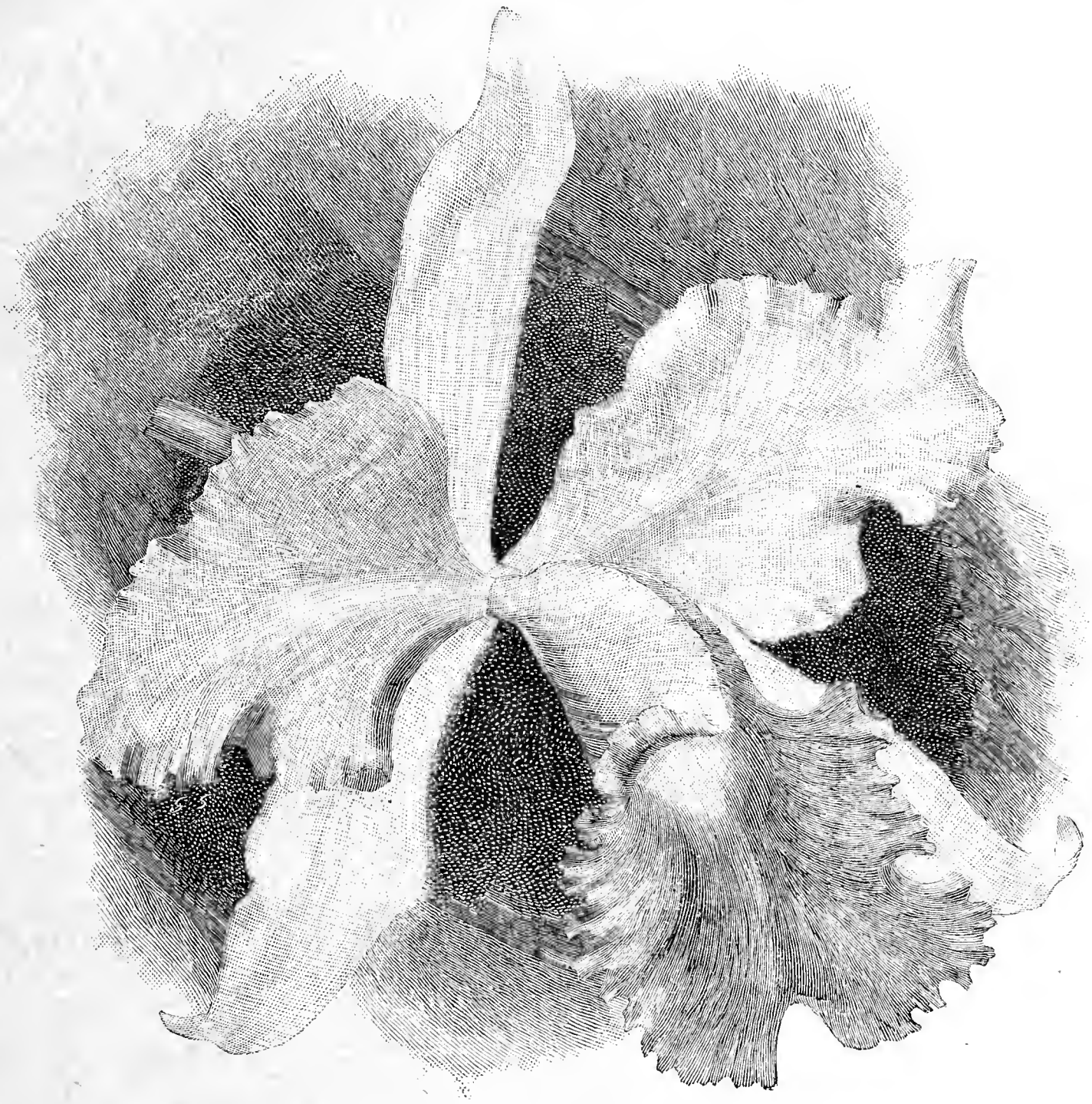

FIG. 88.—CATTLEYA OLIVIA.

house, and the other in a warm one, both fully exposed to the light in an airy position. Summer and Winter Savory, the former an annual, are of easy culture, and call for no special remark beyond that they, particularly the latter, must be regarded as essentials.—HERBALIST.

(To be concluded.)

CHEMISTRY IN THE GARDEN.

(*Continued from page* 522.)

WE saw by Bousingault's experiments that Sunflowers could be grown successfully in pure sand in which a small quantity of plants' ashes were mixed, the same being watered with weak solutions of nitrate of potash. Seeing that these substances contain all the elements of plant food, it would be interesting to inquire of what they are composed, for this ought to teach us what ingredients plants take from the soil as food. Bousingault obtained the plants' ashes he used in his experiments by burning hay. We have before us the composition of the ashes of hay; but before giving them to our readers we wish to draw their attention to the following facts. The plants experimented with grew as well in the sand, plants' ashes, and nitrate of potash as they would have done had they been growing in ordinary fertile soil. This being so, the latter ought to contain the same ingredients as the former. We apply farmyard manure to soils to maintain or increase their fertility, or, in other words, to supply those substances which are removed by growing crops. If the plants' ashes and nitrate of potash contain all the constituents which are needed for the growth and development of plants we shall expect to find the same ingredients in a fertile soil, and also in farmyard manure. If we do this we ought to be satisfied as to the nature of the food of crops.

We will now give the chemical analysis of nitrate of potash, plants' ashes, a fertile soil, and farmyard manure.

100 LBS. OF EACH SUBSTANCE TAKEN.

Constituents.	Nitrate of potash.	Plants' ashes.	Fertile soil.	Farmyard manure.
Nitrogen	13½ lbs.	none	4 ozs.	8 ozs.
Potash	45 lbs.	31½ lbs.	6 ozs.	10 ozs.
Soda...	—	3 lbs.	4½ ozs.	1 oz.
Lime	—	10½ lbs.	4½ lbs.	12 ozs.
Magnesia	—	7 lbs.	2½ ozs.	2 ozs.
Phosphoric acid ...	—	11 lbs.	2 ozs.	5 ozs.
Sulphuric acid ...	—	3 lbs.	3 ozs.	1 oz.
Chlorine	—	7 lbs.	2 ozs.	1 oz.
Silica...	—	27 lbs.	68 lbs.	4 ozs.
Iron	—	traces.	5 lbs.	traces.
Oxygen	41½ lbs.	—	—	—
Carbonaceous matter	—	—	6 lbs.	17¼ lbs.
Silicates of alumina	—	—	15 lbs.	—
Water	—	—	—	80 lbs.
	100 lbs.	100 lbs.	100 lbs.	100 lbs.

Looking carefully at the above analyses we note many things of importance. First of all we find that nitrate of potash contains only nitrogen, potash, and oxygen. When the plants growing in sand were watered with a solution of this substance, it only supplied them with the three ingredients just named. The reason they failed to grow, therefore, was because they had not all the food they required applied to them. The analysis of plants' ashes shows that they contain many of the elements of plant food, but no nitrogen. We know from what has already been said that the plants in the sand and plants' ashes refused to grow only when watered with nitrate of potash. Here, then, we have the whole case clearly explained to us, and are now able to see the names of all the substances needed by crops as food.

Further consideration of the above tables shows us that the very same substances are present in the fertile soil as supplied by nitrate of potash and plants' ashes; but you will also note the small amount of plant food in the former case as compared with the latter. In 100 lbs. of fertile soil we find 68 lbs. of silica and 15 lbs. of silicates of alumina. These substances are present to dilute, as it were, the plant food present in the soil. We know how useless it would be to try to grow plants in wood ashes or nitrate of potash. Bousingault knew the same thing, and therefore diluted his plant food with sand, thereby making it in all respects like a fertile soil, the only difference being he had control (?) of the plant food. Farmyard manure is very similar in composition in many respects to a fertile soil, but here again we find the food constituents diluted with water and carbonaceous matter. The latter, however, by its decay gives off many acids, which renders the medium *per se* undesirable for plants' roots; nevertheless, we all know, as practical gardeners, that good farmyard manure is the best, cheapest, and safest of all the substances we can apply to soils to make them fertile.—W. DYKE.

(To be continued.)

NATIONAL CHRYSANTHEMUM SOCIETY.

ON Monday evening last the General Committee of this Society held a meeting at Anderton's Hotel, Fleet Street, Mr. T. W. Sanders occupying the chair. After the usual preliminaries had been disposed of it was resolved that the proposed meetings of the Floral Committee for next season, which had been fixed for November 28th and December 12th, should not be held.

Letters were read from Mr. G. S. Addison and Mr. J. W. Moorman resigning their positions on the Committees of which they were members; the former, on account of pressure of local municipal work, was accepted, but the latter was requested to reconsider the matter.

The report of the Schedule Sub-Committee was then presented, a class being proposed for twelve vases of specimen blooms Japanese, distinct, with five blooms each, each bloom standing 1 foot above the top of the vase. The prizes proposed are £20, £15, £10, and £5. There was much discussion on this innovation both *pro* and *con*, the principal speakers being Messrs. E. Beckett, Gleeson, Waterer, Bevan, Mease, Lyne and Lees. It was also announced that the Royal Aquarium Co., in commemoration of next year's show being the twenty-first held by the N.C.S. at the Aquarium, had decided to offer a special sum of £30 for prizes in the class for twenty-four Japs, distinct—viz., £8 and a gold medal for the first, £6 for the second, £5 third, £4 fourth, and £2 fifth.

The election of judges then followed. For the September show they are Messrs. W. Higgs and W. Wells; October, Messrs. Langdon and Cutbush; November show—plants, Messrs. Prickett and Reeve; incurved blooms, Messrs. Geo. Gordon and C. Orchard; Japanese, Messrs. E. Beckett, E. Molyneux, T. Bevan, and C. Gibson; table decorations, Mr. J. Hudson and Miss Pemberton; fruit, Messrs. Owen Thomas and J. Roberts; vegetables, Messrs. J. Willard and W. Fife. Those appointed for the December show were Messrs. R. Kenyon and P. Waterer. New members were elected, and the Dundee Chrysanthemum Society admitted into affiliation. The Secretary stated that since the 1st January the following additions to the list of membership had been made:—Fourteen Fellows, 114 ordinary members, and eleven societies. The meeting was a busy one, and broke up somewhat later than usual.

THE BONDAGE OF THE N.C.S.

THE Secretary of the N.C.S. warmly accuses me (page 580) of "rashly rushing into print." I am certainly no more precipitate in this instance than himself, for our first letters on the subject appeared simultaneously in your issue for December 9th, and in the last issue a second letter from him appears, so that at the present time he has written two letters to my one.

Quotations from the Society's audited balance sheet (which is the property of every subscriber) should require no "verifying," and I challenge Mr. Dean to disprove by actual printed facts that I have been guilty of any "imperfect" or "erroneous" statement. The quotations I gave are the exact amounts appearing in the printed balance sheet for the past year, and Mr. Dean's figures are nowhere to be found in that balance sheet.

Mr. Dean admits that the £50 he places in his letter to the credit of the N.C.S. for the September show "is not credited to the Society's funds." That being so, what right has Mr. Dean to infer that my statement is wrong, and to himself add as an asset an amount which is not given to or allowed to benefit the N.C.S.? The N.C.S. has nothing to do with an arrangement made for the benefit of any other organisation by its directorate as between themselves and an acrobat, or the owner of a performing donkey. My bump of "observation" may indeed be but "superficial." Nevertheless I can assure Mr. Dean that I am not without some knowledge and trained experience of the many little details and necessary incidental expenses attending the holding of an exhibition of some magnitude.

But in whatever light my observations may appear to the Secretary, I have still the boldness to question the unreliableness of the amount given by him in his "low estimate" as indicating the indirect advantages rendered by the Royal Aquarium towards the N.C.S. Anyone can add a rough system of figures together so as to make a balance appear on either side as may be desired.

Has Mr. Dean no precise data to work upon in order to determine the amount which he puts as the "cost of the four exhibitions to the Royal Aquarium Society?" His letter suggests that he has not, or surely we should have had the facts. An argument founded on an "estimate," and this estimate, for all he has shown, based on an inference, cannot rest on a very firm foundation, and yet he says that "he has placed the cost of each show at considerably less than that which would have to be borne by the N.C.S., did they have to defray the whole amount." To say that it costs the Aquarium authorities £75 for management expenses for each September exhibition, beyond what is charged to and paid by the N.C.S. to award only £20 7s. 6d. in prizes for Chrysanthemums, is beyond my comprehension.

The fact is, the Committee know little or nothing of the workings of

this meeting, and the only argument I have heard in favour of it is that it induces the Dahlia enthusiasts to remain subscribers to the N.C.S.

Again I ask, Can anyone credit that the prettily arranged and snug little December show, held about three weeks since in the eastern gallery, could have cost the Aquarium management £75, in addition to what is charged and paid by the N.C.S.? If Mr. Dean will persist in upholding this statement, every unbiased person must characterise his opinion as obviously absurd. Did it cost the management a tenth part of what he now states? Great stress is also placed on the cost of hire of tabling and baize. Tables for this purpose are commonly made from floor boards, which cost a few shillings per square, and everybody can calculate how far each square of 100 feet will extend. It is unreasonable to suppose that any established organisation would hire them on every occasion, any more than ourselves would think of hiring our necessary garments, instead of buying them first hand. Even the cost for staging may be further curtailed if trade exhibits were not so much sought for, and the charges now made for space allotted would mainly be forthcoming as extended subscription to the Society in another form.

But assuming, for the purpose of this letter, that he is correct, and that the amount stated by him—viz., £375—actually represents the necessary and therefore legitimate expenses that must be incurred annually by the N.C.S. in order to carry out the details of a series of exhibitions (if the Society were dependent on its own resources only), what then? Surely that £375 must be added to the heavy expenditure already incurred! and again, what then? Would not the Society find itself in the unenvious position of having not only spent all its balance and reserve fund, but in debt to the tune of £259 11s. 2d.?

Is this the position that Mr. Dean wishes the subscribers of the N.C.S. to feel the Society would be placed in were it not for the indirect timely assistance of the R.A. Company? If this is to be our position, then the sooner the Society is put upon a safer and surer footing the better for all concerned, and a great number of your readers must think with me that it was but a mere "figure of speech," flavoured with self praise, that led Mr. Dean to say that the N.C.S. was "maintaining an entirely independent autonomy as the best administered floricultural Society."

It seems to me that instead of proving the independence of our National Society the evidence that he now adduces proves more clearly than I had hitherto thought could be proved so well—its "bondage."

In the same letter this not "rash and superficial" Secretary tells us that he "alone perhaps knew the full extent of the valuable assistance directly and indirectly contributed by the R.A. to the N.C.S." Mr. Dean in penning those lines was, I presume, writing on behalf of himself, not on behalf of his Committee, and certainly not with their sanction, for to have obtained this it would have been his duty, as Secretary, to have imparted his knowledge at their meetings.

Then not he "alone" would possess it. Surely the committee of any society is entitled to the knowledge of its secretary on matters affecting its policy and management. It is clear that the members of the N.C.S. Committee do not know everything about its affairs, or Mr. Dean's words have no meaning.

Does Mr. Dean know what the R.A. gains yearly by the gate money? He asserts "that it attracts to the Aquarium yearly thousands of persons to see the Chrysanthemums." All other writers agree with him. If any fixed and reliable number can be given, then both committeemen and subscribers to the N.C.S. will be able to judge for themselves, not as to the arrangement being "mutual, friendly, just and honourable," for that is not the question, but whether it is equitable. Reports tell us that the Birmingham November Show was visited by 32,000 persons, Edinburgh by 40,000, and that the Aquarium was crowded to excess and inconvenience. If 40,000 persons visited *one* show in Edinburgh might not an equal number be expected to visit *four* N.C.S. shows in London?—J. W. MOORMAN.

I AM disappointed. When I read Mr. J. W. Moorman's letter I was agreeably surprised, and thought, "Well, after all, there is hope for the N.C.S., and a few more with the spirit and sturdy independence of Mr. Moorman, the Society may have a greater claim to be considered national;" but, alas! my hope was a vain one, for, from the Secretary's letter, I now learn that Mr. M. has ceased to be a member of the Committee of the N.C.S.* I am afraid the real loss to the N.C.S. is considerable and irreparable.

It has already been pointed out in the columns of the *Journal of Horticulture* that the Secretary of the N.C.S. does not intend to allow the exhibition to be held in any other building than the Aquarium, for more reasons than one about the worst place for a Chrysanthemum show, and unfortunately with the Secretary there are enough of the Committee, who are his willing slaves, who dare not go against his wishes. What a gain to some of the trade exhibitors if the shows could be held in any other building than the Aquarium, for it is beyond dispute that the upper classes will not honour the shows there with their presence.

We are told that if the N.C.S. left the Aquarium the Directors of the Company would institute an exhibition of their own. Well, let them—and if they make it a success it would say very little for the management of the N.C.S. Should such a thing take place will Mr. Dean inform us where the balance of about £1300 is to come from?

Further, if it would pay the Aquarium Directors to run a Chrysanthemum Society on their own account, and of course finding their own prize money, it certainly proves that they are making a good thing out of present arrangements, when advertising, stationery, judges' fees, Secretary's salary, and others, to the tune of something near £1000, is paid for them. Mr. Dean wishes us to believe that he could not bear a share of the financial responsibility which a shift to another building would entail, adding, "that if anyone could have placed in their hands the details of the actual cost of such an exhibition as that held at the Royal Aquarium in November last, and see that all dependence for any return of the same was on the uncertain taking at the gates, they would then understand why I would decline entering upon any of the risks they appear to desire the N.C.S. should undertake."

Will Mr. Dean kindly inform us how other shows manage and have a good balance in hand? and he certainly does not ask us to believe that the Aquarium, by paying the N.C.S. the paltry sum of £500 for the three shows, and taking all the gate money, removes any portion of the great responsibility which rests on the N.C.S. at the present time. In referring to the great assistance given by the R.A. Mr. Dean says:—"I alone, perhaps, know the full extent of the valuable assistance directly and indirectly contributed." In reply to this I would like to ask, "In what way, Mr. Secretary?"—A. B. C.

* See report of N.C.S. General Committee on page 604.

THE OBJECT AND OBSTACLES OF THE N.C.S.

THE object of the National Chrysanthemum Society, as stated in its rules, is *to promote the cultivation of the Chrysanthemum*, but it would appear from the correspondence in your Journal that the principal care of the executive is to hold Chrysanthemum shows at the Aquarium at Westminster. I am led to this conclusion by observing that the letters of the Secretary and members of the executive ignore the repeated expressions of opinion as to the disadvantages of holding the shows there, but are profuse in their expressions of laudation of the benefits which the Society enjoys through its connection with the place. On reading their letters those who look below the surface will perhaps be of opinion that the words of the immortal bard, "Methinks the lady doth protest too much," may not inappropriately be applied to them.

I have visited our Society's shows for years past, and conversed with many of the members and also the executive. I find there are very few who do not find the place objectionable. Why, then, do violence to the general judgment by describing in such glowing colours the admirable adaptation of the Aquarium for the purpose? Viewed in the light of the almost universal opinion to the contrary, the grandiloquent letter of the Secretary, appearing in your issue of the 9th inst., borders on the grotesque.

The only really good reason I have yet heard advanced in favour of the Aquarium is the difficulty of finding another suitable building; but it appears from Mr. Moorman's letter that no genuine effort has been made to find one. Better far let the executive concentrate their efforts by honestly grappling with this question than alienate the friends of the Society by arguing against the general opinion. A society which annually draws from its members and the affiliated societies over £400 can afford to take higher ground than to be dragged at the tail of the Aquarium authorities.

The Secretary's letter appearing in your issue of 16th inst. lays great stress upon the vexations and worries and incidental charges inseparable from carrying out a large flower show. With his great experience I have no doubt the management of the show has by this time been reduced almost to an exact science, and vexations and worries have become a minimum quantity. I do not write as a superficial observer, but as one who has very closely observed the management of shows, both large and small, and I am convinced that these vexations and worries do not depend upon the size of the show, but are present in proportion to the absence, or otherwise, of a proper system of management; and as to whether a proper system can be best carried out in a place like the Aquarium, hampered by the presence of strangers, or in a place all our own for the time being, I leave the members of the N.C.S. to judge.

As to the cost of 5000 superficial feet of tabling, which our worthy Secretary essays to frighten us with, I find that this works out to nearly one-third of a mile of tabling 3 feet wide! After allowing 300 lineal feet for the decorative single and Pompon classes, there is sufficient space left to exhibit 8000 blooms on the orthodox boards. Was there half this number shown at the last November exhibition? The vegetable and miscellaneous classes are a source of attraction to some; but to return to my text. "*The cultivation of the Chrysanthemum*" is the object of the exhibition, and if extraneous exhibits stand in the way it is a fair subject for discussion whether they should be continued in such numbers as heretofore.—MEMBER OF THE N.C.S.

[A member, too, who has done yeoman's work in promoting the cultivation of the flower he loves.]

THE FETTERED N.C.S.—A HORTICULTURAL HALL.

ALL the controversy respecting the N.C.S. and the Royal Aquarium is tending to show what an ill-adapted and unpleasant place it is in which to hold horticultural exhibitions, and the disappointing amount of money the Directors offer the Society, compared with what is actually received at the turnstiles. This has been forcibly debated in the *Journal of Horticulture* recently, and in my opinion the discussion is most desirable, for it emphasises the humiliating fact that there is at present no suitable central place in London for horticultural exhibitions. It seems to me the only real remedy for existing grievances and for insuring future success is to set to in earnest, find a site, and erect a building, temporary or otherwise, over which horticulturists may have full control.

The scheme for a horticultural hall (similar to what is in existence in many cities in America and on the Continent), which I suggested several years ago, was most favourably received by the President, Council,

and also the Committee of the Royal Horticultural Society. Thousands of pounds were promised, and I sincerely hope those promises still stand good. If I am not mistaken, one gentleman offered to give £5000 if a similar sum was subscribed by a certain time, but unfortunately just then matters in the financial world were unfavourable, and great depression in business existed. It seems to me that a most opportune moment has arrived for the revival and carrying out of that or a similar scheme.

If a powerful and influential committee were selected from the National Chrysanthemum Society, and if our highly esteemed President, Sir E. Saunders, could be induced to act as spokesman, offering our cordial support to the President and Council of the Royal Horticultural Society, the whole matter could be discussed, and the feeling of kindred societies and the public generally be ascertained. The Rose, Carnation and Picotee, Auricula, Narcissus, and Cacti Societies continue to hold their shows at the Drill Hall, and I feel sure the National Chrysanthemum Society would be received with open arms by the R.H.S. if the building were large enough, as of course it is not, without that chartered body wishing to exercise any control whatever over internal arrangements of the N.C.S.

I am both willing and anxious to co-operate in assisting to bring something of the kind prominently before the public. Unity is strength, and it seems to me if the united strength of all the kindred societies now existing in London could be secured, and pay proportionate sums, on an equitable basis, towards the interest on borrowed capital (if such a course were deemed necessary), there is no reason why we should not have a home of our own, and not remain in lodgings for ever. I think we might reasonably count on something like the following income, each society, of course, taking its own gate money :—

Royal Horticultural Society	£400 per annum.
National Chrysanthemum Society	200 ,,
National Rose Society	100 ,,
National Dahlia Society	100 ,,
Carnation and Picotee Society	50 ,,
Auricula Society	25 ,,
Cacti Society	10 ,,
Letting the hall for horticultural business committee meetings	100 ,,
Letting for other approved purposes ...	1000 ,,
Total	£1985 ,,

This, at 4 per cent., gives a borrowing power of nearly £50,000.

If the Council of the R.H.S. would favourably reconsider the suggestion, and all kindred societies cordially support such, or a similar scheme, it seems to me we can well picture phœnix rising boldly out of its own ashes, and British horticulture going on in rapid and harmonious strides. It certainly is an undisputed reproach that horticulturists do not possess in the City of London a building large enough to hold even an ordinary flower show ; and, in my opinion, it is now quite time we did. I ask one and all if the time has not arrived when this hall should be begun.—H. Cannell.

After the perusal of several contributions on the affairs of the N.C.S. and the R.A. Co., I cannot come to any other conclusion than that the Secretary's remarks are laboured and put out of court by the temperate statement of facts and figures from Mr. J. W. Moorman. I observe that a section of the N.C.S. have dared to threaten a split with the view to have shows under the management of the R.A. Co. if the shows of the N.C.S. were transferred elsewhere. The futility of this threat becomes ludicrously apparent through the total of the expenses incurred in 1896 by the N.C.S., which the R.A. Co. would have to be responsible for should the said section of the N.C.S. subordinate its independence to the dictates of the latter as the result of a schism. If this is not slavery with a vengeance as correctly designated by "A. D." and others, I should like to know what is.

The threat alluded to does not seem to be dictated by consideration for the N.C.S., but from motives of separate interests unconnected with the continuation of a victorious career of this Society, for which all its members are supposed to strive. If prosperity of the N.C.S., to which the Secretary refers, be a potential power, certainly the examples of the successes of provincial societies would positively prove that separation from the R.A. Co. and its "attractions" would induce the general public of our huge metropolis to assemble in their thousands for the main and only true enjoyment intended, represented by the fostering of the spirit of horticulture, and as a superior aim to the distractions that disturb this result.

The evils of darkness attaching to the locality chosen for these shows I will not further discuss, and I must add my belief that those members of the Society who know of no better reason than that the show has been held there for twenty-one years in order to continue so are not its true friends.

However, to consider the other side of the question - practical suggestions for amelioration. The idea of "A. D." of transferring the shows to the Royal Agricultural Hall deserves all the praise of something better, if the best, a central site, be unobtainable. It would be considerably better than a lesser evil, and ample attendance would soon dispel the notions of any adversaries of this scheme.

But why stop here? Let us admit the unimportance as to the locality of the shows for a year or two while a "Temple of Horticulture" be created, befitting the richest city in the world, in a central site, and be enthusiastically supported by the N.C.S., occupying the most influential place among special floricultural societies. The Royal Horticultural Society will be certain in its strong aid and power growing annually in an accelerated ratio as the general love of horticulture expands, and trust should be placed in such evidences. If practically and properly attempted many purses will lend their aid, and more readily now in consequence of the outspoken condemnations of the accommodations actually existing.

What will posterity say of the niggardly spirit of this city towards a truly elevating object on the threshold of the twentieth century, to have wasted its opportunity and missed to secure a central and worthy site for the Temple of Horticulture before the rapidly decreasing areas for such a purpose be otherwise appropriated? Is it even too late to begin resuscitation of the project, twice before attempted and dropped? The very vastness of our metropolis renders a central site alone acceptable, and certainly the fitness and felicity of choosing this moment, one—the few remaining ones—of this the Queen's Jubilee, should accelerate action. It can be only a matter of time as to the creation of a true temple, and the opportunity seems good with the scrupulous care by the rules of all nations to leave the peace of the world undisturbed, and commerce adding vast riches to our nation's pockets quite on a par with the colossal edifice of the Empire. Are the pockets of those blessed with riches only capable of appreciation of the handicraft of mere man in their creation of temples for picture gatherings and their contents, leaving the handicraft of the Almighty, His sublime creation of flowers that no human art can attain, to shift for themselves?

Flowers appeal to sympathy and sentiment, and their "practical" aspect is only half the battle. Let the true and existing sympathy be appealed to in such forms as experience may suggest, and let us see whether we cannot create a "Temple of Horticulture," where also could be shown to, and seen by all, our transmarine cousins when arriving in their shoals to have a look at the old country, the gathering from the horticultural world of the empire, emblematic of its extent, as is done through collections in other branches made independently.

In view of such a development, I should like in reference to Chrysanthemums to see the tendency arrested towards ever larger and larger blooms, running the risk of bordering on the coarse. The public taste is thus diverted from real beauty into a mischievous direction, and the craving for sensational sizes must soon pass the limits beyond which all claim to beauty is forfeited.

Two attempts at creating a central hall have failed, let us have faith in the mystic symbol "three" as of good omen.—H. H. R., *Forest Hill.*

P.S.—A portion of this letter was sent five weeks ago to another paper, and now I see printed at this belated hour with one from Mr. Cannell.

[Mr. Cannell's letter appears above. It arrived too late for insertion last week.]

Late-flowering Japanese Chrysanthemums.

At the recent winter exhibition of the N.C.S., which was most interesting, I made note of the following varieties which were represented by good blooms ; as a guide to those who require large blooms at so late a period of the year the selection may prove useful :—Golden Gate, bronze yellow, belongs to the section known as reflexed Japanese ; General Roberts has petals of the type of Mrs. F. Jameson, red, shaded carmine ; Duchess of York, rich yellow in colour ; George Seward, buff and bronze with a suffusion of red ; Mutual Friend, ordinarily white, but so late exhibiting a tinge of pink at the base, a remark applicable to Mrs. W. H. Lees, which has more curly florets, and shorter than when earlier developed ; Mons. Chenon de Lecbé appears to have been a great success this season, whether early or late ; Louise, fresh and neat ; Bellem, ordinarily is a bright pink in colour, is now nearly white, the narrow florets building up a large bloom of much substance ; Elmer D. Smith, rich cardinal red ; Madame Carnot, apparently as good for winter use as for early November ; Julia Scaramanga (depicted on page 555), bidding fair to become a leading variety ; Rose Wynne, faintly flushed pink ; Edith Tabor, rich yellow ; Mrs. C. Blick, pure white ; and Beauty of Castlewood.

Chrysanthemum the Queen.

Cultivators of Chrysanthemums are generally glad of information respecting any good variety suitable for early or late flowering. When one especially valuable for providing blooms in quantity during the latter half of December is found the joy is the greater. After a two years' trial with the variety here named I am pleased to say it is one of the best for the latter purpose. Cultivated in the ordinary way to produce exhibition blooms, three on a plant, it would be classed as a Japanese incurved, white, with just a tinge of colour suffusing the lower florets. Grown to produce blooms in quantity the colour is pure white, the petals erect, or nearly so, with perhaps a leaning to the reflexed type of bloom. Where so many varieties fail as decorative sorts is in the weakness of their peduncles. If blooms do not stand erect without artificial support they lose much in value. Especially strong in this respect is the Queen, and therefore the more valuable.

Cuttings inserted early in January, the plants allowed to grow uninterruptedly without interference with the shoots, will produce numerous clusters of bloom of from four to six each. How I purpose to manage this variety next season is to plant out the old stools in April in some open position in the garden, top the shoots once, afterwards allow them to grow at will, repot at the end of September, and bring the plants on in a cool house as desired.—E. Molyneux.

Timing Chrysanthemums.

Please allow me to correct an error on page 582. The sentence reads, "I have mismanaged old ones this year," which should have read, "I have mismanaged *odd* ones this year." W. Bowman.

Chrysanthemum Mrs. Caterer.

This is a pure white Anemone-flowered variety, valuable for decoration on account of its freedom in flowering and purity. In clusters it is very useful; the peduncles are stout, supporting the blooms quite stiffly.—E. M.

Chrysanthemum (Red) L. Canning.

At the recent show of the N.C.S. this late flowering variety was represented by a full box of blooms in clusters. It is said to be a seedling from the well-known L. Canning, one of the best of white flowered varieties for cutting during December, January, and February. It is a counterpart of its parent in all but colour. This is a rich dark red, especially bright under artificial light, and one that should become immensely popular on account of its colour alone.—E. M.

Yellow Charles Davis.

I must thank your correspondents, Mr. J. Folkard and "E. M.," for their information *re* "Sport from Charles Davis" (page 556). I am quite aware that both Viviand Morel and Charles Davis will come very light coloured on the crown bud, having grown them so myself, but I have never seen a pure white Viviand or a yellow Charles Davis. In saying this I do not in the least doubt the truth of your respected correspondents' assertions. Another year will decide the question, as I am rooting cuttings of it, and will grow flowers from terminal buds, also crowns, and if it comes yellow on the terminal it will be a decided acquisition to the family.—R. M.

Staging Chrysanthemums at Shows.

One would assume, from the remarks of an "Old Exhibitor," that there is a danger of societies substituting the tall stem classes entirely for the stand method of staging cut blooms. Such is not the case by any means. My contention is that if committees provided classes for vases, as well as for the ordinary method of cups and tubes on stands, they would create increased interest. I do not think twenty-five exhibits could be found in a class for twenty-four Japanese blooms, distinct, if they were to be set up on long stems in vases. It is not reasonable to expect so many merely for the sake of gaining a point in an argument. I know sufficiently well the difference in transit occasioned by the two methods to attempt to say the long stem principle could produce as many. I should be much surprised, also, to find that all of the twenty-five exhibits in that particular class were creditable. Generally, where so many compete, there are some little removed from the mediocre status. I repeat again, the wish to compel all exhibits to be on the long stem principle is far from my conception. Let us, however, have as much variety as possible, some of which is provided by staging blooms on stems in vases.—Sadoc.

A Select Twenty-four Japanese Chrysanthemums.

I have no doubt but that everyone interested in Chrysanthemums have their favourites, and where such is the case there is necessarily some bias. Perhaps I am no more free from such bias than others, but I try to have none, and am not a grower. I rather have made my selection from flowers I have seen in the best collections growing, and in the exhibition stands at shows. Deductions from mere numbers exhibited of diverse flowers are of little value in making a specially choice selection, because these figures merely represent abundance in cultivation, and not necessarily the best. How often do we see superb flowers in non-winning stands that fail because they also contain inferior flowers. I much prefer to make selections of the finest shown, whether old or new, based on the merits of the flowers as seen at various shows, or under varying conditions.

Many of the finest blooms of the passing season were found in limited numbers; but they will be far more numerous next year because they are of the best. In making a selection of twenty-four blooms some consideration must be given to variations of colour as well as of quality of flower, hence too many whites or yellows, the dominating colours, rather weaken than strengthen a selection, let the varieties be ever so good. The select whites are fine; Madame Carnot, Simplicity, Madame Gustave Henry, Miss Elsie Teichmann, and Mrs. H. Weeks; yellows: Australian Gold and G. J. Warren, pale; and A. H. Wood, Phœbus, Modesto, and Georgina Pitcher, rich. Then come N.C.S. Jubilee and Lady Isabel, mauve shaded; Viviand Morel and Australie, pink; Papa Veillard, rosy carmine; Lady Hanham, rosy cerise; Mons. Chenon de Leché, rosy buff; Charles Davis, rosy bronze; Mons. G. Biron and La Moucherette, reddish bronze; Lady Ridgway, salmon buff; and Edwin Molyneux and Pride of Madford, crimson.

I should be very pleased if readers who have no special interest in any variety, new especially, would criticise this selection, and thus see how far it may be possible in the end to evolve for the benefit of those who wish to know what is a perfect twenty-four. Whilst generally I regard the tasselled varieties, such as Madame Carnot and Viviand Morel, as presenting the most pleasing flowers, yet I have included a fair number of incurved varieties, whites and yellows, the dominant hues, and giving so many grand flowers certainly should not exceed one half of the twenty-four.

My selection of these is just under, but so great are their merits, still leaving outside so many fine varieties, that it is difficult to do with less. Such varieties as N.C.S. Jubilee, a grand mauve shaded incurved, and Papa Veillard, rosy carmine, tasselled, are probably little known, but they will be no doubt in great request. Mr. N. Molyneux's seedlings, especially Mrs. N. Molyneux, will probably be much sought after, and there is a host of French varieties in store that have not yet shown their true characters. Intending purchasers, however, are chiefly concerned with proved varieties, and few of those in the list given above have not failed to make their mark. Every year, because of the great influx of new varieties, the selection of about twenty-four will become all the more difficult.—A. D.

EDWARDSIA GRANDIFLORA.

Amongst the many beautiful plants which British gardeners owe to Sir Joseph Banks must be included this, with several other members of the same family, all shrubs of more or less elegance. Though plants are usually grown in pots, they have been successfully grown out of doors, and in positions against a wall where they are not too exposed they usually

Fig. 89.—Edwardsia grandiflora.

escape damage, even during the most severe winters. When grown in pots a compost of turfy loam, peat, and sand—the former in the largest proportion—is required, and in the greenhouse and conservatory the plants will grow and flower freely. Edwardsia grandiflora (fig. 89) was originally known as Sophora tetraptera, under which name it was figured in the "Botanical Magazine" in 1791. In the remarks accompanying that a tree is mentioned which was planted against a wall in the Apothecaries' Garden, Chelsea, by Mr. Forsyth in 1774. This, it is said, grew strongly and flowered most abundantly; but the plant was protected with mats in severe winters. The leaves are very neatly pinnate, having eight or nine pairs of small pinnules, which are whitish on the under surface and green above. The flowers are of a peculiar yellow hue, the calyx being darker and somewhat brownish. Edwardsia chrysophylla, from the Sandwich Islands, has flowers of a similar shade of yellow and somewhat similar in form, but the leaves have a greater number of pinnæ, and are of a silvery colour on the under surface.

Trade Notice.—Mr. A. A. Hutty, late head gardener at Watergate Emsworth, has taken Park Hurst Nurseries, Pitcroft Road, Portsmouth, where he will carry on business as nurseryman, seedsman, and florist.

SERVING THE KITCHEN.

I CONSIDER that this subject embraces one of the most important connected phases of a gardener's work. He usually devotes his energies, and employs all the appliances at his command, to produce a supply of edible fruits and vegetables for his employer's use. But when they are produced, no matter how excellent the quality may be, the grower's part is not finished until such produce has been sent to the kitchen in the best possible manner, and it is with this aspect of the question that I purpose to deal, and I shall make the notes apply to a medium sized establishment, where both luncheons and late dinners are the rule, and where from eight to a dozen servants are kept. Such a place takes a fair amount of time and close attention, let alone patience, to supply the kitchen properly.

In no two places are the arrangements for serving the kitchen exactly alike. In some this duty is relegated to an old, decrepit labourer who knows how well enough, but is past the work. In others the boy just from school is sent to the work, while in a third the garden woman does the work, and this I consider an objectionable arrangement. In my opinion one of the young men, who fully intends following gardening as a profession, ought to be made responsible for this department. Some gardeners may dissent from this view, but it is an excellent course of training for a young man for at least one year. It gives him a better idea of the wants of an establishment than he could otherwise obtain, and if he does not take the utmost care he will soon find what a well-seasoned tongue a cook possesses.

It does not signify what the arrangements are, if the person who has the work to do is not well supported by his chief, and every facility provided for the proper management of the work. In the first place the man in charge of the kitchen should go about his business in a straightforward manner, and always be as tidy in his appearance as circumstances will permit. I know it is not the cleanest part of a gardener's duty gathering vegetables, neither does gathering Gooseberries improve a good suit of clothes. At the same time it is essential that the young man should not be a fop, for there is a happy medium.

An adequate supply of suitable baskets ought to be at command, those made of strong white willow being the most serviceable for carrying the cleanest vegetables to the kitchen. What are termed "skeps" are the best for gathering vegetables from the garden and for carrying Potatoes. Small round baskets are ever in request, and plenty should be provided, and when finished with for the day should always be put in their proper places, so that if one were wanted, even in the dark, it could be found. A shallow tub should be provided for the washing of Carrots and other roots, and it will be found a great convenience if a shallow receptacle is at disposal in which to place Cauliflowers for their preservation when the supply is larger than the demand. They can be cut with a long stem, and if placed in about 2 inches of water will keep perfectly fresh for several days, and possibly prevent an awkward break in the supply.

In many establishments it is no light task to serve the kitchen owing to the great distance of the residence from the gardens, and entails no small amount of labour. In such places the man needs to have all his wits about him, or he will cause himself a great amount of endless trouble and waste a lot of valuable time. In well managed houses he will always know what to take with him on the first journey each morning, and if the cooks are worthy of their position the work can be very much simplified. For instance, during the small fruit season Gooseberries and Currants can generally be ordered the day before they are required.

In the store rooms, or other places that are provided in connection with every kitchen, receptacles should be provided wherein to place Potatoes and other vegetables so as to avoid confusion. By having such conveniences the man knows where to place his vegetables and the cook to find them. It will generally be found best to keep a small stock of Turnips and Carrots ready for the cook, but never allow any vegetables to remain when they have become stale. A drawer fitted with compartments should also be provided in which to keep dried herbs, such as Sage, Thyme, Mint, Tarragon, Marjoram, and any others that are in stock. A good supply must always be in reserve carefully labelled and ready for use. When small culinary fruits and Green Peas are in season it will be a busy time, especially on a Saturday, for on that day a double supply should always be taken in ready for Sunday use. I have frequently commenced at six o'clock on a Saturday morning during the season above referred to, and have been kept going as hard as possible until twelve o'clock.

Now a few words regarding size of vegetables for the table. Some people appear to have an idea the larger the better; that is a mistake. For instance, of what use are the big Onions we see and hear so much about for general purposes, when they weigh from 2 to 3 lbs. each? True, they would do for Onion porridge, but if you took such in to some cooks you would find perhaps 4 ozs. of one used and the remainder thrown away. With Cabbages medium sized hearts are far more preferable than very large ones. My opinion regarding Cauliflowers is that one about 6 inches in diameter, as white as snow, is better than one twice the size, and is also much more easily protected from sunlight, rain, and frost. In the case of Savoys the small compact heads of the Dwarf Ulm type are more useful than the flabby Drumhead section, but I have found Dwarf Ulm is no use for market work. If we would have the best quality in vegetables we must have medium size; hence the lesson.

Never let the kitchen authorities have the slightest idea of any one thing that is in season if you can possibly help it, or you will be asked for it every day, whereas if you have plenty you can rest perfectly assured you will not be very much troubled. I well remember one place of which I took charge. There was only a small quantity of Artichokes in the garden, and I was asked for them two or three times each week. The next season I remedied that fault and provided plenty, but very few were then required. Always aim at providing plenty for each day's supply, but do not allow any waste if it can possibly be avoided.

One frequent cause of friction is taking vegetables, such as Peas, French and Runner Beans, into the kitchen too old. This is a great mistake, though I know it is somewhat difficult to always prevent a pod of Peas slightly too mature from finding its way into the basket. The test for Runner and French Beans is a very simple one. If a pod will snap in two without leaving any string it will be tender despite what anyone may say to the contrary.

In some establishments the kitchen garden is too small for the requirements of the family and it falls very heavily on the gardener in charge; but if he has any natural resources it will bring them to the front, and he will endeavour to supply his employer's tables, with an occasional dish for the servants. In many cases that cannot be accomplished every day, and here is an opportunity for the man whose duty it is to serve the kitchen. If his heart and mind are in his work he can save his chief a large amount of anxiety by noting how the supplies are holding out. If there are plenty then acquaint the cook and they can be used in the servant's hall, and if supplies are falling short acquaint the chief. Take Potatoes, for instance. The full supply of these can seldom be produced in the kitchen garden proper, and in some cases have to be bought in. Of course, this is part of the gardener's duty, and the man in charge of the kitchen department should always remind his chief before the stock is too low.

A few remarks on packing vegetables for the family when in town may perhaps be serviceable to some, as this is a duty that all gardeners have to perform. Always commence with the heaviest and bulkiest vegetables, placing these at the bottom of the hamper. If the packing is done during the Pea season these may be placed in amongst the other vegetables, thus filling up all crevices. It is well to remember that the firmer all such things are packed the better they will travel. It will also be advisable to keep a list of all things sent to town for family use, with quantities on each date, as in certain cases it is apt to prove a valuable safeguard.

I have endeavoured to place a few hints before you that I have found useful in practice. It is impossible that every gardener can be in charge of such an establishment that I have essayed to sketch. Many may be in larger, where the requirements are far more extensive; but, as in every other walk of life, the gardener wherever his lot is cast must of necessity adapt himself to circumstances, and if he happens to be only single-handed he will find the small things as needful in their several places as the great ones. To the young man who is just entering upon a gardening career I would say, By all means serve the kitchen if you possibly can. There will be hints and information to be gathered that will be of the utmost value in after life. Note down each day what has been supplied, and go about your work with a will that would impress even a stranger that you were in earnest. I think if you do this you will not remain on the bottom rung of life's ladder, though perhaps circumstances will prevent you climbing as high as you would desire. Nevertheless, ever bear in mind it is the strict attention to trifles that ultimately achieves success.—(*A paper read by* MR. J. WILKINSON *at the Hessle Gardeners' Mutual Improvement Society.*)

SUDBROOKE HOLME.

THIS is the winter home of C. C. Sibthorp, Esq., a gentleman whose generosity is well known and appreciated by the inhabitants of Lincoln and the surrounding villages, who have the privilege of visiting the well-kept grounds during the summer time. The charming park contains many fine specimen trees, and is surrounded by woods and game preserves. In one part is a large ornamental lake, to which the public are admitted free in frosty weather for skating. That Mr. and Mrs. Sibthorp study the interest of their employés is proved by the substantial and convenient residences on the estate for their head servants, and their universal kindness to all.

Within recent years the pleasure grounds have been greatly improved by introducing a choice collection of shrubs, both evergreen and deciduous. Among the latter Acers, Prunus, and Elders in variety have been arranged to produce effect, and the colours to harmonise with other plants and trees. There are an extensive Italian garden, Alpine rockeries, long borders of herbaceous plants, with a hardy fernery beneath the shade of magnificent specimens of Weeping Elm and Weeping Beech trees, all of which are much admired when in their season of beauty.

The kitchen garden, of 11 or 12 acres, is well cropped with winter vegetables. Fruit, too, is cultivated extensively. Apricots, Peaches, Nectarines, Cherries, Plums, and Pears are grown on the walls, and a neat system of training is adopted by securing all the main branches to nails with thin shoots of Willow; the nail is driven into the wall where required, the Willow turned once round the nail, and the ends brought round to the front of the branch and tied. The ordinary birch broom is here substituted by one home-made of the Snowberry Tree (Symphoricarpus racemosa), which at this time of the year is cut and stored in a dry shed, and in wet weather the men arrange the pieces in about 18-inch lengths, and they are bound round tightly with green Willow shoots, and put away in bundles. They are said to wear better and last longer than Birch, and have the advantage of being easily made from material that can generally be got in abundance.

Mushrooms have been successfully grown in a rather novel manner

for some years. When the late gardener (Mr. G. Gray) was forming the framework for his new beds in the Mushroom house, instead of making a close bottom he fixed strips of wood about 4 inches wide across, leaving a small space between each, and after the bed was made up and ready for spawning pieces of spawn were inserted in these spaces as well as in the upper surface of the bed, and he was always able to cut fine Mushrooms from both sides. Mr. Randall, the present gardener, is growing them in the same way, and is well satisfied with the results. He has also a good supply of Rhubarb, Seakale, Chicory, and Endive under the beds.

There is a good range of vineries, and in the late house are some capital bunches of Lady Downe's. In the others are wintered large and tender plants required for vases and pedestals in the flower garden, such as Coprosmas and Heliotropes. A large stove recently built by Messrs. Foster & Pearson is well heated and ventilated, and is now furnished with foliage and flowering plants. The wide centre bed is filled with specimen and decorative plants, while on the sides are some well-grown Orchids, among which is a large specimen of Epidendrum ciliare, a common species, but one not to be despised in December. We also observed Calanthes, Cattleya labiata, C. Bowringiana, Vanda cœrulea, and Cypripediums in variety. Palms, Ferns, Crotons, Dracænas, and Alocasia Sanderiana also occupy the sides. Two large Ficus elastica albo-variegata are in the corners, and the roof is well furnished with creepers of light and graceful habit. Stigmaphyllon ciliatum covers a good space, and very pretty it is with yellow Orchid-like blooms, while Gloriosa superba, Aristolochias, Smilax, and Asparagus plumosa all find a place.

In a smaller and cooler house is a fine piece of Oncidium incurvum, with eleven strong branching spikes, the light sprays of which are so useful in making up buttonholes. The yellow Oncidium varicosum stands in contrast to the scarlet Sophronites grandiflora and Masdevallia Veitchi; there are some well grown Miltonia vexillare, Masdevallia tovarensis, Cypripedium insigne, C. Leeanum, Odontoglossum crispum, and O. cirrhosum. There are several low span-roofed structures and heated pits used for forcing and growing plants for the stove; others are filled with Primulas, double and single; Cyclamen, Zonal Pelargoniums, Rhododendrons, Azaleas, Heaths, and quantities of bulbs. A plant worth passing note is the pretty trailing Sibthorpia europæa (named in compliment to the botanist and ancestor of the present owner of that name). Besides the type are two other varieties, aurea and variegata, which are in pots suspended from the roof, and the numerous slender stems with miniature foliage almost hide the pots. The large show house has been gay for some time past with Chrysanthemums, Pelargoniums, Cinerarias, Bouvardias, Deutsche Perle Azalea, Begonias, including the useful winter flowering Gloire de Lorraine. On the roof facing the east Lapageria alba and rosea have been and still are flowering profusely. On the latter were bunches of as many as eight flowers on 4 inches of wood. Fuchsias also are trained up, having stems like Vine canes, and producing an enormous number of flowers.—G. W. Cummins.

THE YOUNG GARDENERS' DOMAIN.

A Bothy Yuletide.

Everyone of us who can read has, by the aid of the printing press, been able in imagination to spend Christmas in picnic fashion under the blue Gum Trees of Australia and the Tree Ferns of New Zealand. We have been present in spirit at the Yuletide gatherings of Arctic explorers, and have shared Christmas cheer with the squatter in his log cabin out West. We know how the festive season is spent aboard ship, and how the mind of the soldier wanders homeward when it is his lot to watch by the lonely bivouac fire on Christmas Eve. We know something of how the time is spent under all these circumstances, but to come closer home gardeners have the best recollections of Christmases in that best of all training schools for the craft—the bothy. Therefore, I dispel all things practical for the present, and ask my readers, young and old, to gather round the bothy fire with those who, since the Christmas of which I write, have scattered in various directions, several of them now holding good positions as head gardeners.

To begin with, there was nothing new or original about our bothy. It was, like the garden itself, quaint and old fashioned, with all rooms on the ground floor, and casements glazed with tiny diamond-shaped squares of glass, artistic, but not admitting a flood of light. Round the low windows rambled an old Wistaria, which formed such a bower over the door that it was a little difficult to tell exactly where the entrance really was. The interior varied little from that of other bothies, with its long dining table, its array of working coats hung along the wall, and its large open fireplace. Ah! that fireplace. How many a youngster, including the writer, has sat and gazed into its embers with heavy heart on his first evening of bothy life, full of the remembrances of the home circle, left for the first time, and downhearted at the prospects before him. The few years of probationship over, last evenings have also been spent around the fire, but with different thoughts. A few happy careless years of youth, spent mostly under the roof, made it a home full of pleasant associations which made the parting sore. All grievances were forgotten on the last night of residence, and the old bothy was dear, the fire a friend, soon to be parted with by the young gardener about to continue his course of training in a new domain.

Behind the cupboard door which contained our stock of culinary utensils was a long list of names, with dates affixed, telling of the coming and going of those who had been residents of the bothy. There was no rule about the keeping of this primitive register, yet each newcomer duly affixed his signature and the date of his advent, and added the day of the month prior to his departure. No mischievous youth dared to erase or tamper with a signature, and everyone had a kind of respect for those heading the list. I wonder if they have forgotten the column on the back of the cupboard door—those who are now on the downward grade.

It would be interesting also to know what has become of all those whose names are still there, though some of them faint. Several, to my knowledge, have passed over to the great majority, others sought their fortunes in Australia and America, and one or two who never had much love for gardening drifted into the army, and one I know fell a victim to a savage's spear in South Africa. Others still followed their calling till they attained good positions, and if I mistake not, look back on the days spent in the old bothy of which I write as being amongst the most happy of their career. Some years have passed since this hand wrote the bottom signature, and doubtless by now many others are below it if the custom is sill continued.

But how was Christmas spent? Who would be on duty? was the question asked weeks beforehand, and the two luckless individuals whose turn it happened to be were open to some little banter; and should, in the weeks that intervened, any unforeseen accident happen which altered the order of events, the one bringing about the change was subject to some scathing remarks. On the whole, however, the unfortunate ones met their fate cheerfully, and though Christmas was to be spent at work, made the best of it. At the Yuletide of which I speak the writer was on duty—the first ever spent from home—and recollects some feelings of depression on seeing portmanteaux packed ready for the holiday.

There were ten in all, and four had gone home. Lucky four, said the six that remained, and those who were free wished that home was nearer. Amongst the latter was the youngest hand; an apprentice boy having his first Christmas experience in a bothy. Poor lad! he shed a few tears, but we cheered him up, and he grew brighter when someone informed him that there was a hamper for him. It was quite a mother's hamper, full of thought for the tastes of her truant boy. A plum pudding, cake, mince pie, and such-like simple dainties to make his Christmas cheerful. She would like him to come home, but was a widow, and it could not be managed. Her husband had died and left her with a family to provide for, and through friendly influence her eldest boy was given a start in our bothy—a start he has taken advantage of and continued, as he has now reached the foreman's stave on the ladder of his career.

Another's home was among the hills o' Scotland, so for him a visit was out of the question, though doubtless he was not forgotten by those gathered round the log fire somewhere away in the Hie'lands. A third was worse off, as he had no home except the bothy, and the fact seemed to strike him with the greatest force at such times as these. But young men are not sentimental long, and low spirits soon departed as we gathered round the bothy fire on Christmas Eve, determined, as Mark Tapley would put it, to be jolly.

The old place looked gay in its Christmas garb of suitable decoration, for in cutting the material for other purposes the best-berried sprigs of Holly had been carefully put aside for the bothy, and a journey had been made to the top of the tallest Blenheim Orange tree in the orchard for a bunch of Mistletoe. There is always something about the Christmas season that makes it quite distinct from any other, and, no matter what the circumstances, spirits usually rise to the occasion. So it was with us on Christmas Eve, gathered round the bothy fire telling stories of other Yuletides and how they were spent, and making the old place ring again with songs of the season, accompanied by that favoured instrument of the bothy, the concertina.

There was work for the duty men of course, and when the time came for banking up the fires everyone accompanied them on their rounds, and the sound of Christmas carols mingled strangely with the rattle of the shovel. Sounds of music and singing broke on the clear frosty air in various directions, telling of "waits" abroad. The work completed, quick march was made to the gardener's house, near which six pairs of stout lungs gave vent to "While shepherds watch." Later on six healthy appetites were appeased by the head gardener's Christmas cheer, while his better half, a kind soul who had sons of her own, and took a motherly interest in the young men, made her guests happy. It is this friendly relationship between head gardeners and those under them that brings out the best qualities of the young men, and adds to the benefit of both.

The next day six men formed a mutual co-operative society for preparing a Christmas dinner, and at length succeeded. Their errors of commission and omission were many. The different ingredients were ready at different times; but the event lasted the longer, and did not appear to be the less enjoyed. May all young men make themselves equally contented in the bothy this Christmastide is the wish of one still young, though an—Ex-Journeyman.

The Reserve Garden.

In all gardens, whether large or small, there should be a portion of ground set apart for the accommodation of plants after they have served their purpose in the flower beds or shrubbery. Many which, owing to the shortness of their flowering season or other causes, are not suitable for a permanency in the flower garden, may be transplanted here. Amongst these may be classed Auriculas, Polyanthus, Primroses, and Violets. Most of these are propagated by division of the root, and when they are transferred back to their quarters in the reserve garden will be the best time for dividing them, and thus increase the stock. During the summer months Wallflowers, Sweet Williams, Campanulas, and other plants of that

description should be raised and grown preparatory to their removal to the flower beds.

The reserve garden is the proper place for raising annuals for either spring or summer flowering. Asters, Stocks, Zinnias, and Marigolds ought to be pricked out here for hardening before being finally moved to their blooming quarters. It is useful for propagating Pinks, Carnations, and a host of other perennials. Roses may be budded, shrubs layered, new varieties of plants tested, and cuttings of plants that will root in the open air inserted.

It is not in itself a thing of beauty, but provides the means of beautifying the flower garden and shrubbery. It should be laid out in beds of convenient lengths, and from 4 to 5 feet wide, divided by walks cut with a spade about 1 foot to 18 inches wide. The soil must be varied to suit the different species of plants therein. It is obvious the ground must have the highest culture to grow the plants to perfection, and attention to the wants of each individual class of plants must be bestowed. When the reserve garden is of sufficient dimensions plants for the supply of cut flowers could be grown here, so that the beauty of the flower beds is not marred by frequent cutting. The reserve garden is to the flower garden what the greenhouse is to the conservatory, and no well ordered garden is complete without one.—E. J. B.

FRUIT FORCING.

Cucumbers.—As these like light, heat, and moisture, the glass should be kept clean, both inside and outside. Add a little soil over the roots as they protrude through the sides of the ridges or hillocks, using it sweet and warmed, and moderately moist. A few sweetened horse droppings sprinkled on the surface of the bed occasionally will attract the roots, and supply them with nourishment. Supply water only when the soil is getting dry, then afford sufficient to moisten the soil through to the drainage. Plants in borders of small area, pots, and boxes should have liquid manure, always tepid, and not too strong or too often. Damping the paths and sides of the bed and house will be sufficient to maintain a genial atmosphere if it be attended to in the morning and afternoon of fine days. Remove surplus fruits as they appear, also tendrils and male blossoms, unless they are required for impregnating the fruit-bearing flowers.

Stopping and thinning the growths will not be much needed, but it must not be neglected, as crowding is the precursor of evil consequences. Tie in the growths as necessary. Do not overcrop the plants, and be careful not to allow the fruit to remain longer on them than to attain a useable size; they keep fresh several days after being cut if the heels are inserted in a saucer of water in a cool place, but safe from frost. Red spider and white fly are sometimes troublesome, especially the former, in structures that are badly heated, and thus necessitating sharp firing. Sponging the infested leaves with a solution of softsoap, 2 ozs. to a gallon of water, is a sure, and, all things considered, the safest remedy for red spider if taken in time; while a little flowers of sulphur on the hot-water pipes checks it, and destroys white fly. Mildew must be kept under by dusting with flowers of sulphur, or if the hot-water pipes are brushed over with a mixture of sulphur and skim milk it will succumb. Green and black aphides may be destroyed by dusting with tobacco powder, vaporisation with nicotine essence, or fumigation with good tobacco paper, but being careful not to give an overdose, as the foliage is at all times, and especially at this time of year, soon injured.

Peaches and Nectarines.—*Earliest House.*—The trees must not be syringed after the blossoms show colour, but a moderately moist atmosphere should be maintained by damping the paths and borders in the morning and in the early part of the afternoon of fine days. Maintain the temperature at 50° to 55° by day, with an advance from sun heat to 60° to 65°, but not without ventilation at top and in front, 50° being sufficiently high for the night. If the weather is cold and sharp the temperature may fall to 45°, or during severe frosts to 40° at night, which is more advantageous than a higher and drier heat. The house should be freely ventilated when the weather is favourable, especially when the blossoms show the anthers clear of the petals, avoiding cold draughts, however; but admit a little air constantly by the top lights. Houses that have innumerable "chinks" of air may remain closed in stormy weather. The temperature, however, must be raised early in the morning to 50°, and be kept between that and 55° through the day; but 55° must not be exceeded by artificial means, nor an advance allowed above it without a free circulation of air, and it is not a good plan to close early in the afternoon at this stage.

A close moist atmosphere favours growth more than sturdy blossom and the setting of the fruit. Under favourable climatic conditions the pollen is dispersed in a golden shower when the day is bright and ventilation has been attended to early; the setting of the fruit is then generally satisfactory, even without artificial fertilisation. The trees or trellises, however, may be shaken every day from the first pollen on a tree becoming ripe until the latest flowers thereon have cast their petals. A plume of Pampas Grass drawn over the blossoms lightly scatters the pollen, or a rabbit's tail mounted on a stick may be used similarly. A camel-hair brush passed over pollen-laden anthers and applied to the stigma of each flower is, however, the most certain method of artificial fertilisation, operating after the house has been ventilated some little time.

Second Early House.—The trees must be started without delay to have ripe fruit in May or early June, according to the variety. Alexander and Early Louise Peaches, started from now to the new year, will ripen the fruit in May, Hale's Early following closely; but Stirling Castle and Royal George, started at the same time, will not ripen their fruit until June, unless very hard forced, which is inadvisable. Fire heat should only be employed to keep out frost at night, and to insure 50° by day, above which ventilate freely, and close the house at that temperature, except that a little air should be admitted constantly by the top ventilators in close-fitting houses. Bring the trees on slowly, not hurrying them in swelling the buds; and if these are abundant, rub off those on the under side or at the back of the growths. Sprinkle the trees in the morning and early afternoon of bright days only, damping sufficing when the weather is dull. Apply water if necessary to bring the soil into a thoroughly moist condition. Outside borders may be covered with about 3 inches thickness of leaves and litter, but avoid thick and rich coverings.

Succession Houses.—These cannot be kept too cool after the leaves are all down and the trees have been pruned and dressed. If the roof-lights are moveable, they should be removed whilst the trees are at rest. The frosts are never so severe as to injure the wood of trees in good health and profitable use, and the borders become thoroughly moistened by the winter rains and snow, so that they seldom require water until the fruit is taking the first swelling and entering on the stoning process. Trees under fixed roofs seldom have the soil thoroughly moistened, therefore the buds are imperfectly formed, and are cast when they should be developing into blossom. If the roof-lights are fixed, the borders must be carefully examined, and water supplied to keep the soil thoroughly moist. Dryness at the roots during the rest period is a fertile source of the buds falling, and thorough watering will not do any harm provided the drainage is effective.

Unheated Houses.—When the roof-lights are removed from these directly the leaves are all down, and they remain off until the beginning of March, the trees enjoy a complete season of rest as far as possible in our climate. Up to that time, or the swelling of the buds, they are simply frost-proof, for it is not these that suffer from severe frost, but the unripe wood, and that is worse than useless, as it falls a prey to disease. Danger to the buds begins when they commence swelling, and having burst their scales, show the downy integuments that protect the blossoms. The pruning in such cases is usually deferred until the spring, which is a light affair when the trees are grown on the long-pruning system, and the useless parts cut out directly the fruit is gathered, so that the wounds heal at once, and the winter pruning is rendered almost nil. Where the roof-lights are fixed the house must be freely ventilated in mild weather, and even in frosty on fine days. Above all things see that there is no deficiency of moisture in the border, affording a thorough supply of water when necessary.

Pines.—If preparations have not been made for producing ripe fruit during May and June, no time should be lost in attending to the matter. Black Jamaica, an excellent fruit, especially in winter; Charlotte Rothschild, and Smooth-leaved Cayenne plants, which, however promising now, failed to show fruit during October and November, will not throw up in time to ripen at the time named. Attention must, therefore, be directed to such as attain perfection in less time, as the Queens, Enville, and Providence varieties. Select at once those plants which have an enlarged base with a tendency to open in the centre, evidence that the fruit will shortly be visible, and place them in a light house or pit, affording a brisk bottom heat, say 85° to 90°, a top heat of 60 to 70° at night, 70° to 75° by day artificially, and 10° to 15° more from sun heat. When the external conditions are favourable, a moderate amount of ventilation must be given, and the atmosphere should be genial, syringing the plants once or twice a week, and then very lightly, damping the paths and similar surfaces in the house, except the hot-water pipes, on fine afternoons. Water will be required at the roots about every ten days, but do not supply it until the soil becomes dry, and then in a tepid state, with a little guano (1 oz. per gallon) or some other fertiliser in it, and always copiously, dribbles doing more harm than good.

PLANT HOUSES.

Poinsettias.—As the bracts of these fail the plants needed for stock should be given careful treatment afterwards. Do not transfer them at once from a warm to a cold structure, but remove them gradually, and with the same care diminish the supply of water until it will be safe to keep them perfectly dry and cool. Plants that are doing duty in the conservatory will need no more water than will keep their foliage fresh; these, when the bracts fail, will do very well in cool quarters.

Euphorbia jacquiniæflora.—Plants that have flowered in the stove need also the same careful treatment. They are liable to suffer if kept too wet or suddenly kept too dry. These after flowering should not be placed in too low a temperature; after they have been gradually hardened, and can be kept dry, they will be perfectly safe in a temperature of 50°. However beautiful these may be while in flower in the stove, they are much more useful in the conservatory where the temperature is not allowed to fall much below 50°; they also last double the length of time. Where nearly all flowering plants have to be employed in this structure there is a tendency to stiffness at this season of the year unless such light graceful plants as the one under notice are grown in

quantity and utilised for standing well above plants of a dwarf compact nature. By the aid of Poinsettias, Euphorbias, late Calanthes, and plenty of Centropogon Lucyanus formal arrangements need not exist. Some care is necessary in removing the latter from heated to cooler structures, or its foliage turns yellow and quickly disfigures its appearance. Plants that have produced in the stove their terminal truss may be bent round four or five small stakes, when they will soon break into growth and flower again.

Linum trigynum.—Those having flowered should be cut well back. It is not necessary to retain many plants for stock. Those that are retained, if they have been infested with red spider, should be thoroughly cleaned. The best means is to remove all the foliage and sponge their stems with a strong solution of an insecticide. Plumbagos may also be cut back. The foliage should not be removed from this plant. Its greatest enemy is thrip, which can readily be destroyed by dipping in a solution of tobacco water.

Coleus and Tradescantias.—Both these are useful in small pots for various purposes of decoration. The latter will root quickly and freely enough in any heated structure, while the former should not be in a lower temperature than 65°. They root freely enough inserted in the pots from which they are to be used if stood on a shelf over a hot-water pipe. They should be kept moderately moist.

Selaginella Kraussiana.—This is most useful in from 3 to 5-inch pots for a variety of purposes. Fill pots with light soil in which plenty of fine leaf soil has been incorporated well above the rim, and prick thickly into them growing ends of plants that have been reserved for this purpose. If placed in a warm moist house they will quickly root and cover the surface. It is a good plan to make up a few pots according to the demand at intervals of a fortnight.

Polystichum proliferum.—A useful Fern in any size pots up to those 5 or 6 inches in diameter. We find it most useful in 4-inch pots. Plants placed in these in autumn, and have been kept cool, may be introduced into a temperature of 50° to 55°. Remove the old foliage and plant a little Selaginella round the crown, and they will soon push up new fronds, and in a few weeks be ready for any form of decoration. Some in small pots to replace these may be placed into large, and Selaginella dibbled in at the same time, not too thickly, or it outgrows the plant when they are first potted. These will do capitally in a Peach house or vinery that has been started, in fact in almost any position until they begin to grow.

Adiantum cuneatum.—Where all the fronds have been gathered that are of any service the old plants may be cut over, and if slugs have infested them they should be well dusted with soot. Place these plants in a temperature of 40° for a few weeks to rest. Be careful not to overwater plants that have just started into growth; for these a temperature of 60° will be ample, while those with abundance of fully developed fronds should have a temperature 5° lower. Any plants that display signs of growing should have fronds that are ready for cutting removed to give the young ones a chance, and should be encouraged to grow. Fern fronds will be less plentiful during the next two months than what they are now, unless ample provision has been made to maintain a supply.

THE BEE-KEEPER.

Seasonable Notes.

It is not often so many changes take place in the weather during twenty-four hours as have been registered on more than one occasion in this district lately. Wind and rain, and blinding storms of hail and snow, were followed by an hour or two of bright sunshine, but owing to a low temperature the bees were not tempted to leave their hives. High winds and heavy storms have prevailed throughout the country, but during the early days of the month now fast drawing to a close bees were unusually busy in the more forward parts of the country. "S. T.," writing from the banks of the Severn, says:—"On the 3rd inst. my bees were flying from all the stocks in my apiary in great numbers, and were as busy for three hours as they usually are in the month of June. This is an unusual occurrence, even for this favoured district, so late in the year. It interested me so much that I fetched some friends to see them, who were greatly astonished." This shows how favourable and beneficial the fine weather experienced throughout the autumn has been for the bees.

In this locality (South Yorkshire), although much farther north, the bees have up to quite a recent date been almost daily on the wing. When they have been confined to their hives from any cause for a few days, and the temperature is about 50°, and the sun makes its appearance, it is surprising the effect it has on the bees. They at once take a cleansing flight, and leave their hives by the thousand, and for a few minutes one could imagine they were swarming, so excited are they, but in the course of half an hour probably not a hundred bees are to be seen, as they have all returned to their hives.

There are exceptions however, and all bee-keepers who observe the bees and their habits closely will have had experience of it. When bees leave the hives as above at this season and alight on the cold soil, or it may be in early spring after a fall of snow, they become chilled, and are unable to return.

Shading the Entrances of Hives.

It is an advantage at this season, when the ground is covered with snow (and this may happen at any time, so it is as well to be prepared), to shade the entrances of all the hives in the apiary. I prefer this plan to closing the entrance, as by so doing much harm may be done to the bees. If the sun strikes directly on the entrance the bees will endeavour to make an exit, and in their excitement many of them will be killed; also through stress of other business the entrance may remain closed longer than was intended, and much injury caused in this manner. In my apiary I go as far as never to close the entrance on any pretext, as I once saw a strong colony of bees suffocated owing to the entrance being closed. Whether the entrance is open its full width, or only an inch more or less, it is a decided advantage to shade them. All that is required is something to obstruct the light, but not the air. I have found nothing better than a piece of wood or slate placed in a slanting position against the entrance. If whatever is chosen is slightly larger than the open entrance and is placed in the right position it will have the desired effect, and should any bees by chance leave their hive there will be ample room for them to return.

By working somewhat on the above lines thousands of bees will be saved which would otherwise have been lost. Care, however, must be taken that the material utilised is not blown down by the high winds, and when the snow has disappeared the obstruction may be removed until again required.

Making Roofs of Hives Secure.

Unless some steps are taken to make the roofs of hives secure during the prevailing high winds the inmates will suffer. In some instances the roofs are fastened to the hive with hinges, and when in this form the wind has little effect on them so long as the hive is not blown over. The majority of hives, however, are made so that the roof lifts off bodily. If a hive is well made and the roof a good fit it will stand a strong force of wind if it is blowing from the same direction in which they face. But if the wind shifts round sideways to the roof it will readily remove them unless some precaution is taken.

To illustrate my meaning, I may state that the majority of my hives face due west, others have a south aspect; the prevailing high winds come from the west. If the roofs on the latter hives are not secured, the first high wind that comes will blow them in all directions, whereas the roofs of the former will not be interfered with. If the roof is flat a couple of bricks will hold it secure, and if span-roofed a piece of stout cord with a brick at each end will have the desired effect. If there is any danger of the hive being blown over—and I have seen that happen—drive a stake firmly into the ground on each side, and make secure with stout cord.

Artificial *versus* Natural Swarming.

In further reference to straw skeps it may be an advantage to note the difference between artificial and natural swarming, and under which system the bees do the better. When bees are swarmed artificially, it should always be done when they are ready to swarm naturally. If the bee-keeper does not know when they are at this stage, it is better to leave them alone. It is, however, a very easy matter to tell when they are in the right condition. If on lifting the skep from the floorboard late in the evening it is found to be crowded with bees, the floorboard being also covered, so that it is with difficulty the few remaining bees on the wing can gain access to the hive, an artificial swarm may be taken. If, on the other hand, the hive appears to be full of bees, but the floor board is not covered, wait a few days until they are of sufficient strength.

In swarming bees artificially it is better to leave the operation till the middle of a fine day, as there will then be plenty of bees on the wing to return to the old stock to attend to the hatching brood. It is an advantage being able to swarm the bees artificially, instead of having to wait several days or weeks for the bees to swarm naturally; but care must be taken not to remove too many of the old bees with the queen. There is a risk in allowing bees to swarm naturally on account of them flying away, but when left to themselves they never make the mistake of swarming before they are ready, or of too many bees going with the swarm.—An English Bee-keeper.

GARDENERS' CHARITABLE AND PROVIDENT INSTITUTIONS.

The Gardeners' Royal Benevolent Institution.—*Secretary*, Mr. G. J. Ingram, 50, Parliament Street, London, W.C.

United Horticultural Benefit and Provident Society.—*Secretary*, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

Royal Gardeners' Orphan Fund.—*Secretary* Mr. A. F. Barron, The Royal Gardeners' Orphan Fund, Chiswick, W.

TO CORRESPONDENTS

All correspondence relating to editorial matters should, until further notice, be directed to "THE EDITOR," **8, Rose Hill Road, Wandsworth, London, S.W.**, and **NOT** to Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Grevillea robusta (*W. G.*).—This is a New Holland evergreen greenhouse plant belonging to the natural order Proteaceæ. It certainly cannot be exhibited as a Fern, and the adjudicators were right in rejecting it.

Carnation Blooms Diseased (*G. E.*).—The flowers are what is commonly called "damped,' meaning a turning brown or discolouration of the petals, and speedy decay. This is considered a consequence of a close and damp atmosphere, especially when the development has been somewhat forced and the tissues thin and tender, hence very susceptible to injury. The "damping" sometimes occurs without any accompanying micro-organisms at first, but these may follow. A very minute form of parasitic fungus was found outside of the ovary of one of the flowers, producing slender fertile hyphæ, bearing the conidia, and when falling away forming a dark powder. In other cases the ovaries were quite healthy, and the ovules within perfectly normal—indeed, in several cases fertilised. The presence of the fungus may or may not have had something to do with the flowers "damping off," but it is not the damping followed by a blue mould, and is interesting even if disastrous in result. Perhaps a little sulphur on the hot-water pipes might keep the parasite at bay, especially with air left on the house constantly, and the moisture somewhat reduced. This we have found the best preventive of common damping and mould, but this case of yours is altogether different, and we are obliged by your bringing it under notice.

Cucumbers Failing (*A. E. C.*).—We regret to report that the plant has succumbed to the root-stem eelworm, Tylenchus obtusus, the same enemy as is represented on page 597. The lateral roots are not affected in any way by the parasite. The disease commences at the point where the radicle issues from the seed, but we do not for one moment entertain the idea that the nematode has gone over in the seed. As the decayed parts contain countless numbers of cysts, and the swollen parts of root-stem innumerable eggs, we advise the careful lifting of the plants with a spade, cutting all round and under, so as to remove the root-stem intact, and place each as removed in a pail smeared inside with petroleum, finally burning, then do one of the three things following:—1, Scald the bed without delay with boiling water, also the walls of the bed and house, as well as the paths. 2, Use 6 ozs. of kainit per square yard to each 6 inches depth of soil, and either 6 ozs. of quicklime or ¾ lb. basic slag phosphate along with the kainit, mixing uniformly through the soil, then let it lie a few weeks. 3, Place on the bed 1 oz. of mustard dross per square yard for 6 inches depth of soil, and mix similarly. These we have found the most simple and safe preventives. Corrosive sublimate is the best germicide, and can be applied in two ways:—One mixed with 1000 parts of dry earth, or in solution with water, 1 oz. to 6¼ gallons. It is, however, such a virulent poison that we do not like to incur the responsibility of recommending it. If you employ the kainit and basic slag phosphate, as much growth as desired can be secured by using nitrate of soda or sulphate of ammonia, half to 1 oz. per square yard, at intervals of four to six weeks, or better supply it in liquid form, and never stronger than ½ oz. to a gallon of water. As regards prevention in respect of fresh soil, either (1) Char the turfy loam or compost, heating it through to a temperature of about boiling point; (2) Scald with boiling water; or (3) Stack the turf along with the other intended ingredients of the compost, using the kainit and basic slag phosphate in the proportion before quoted—viz, 1 oz. kainit per square yard to each inch thickness of soil, or 2¼ lbs. per cubic yard, and double that amount of basic slag phosphate, sprinkling the proportionate quantities on each layer of turf as placed in the heap; you will then have a compost containing potash and magnesia, phosphate, lime, and iron, also probably devoid of animal parasites. A little nitrate of soda given occasionally, when the plants are growing, will supply the essential nitrogen to enable them to utilise the other food elements to the best advantage in the production of healthy growth and profitable crops.

Hard Carrots (*L. Row*).—It is comparatively well known that there is a tendency in some varieties, particularly those which form part of the root above ground, to become more or less hard in places. This is partly due to the early sowing (late March or early April). The hardness of the flesh is in no way attributable to the manure. We should not sow before the middle of April for the main crop, and even then in light silicious and calcareous soils the roots are liable to become overgrown—that is, advanced towards the seeding state, and so have more or less hard cores or parts that do not become tender without extra long boiling. In such soils it is sometimes necessary to sow early in July to produce a late crop; the roots then attain to a good useable size, and are tender and delicious when cooked.

Pruning Roses when Planting (*Rose Amateur*).—Certainly you may when planting your Roses do a certain amount of pruning. Do not hesitate to shorten the very long growth, reducing them about half, though we know they are often left uncut till spring, and Roses thus left unpruned, say till April, have grown very well, though we have also known some to fail. The difference may be attributable to the weather. Should the air be very dry over a long period, as it often is in February or March, when easterly winds prevail, the longer the shoots are the greater the evaporating surfaces, and consequently the greater the escape of the juices from the plants, at a time when the roots are inactive, and cannot absorb moisture from the soil to compensate for the loss. When Roses are dug up and planted in October and November they may commence rooting at once, and can then imbibe moisture to meet the demands of evaporation; but when planted now and onwards, we suspect the roots remain dormant till the spring, and on this account we should shorten the branches as the safest course to adopt in conserving the moisture in the lower part of the stems. If a Rose tree is dug up in October, before the leaves fall, the moisture escapes from them, and the stems shrivel, but if most of the leaves are cut off the evaporating surface is reduced, and the stems remain fresh. But, observe, we should only "half prune" now, shortening more closely in spring after the buds push from near the tops of the shoots, and if they grow an inch or more no harm is done by their removal.

Vine Leaves and Shoot Diseased (*Ardgown*).—The leaves are slightly, and the wood seriously, infested with the Grape anthracnose fungus (Sphaceloma ampelinum), and in very characteristic form, the most damage being done to the young shoots and (when any) the fruit. The small raised spots represent the pycnidia of the anthracnose fungus, and from these the minute spores are pushed out when mature. When these spores fall on green leaves or young shoots, they germinate under favourable conditions, the resulting mycelial hyphæ growing in the bark tissues down to the outer wood, causing it to become brown or black. The fungus lives over the winter on the Vines. The treatment usually found effective as a preventive consists in cutting out all injured canes during the winter, and spraying the Vines thoroughly with a solution of sulphate of iron, 1 lb. to 5 gallons of water. Stronger solutions are used on the Continent as a winter dressing, the solution being applied by means of a brush when the Vines are quite dormant. When the disease appears a powder composed of equal parts of air-slaked lime and flowers of sulphur may be dusted on. The Vines are so weak that we should use the solution first named shortly after the pruning. But what is the condition of the roots? We put this question as the wood is very weak, and the leaves thin in texture. Examine carefully the stems within the soil, and you may possibly find either eelworms (see page 597) on the root-stem, or mites, or some other pests to account for the indifferent growth. If you find anything abnormal we shall be pleased to render any further assistance in our power if you submit specimen for examination.

Vallota purpurea (*P. R. J.*).—The compost for Vallotas should consist of turfy loam with a little decayed manure and leaf mould, with sufficient coarse sand to keep the soil open. In potting place three bulbs in a well drained 6-inch pot; if the bulbs are scarce have one in a 3-inch pot, but we recommend the former practice where possible, as the plants will flower profusely and make a beautiful display. In potting place some of the roughest of the compost over the drainage, then three-parts fill the pots with soil, and press it down gently to prevent it sinking too much. If 6-inch pots are used place the bulbs a little distance apart to allow the growth of offsets. Give a good watering through the rose of a watering-can and transfer the pots to the greenhouse, assigning them a position near the glass; the bulbs will then soon commence growing. Never permit them to be insufficiently supplied with water, and in the summer months they should be gently sprinkled. When the pots are quite full of roots and the flower stems appearing, weak guano water may be given twice a week. After flowering remove the flower stems, as they exhaust the bulb; the pots can then be placed in any sunny part of the greenhouse, so as to have the bulbs well ripened. The soil must not be allowed to become dust-dry at any time, not even in the winter months. The Vallota is increased by offsets. The small bulbs can be taken in the spring, and are either potted singly in small well-drained pots or placed in pans in a compost of half loam and leaf soil with a little sand, and if placed in a warm part of the greenhouse they will soon produce roots. To flower the plants well they must be root-bound, and three bulbs in a 6-inch pot will not require a larger one for three or four years, providing the drainage is open.

Burning Clay for Garden Use (*An Old Subscriber*).—The clay is best burned with wood, as the ashes have considerable manurial value in potash and phosphoric acid. We should select a spot in a situation where fire would not prejudice the surroundings, and for such small quantity as a cartload of clay stand an ordinary wood faggot on end, opening the part placed downward somewhat, and introduce in this a wisp of dry straw for lighting, the faggot then having a cone-like appearance. Around this place some cord wood, standing it on end all round the faggot, and bringing the wood up to about a height of 3 feet. The clay being ready at hand light the straw, an opening being left for that purpose, and when the faggot gets well alight, and the surrounding wood commences to kindle, place the clay all round the base of the wood, and about an ordinary spit thick, working upwards as in covering a Potato pie with earth, the clay being put on in junks, thus lying somewhat open, and allowing the fire to burn fairly freely. When covered to the top the thick wood will be well alight, and the flames coming through openings between the lumps of clay. Close these by placing on the remainder of the clay, and it will soon become heated through, the clay first put on falling through more or less as the wood consumes. The only further attention consists in placing any lumps of clay not receiving sufficient action of the fire where this breaks through, thus exposing all parts equally to the burning, and as the heap falls in the bottom layer of clay may need placing on the fire to secure an effectively burned heap. When burned and cool it will be a crumbling mass, or can easily be broken, and when mixed with the ashes form excellent material for adding to soil, being suitable for most kinds of plants and fruits. The process of burning is more difficult to explain than carry out.

Names of Fruits.—*Notice.*—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. *In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing.* The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. *They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state.* (*T. B.*).—1, Winter Nelis; 2, Pitmaston Duchess; 3, unknown. (*W. T. A.*).—1, New Hawthornden; 2, Yorkshire Greening; 3, Alfriston; 4, Mère de Ménage; 5, Golden Noble; 6, Gloria Mundi. (*A. S. H.*).—1, Joséphine de Malines; 2, Easter Beurré. (*D. D.*).—1, Bramley's Seedling; 2, Wellington; 3, Dr. Harvey; 4, Ribston Pippin; 5, Cox's Orange Pippin; 6, American Mother.

Names of Plants.—We only undertake to name *species* of plants, not varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*F. J. B.*).—1, A good form of Lælia anceps; 2, Cypripedium insigne; 3, Lælia autumnalis; 4, Odontoglossum Rossi majus. (*W. L.*).—1, Nephrolepis tuberosa; 2, Adiantum cuneatum grandiceps; 3, Asplenium bulbiferum: 4, Pteris serrulata; 5, Davallia canariensis; 6, Nephrodium molle. (*E. E.*).—1, Coccoloba platyclada; 2, Maxillaria picta; 3, Cyperus alternifolius. (*R. A.*).—Justicia flavicoma. (*R. J.*).—1, Adiantum cuneatum grandiceps; 2, Nephrolepis davallioides furcans; 3, Davallia canariensis; 4, Nephrolepis exaltata. (*B. S.*)—As we have repeatedly stated, we cannot undertake to name florists' flowers. Send your specimens to some specialist and you will get what you require.

COVENT GARDEN MARKET.—Dec. 22nd.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	1 6	to 4 0	Grapes, lb....	0 8	to 2 0
Cobs	22 6	24 0	Lemons, case	11 0	14 0
Filberts, 100 lbs.	0 0	0 0	St. Michael's Pines, each	2 6	5 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, ½ sieve	0 0	0 0	Onions, bushel	3 6	4 0
Beet, Red, doz.	1 0	0 0	Parsley, doz. bnchs.... ...	2 0	3 0
Carrots, bunch	0 3	0 4	Parsnips, doz.	1 0	0 0
Cauliflowers, doz.	2 0	3 0	Potatoes, cwt.	2 0	4 0
Celery, bundle	1 0	0 0	Salsafy, bundle...	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Seakale, basket...	1 6	1 9
Cucumbers	0 4	0 8	Scorzonera, bundle	1 6	0 0
Endive, doz.	1 3	1 6	Shallots, lb.	0 3	0 4
Herbs, bunch	0 3	0 0	Spinach, pad	0 0	0 0
Leeks, bunch	0 2	0 0	Sprouts, ½ sieve...	1 6	1 9
Lettuce, doz.	1 3	0 0	Tomatoes, lb.	0 4	0 0
Mushrooms, lb.	0 6	0 8	Turnips, bunch	0 3	0 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6 0	to 36 0	Evergreens, var., doz. ...	4 0	to 18 0
Aspidistra, doz.	18 0	36 0	Ferns, var., doz.	4 0	18 0
Aspidistra, specimen ...	5 0	10 6	Ferns, small, 100	4 0	8 0
Azalea, per doz.	30 0	42 0	Ficus elastica, each... ...	1 0	7 0
Chrysanthemums, doz. ...	4 0	9 0	Foliage plants, var., each	1 0	5 0
,, ,, single plants	1 6	2 0	Lilium Harrisi, doz.... ...	12 0	18 0
Cineraria, per doz. ...	9 0	15 0	Lycopodiums, doz.	3 0	4 0
Cyclamen, per dozen ...	12 0	18 0	Marguerite Daisy, doz. ...	4 0	9 0
Dracæna, var., doz.... ...	12 0	30 0	Myrtles, doz.	6 0	9 0
Dracæna viridis, doz. ...	9 0	18 0	Palms, in var., each... ...	1 0	15 0
Erica hyemalis, per doz.	9 0	15 0	,, specimens	21 0	63 0
,, gracilis, per doz. ...	6 0	9 0	Pelargoniums, scarlet, doz.	4 0	6 0
,, various, per doz. ...	8 0	12 0	Tulips, various, doz. bulbs	0 9	1 6
Euonymus, var., doz. ...	6 0	18 0			

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s. d.	s. d.
Arum Lilies, 12 blooms ...	4 0	to 6 0	Mignonette, doz. bnchs. ...	2 0	to 4 0
Asparagus Fern, bunch ...	1 0	2 6	Mimosa or Acacia, bunch (French)	0 9	1 0
Bouvardias, bunch	0 6	0 8	Narciss, white (French) dozen bunches	1 0	2 6
Carnations, 12 blooms ...	1 0	3 0	Orchids, var., doz. blooms	1 6	12 0
Chrysanthemums, 12 bnchs.	2 0	6 0	Pelargoniums, doz. bnchs.	4 0	6 0
,, ,, 12 blooms	1 0	4 0	Roses (indoor), doz.... ...	0 6	1 0
Eucharis, doz.	4 0	6 0	,, Tea, white, doz. ...	1 0	2 0
Gardenias, doz.	3 0	6 0	,, Yellow, doz. (Perles)	1 6	4 0
Geranium, scarlet, doz. bnchs.	6 0	9 0	,, Safrano (English)doz.	1 0	2 0
Hyacinths (Roman) dozen bunches	0 9	1 0	,, ,, (French) per doz.	0 6	1 0
Lilac (French), bunch ...	3 0	5 0	,, ,, ,, per 100...	5 0	7 0
Lilium longiflorum, 12 blooms	4 0	6 0	,, Pink, doz.	1 0	2 6
Lily of the Valley, 12 sprays	1 0	2 0	Smilax, bunch	1 6	2 6
Marguerites, doz. bnchs....	2 0	3 0	Tuberoses, 12 blooms ...	0 3	0 4
Maidenhair Fern, doz. bnchs.	4 0	8 0	Tulips, doz. blooms	1 0	1 6
			Violets, doz. bnchs.	1 6	2 0
			,, Parme (French), bunch...	3 0	4 0

IS THERE A RELATIONSHIP?

In the great European wars nations were decimated. To make a great victory, as at Blenheim, many thousands fell—fell for no purpose but to add to the aggrandisement of a monarchy, or to minister to foolish ambition. Of late we have had no European wars, but we have lost men and money in our little African and Indian wars—more men than we can well afford, for they were tried, good honest English soldiers. We regret their loss, and wreath their tombs with Laurel, and talk about the time when disputes shall be settled by arbitration instead of by gunpowder.

There is a foe at our own firesides—a foe far more deadly than the bravest soldier ever born; it is an insidious foe, creeping upon us unawares, deluding us with feigned retreats, and playing with our hopes and fears. It is an enemy vigilant and relentless, with no more mercy than the tiger shows to its victim. It regards neither youth nor old age—indeed, for choice, prefers the youngest and fairest. Palace and cottage alike suffer from its ravages, and though money and its attendant comforts may do much to alleviate, yet no skill, no care can avail to save the victim.

We speak of England's scourge, consumption; we need not dwell on it, for who among us cannot speak feelingly of dear ones removed from our sight by this fell disease? We doubt there are but few families in this dear old country of ours perfectly free from the taint. True, our variable climate may, and is, in a great measure, to blame. The dampness and humidity foster the disease; but we are led to consider whether there are not other causes at work—causes which might be prevented, or at any rate mitigated.

We are indebted to Professor Long, in "Nineteenth Century," for October, for a capital article on "Consumption in Cattle Conveyable to Man." He gives us some startling facts, and deduces some strange conclusions. We had some idea that cattle were, in a measure, affected by tuberculosis, but had little notion to what extent the mischief had spread.

Professor Long is in a position to put before us a most alarming

array of figures—figures that he has received from some of the greatest veterinarians in the world, men who have made this particular disease almost a life study.

Granted that this tuberculosis exists to such a great extent among cattle (and Professor MacFadgean is of opinion that one cow out of every four is more or less tuberculous), can this disease be transmitted from the animal to man? We say most undoubtedly so, and in more ways than one. The disease is caused by an organism known as Koch's bacillus, and whenever this bacillus establishes itself in an animal, the growth of a tubercle follows. Sometimes the bacillus lodges in a vital organ, such as the lungs or kidneys; sometimes only in the muscular tissue.

An animal in healthy surroundings has a better chance of throwing off the complaint; an animal in a crowded, ill-ventilated, dark shed has no chance whatever. Now, suppose a cow whose life is spent practically in confinement; she has these tubercles on the lungs, or the kidneys or bowels, or, worse than all, on the udder. She is continually passing off these bacilli into the surrounding air or into the milk pail. The sheds are warm and dark, and therefore most probably dirty; the air is full of germs, only waiting to transmit themselves to some other convenient breeding ground, either in the bodies of other cows or oxen, or in the bodies of men.

Well, a reader may say, Why allow these animals to live? Quite right; but till Government is ready to pay part compensation to the owner for his loss, he is not likely to pose as a public benefactor, and slaughter all "suspects." For instance, a small farmer with a herd of eighteen cattle gets an inspector to examine them for traces of tuberculosis; out of the eighteen seventeen are found to be diseased. To kill these seventeen, without any hope of part compensation, of course means ruin.

Then, again, it is often that the disease exists unsuspected. A case is reported of an apparently healthy cow being killed; the whole of the body was perfectly clear till the udder was examined, and there among the milk glands was found a formation about the size of an egg full of yellow serum. In another case the calf of an apparently healthy cow developed diarrhœa, which ceased as soon as the calf's food was changed. The cow was slaughtered, and the udder was found to be one mass of corruption. Nice, this, for the consumers of the unboiled milk.

Whether the milk of a cow is full of bacilli where the udder is not affected seems still to be an open question. Professor Long appears to think the danger is there, and Dr. Ernst, an American authority, says: "First and emphatically that the milk from cows affected with tuberculosis in any part of the body may contain the virus of the disease. Second, that there is no ground for the assertion that there must be a lesion of the udder before the milk can contain the infection of tuberculosis. Third, that on the contrary the bacilli of tuberculosis are present, but with no discoverable udder lesions."

Of course great danger arises from improperly cooked meat from diseased animals, but here we hope Government inspectors do take precautions. Of private slaughter houses we still have our doubts. Public abbatoirs are the greatest safeguard the consumers have. In 1894 in Manchester seventy-two entire carcases were condemned; 1895, ninety-eight; in 1896, 108. These were all apparently healthy.

This is what the chief inspector found—out of 398 animals, 111 were diseased; of these 111, ninety-six were cows and heifers. In Berlin it is shown that 12 per cent. of cattle slaughtered publicly are diseased; in Dresden 14·4; Upper Silesia 9·5; in Durham 18·7, Midlothian 20 per cent., New York 22 per cent., London 25 per cent. Now Koch, when he found out so much about this disease also discovered a means by which animals could be tested as to their state of health. "Tuberculin lymph is injected into the system of a suspected animal; if the tubercle is present reaction follows, the temperature subsequently falling." Thus is the test remedy explained by Professor Long to the ordinary layman.

Of course this test is not infallible, but it is as near perfection as any human test can be. The Danish Government and that of some parts of the United States of America have adopted preventive measures. Any animals showing signs of disease are done away with. The calves are most carefully fed only from healthy cows, and the sanitation of the sheds is made a necessity.

We are so frightened in England of infringing on the liberty of the subject that we let infectious diseases reach such a point as no other civilised nation would permit. If, as Professor Wright of Glasgow states, the loss annually to Scotch farmers from tuberculosis is £440,000 per annum, we think we have let the thing go far enough. Compulsory slaughter was the only remedy for rinderpest, and the compensation was, we believe, something about two-thirds of the full value. The first outlay would be very heavy. Professor McFadgean estimates the first year at £200,000; but we fancy even then the gain to our own health, to say nothing of healthy stock, would be cheap at the price.

Since writing the above we met with the following in "Pall Mall Gazette," December 8th, 1897:—

"The medical officer, after pointing out in 1896 that of all the deaths that have occurred during the last twelve years at Maidstone (between the ages of fifteen and thirty-five), more than 37 per cent. were caused by tuberculosis, goes on to call attention to the importance of insuring Maids one against diseased milk and meat. 'From a personal inspection of all the cowsheds I find regulations are urgently required,' he says. 'With the exception of one or two of these sheds none is in a wholesome condition. As a rule they are overcrowded, ill-ventilated, ill-drained, and in many cases ill-adapted to the purposes to which they are put; and, in the light of the "Report of the Royal Commission on the Effect of Food Derived from Tuberculous Animals on Human Health," I am quite positive they are calculated to excite and foster the evil now under consideration.'"

WORK ON THE HOME FARM.

We are on the eve of Christmas, a season peculiarly associated with peace and goodwill, and this should remind us not to neglect those items of farm work which may perhaps be of more use to our neighbours than to ourselves. Included in such a category would be the proper repair of fences belonging to us, but which during the ensuing season may be only useful to keep out our neighbours' cattle, not to keep in our own.

The law only requires us to provide a reasonable fence, but if the next field happens to be grass stocked with horses, and the fence be a weak one, the owner of it is too often inclined to fall back on the judgment so often given of late in County Courts that "Owners of stock are responsible for the keeping of their stock off their neighbours' land. If this were acted upon universally, great expense would have to be incurred all round; in fact, there would inevitably be a deadlock.

It therefore behoves us all to do as we would be done by, for we never know when it may be our turn next, and to keep all our fences in good repair, whether for the convenience of ourselves or of others; for we have known many instances where neglect in this respect has been the cause of rupture of the state of peace and goodwill between neighbours which we should cultivate not only at Christmas but all the year round.

Whilst finding time to give proper attention to the fences we must not neglect the fields. Any roadside scrapings, ditch cleanings, or anything of the nature of compost will do good on grass land, particularly where the grass is inclined to grow rough and coarse. When carting such material as mentioned above on to grass we always put it where the herbage is tussocky and long. It acts like magic; the following season we find the animals biting, or rather nibbling, close to the bone, as it were, where previously autumn found a patch of long coarse herbage which nothing would touch. It is not the pasture which most fills the eye of the farmer, which is of the greatest value, but that which best fills the stomachs of his animals.

METEOROLOGICAL OBSERVATIONS.

CAMDEN SQUARE, LONDON.

Lat. 51° 32′ 40″ N.; Loug. 0° 8′ 0″ W.; Altitude 111 feet.

DATE.	9 A.M.					IN THE DAY.				
1897. December.	Barometer at 32°, and Sea Level.	Hygrometer.		Direction of Wind.	Temp of soil at 1 foot.	Shade Temperature.		Radiation Temperature.		Rain.
		Dry.	Wet.			Max.	Min.	In Sun.	On Grass.	
	Inchs.	deg.	deg.		deg.	deg.	deg.	deg.	deg.	Inchs.
Sunday 12	29·709	36·8	36·5	S.W.	40·0	43·1	32·6	44·4	28·0	0·431
Monday 13	29·663	42·9	42·2	S.E.	38·5	53·8	28·9	53·8	25·6	0·0 2
Tuesday 14	29·462	50·2	48·7	S.	42·1	51·1	43·1	66·9	40·5	0·112
Wednesday.. 15	29·570	47·6	44·6	S.W.	42·9	54·3	43·8	63·6	38·1	—
Thursday.... 16	29·849	54·3	52·6	S.	43·1	55·9	45·3	62·6	35·7	—
Friday 17	30·155	49·6	48·3	S.W.	44·4	53·4	47·3	62·4	39·4	—
Saturday .. 18	30·329	43·1	43·1	W.	43·9	46·4	41·7	51·8	35·9	0·016
	29·820	46·4	45·1		42·1	51·1	40·4	57·9	34·7	0·651

12th.—Incessant rain from 9 a.m. to 2.30 p.m., clearing after, and brilliant night.
13th.—Dull, damp, and rainy throughout, and mild in afternoon.
14th.—Mild and drizzly early, clearing gradually, and bright sun from 11.30 a.m.; fine night.
15th—Gale in small hours, with heavy showers and thunder, lightning, and hail; bright sunshine all day, but slight showers in evening.
16th.—Squally and damp early; fair morning, sunny afternoon, and clear night.
17th—Fine and sunny all day.
18th.—Fog, thick till about 11 a.m., and in evening; sunny for an hour or two at midday.

A sharp frost in the early hours of the 13th; otherwise very mild for the time of year.—G. J. SYMONS.

Journal of Horticulture.

THURSDAY, DECEMBER 30, 1897.

THE JOURNAL OF HORTICULTURE *can be obtained from the Office*, 171, *Fleet St., London, post free for a Quarter*, 3/9. **Editorial communications must be addressed to 8, Rose Hill Rd., Wandsworth, S.W.**

THE CLOSING YEAR AND ROLL CALL.

BEFORE taking a more general review of the different sections embraced in the great subject of horticulture in my new year's address, which I am again privileged to supply, for publication next week, I may dwell briefly in a preliminary way on a few features that may not be inappropriate to the last issue of the *Journal of Horticulture* for 1897, including a reference to some "heroes in the strife" who have passed away.

The one great event of the year which dwarfed all others, and some of them into nothingness, was the historical Diamond Jubilee of our Queen. It was very amusing to notice what a stalking horse this event was made for all sorts of schemes; if anyone had an institute to found, or school to build, or even a cock loft to provide, it was all to be connected with the Jubilee. Many of these proj cts were good, some very incongruous, and some utter failures. There was a grand flourish of trumpets about the Horticultural Hall which was to be provided in commemoration of the event, but the initial difficulty of where it was to be completely "squashed" the idea, and I can only repeat what I have before said, that it is a great reflection on the millionaires and wealthy men who are interested in horticulture that a sum necessary for such a project was not obtained long ago.

There were other plans for connecting Horticulture with the Jubilee which had more or less a commercial aspect about them, and therefore deserved to fail. There was one notable exception to all this, and that in a quarter which was most welcome—viz., the Council of the Royal Horticultural Society. The idea of instituting an Order of Merit in connection with Horticulture owed its origin to what the President of the Royal Horticultural Society aptly called "the fertile brain" of its Secretary, the Rev. W. Wilks. The idea was to select sixty of the most noticeable persons connected with horticulture, and to make them recipients of the medals of the new Order. It is a mistake, however, to suppose that the Council made the selection entirely on their own

responsibility, for circulars were sent round to a large number of persons connected with Horticulture, in which they were asked to supply the names of those whom they would recommend. Fortified with these lists, and strengthened by their own personal experience, the selection was made. Of course, like everything of the kind, objections were put forward. "Why was this or that weakling put upon it?" was asked; and "Why was such and such a fine fellow omitted?" while others, in the true "fox and the grapes" fashion, sneered at the whole thing; but I believe that after a little while it will be generally acknowledged that the Council of the Royal Horticultural Society did a most graceful act in a most graceful way, and well worthy of its high position as the leader of all things connected with horticulture in this kingdom, and that its recipients will proudly add V.M.H. to whatever other letters they may take after their names. A brief review of the ordinary work of the Society and other matters must be postponed.

In these preliminary observations I may perhaps refer to the garden literature during the past year. The four leading journals have well maintained their position, and have contributed scientific and practical information to their various readers, while for those who are more economically disposed the minor ones have catered successfully, and it will surely not be the fault of the Press if growers do not obtain the information they require. Several books, too, both popular and scientific, have been produced during the year, which, presumably, find readers in the horticultural community; while I think nothing more clearly indicates the great number of persons who now take active share in gardening than the wonderful catalogues of various kinds that are sent over the length and breadth of the land. This great literary spread and feast of infinite variety shows that the field of Horticulture is a wide one, and the energy and enterprise of those engaged in it are sure to afford matter of interest.

Nor must one omit in looking back upon those enterprises, which have tended to the enjoyment of its members, the proceedings of the Horticultural Club. Its periodical social gatherings have afforded alike pleasure and profit; the papers read at its meetings, and which have afterwards, most of them, appeared in the gardening papers, have been highly appreciated; it has had the pleasure of inviting many foreign horticulturists to be its guests; it affords to those who attend the meetings of the Royal Horticultural Society the advantages of a good hotel in the most convenient position, and it is perhaps a happy augury for the future that probably the most successful gathering that has been had for some time was its last meeting for the present year. The Club is now twenty-two years old, and has been of incalculable benefit to Horticulture; and it must never be forgotten that it was at one of its meetings, many years ago, that a proposal was made which formed a new era in the annals of the Royal Horticultural Society, and which loosened the bands by which it had hitherto been bound.

As after a campaign the roll-call ever calls forth feelings of sorrow for those who have fallen out of the ranks; so year after year one has to record the gaps which have been made in *our* ranks, which always recall memories of those we have valued in past years. The gaps are not perhaps so numerous this year, but many of them are very noteworthy. Can we not say so especially of one who for so many years managed the affairs of the Journal, and who occupied so prominent a place amongst horticulturists—the late Dr. Robert Hogg? Many of us regard his loss not merely as a public man, but as a personal friend. For nearly forty years I had been associated with him as a contributor to the pages of the Journal. I believe I am the oldest regular contributor to its pages now; I think the only other contributor who can trace back his connection to so long a period is Mr. Robert Fenn, and he is only an occasional contributor. I need hardly say that nothing ever occurred "to strain our relations," and the Doctor and myself continued good friends to the very last. He is already much missed. His extensive knowledge of fruit made him ever a welcome member of the Fruit Committee of the R.H.S., and I am very thankful that his name will be held in continual remembrance, for some of his many friends have obtained a die which will be presented to the R.H.S., who will award medals struck from it at some of their exhibitions from time to time.

Another man well known to the older generation has also passed away in the person of Mr. James Bateman, whose beautiful place at Biddulph Grange (which displayed not only his knowledge of Horticulture, but also an artistic taste) was regarded as one of the chief gardens of interest in the kingdom. At that time he and Mr. Warner of Chelmsford were perhaps the two most prominent cultivators of Orchids, but their collections could not vie with those of Sir Trevor Lawrence and Baron Schröder in the present day. Mr. Bateman was a kindly man and a fluent speaker, who used often to recount his experiences in Guatemala and Mexico, to the great pleasure of all who heard him.

A contemporary of his, and one who was well known at the meetings of the Royal Horticultural Society, was Col. R. Trevor Clarke. He had an extensive and varied knowledge of plants, and was never more happy than when communicating information to some of his younger brethren. He was one of the recipients of the Veitch medal, and also of the gold medal of the Cotton Supply Association of Manchester for his experiments in the cross-breeding of cotton in order to obtain better varieties.

Another name which is very dear to us florists is that of the Rev. Charles Fellowes of Shottesham. All lovers of the Picotee and Dahlia know how much they are indebted to him for the raising of new and beautiful varieties. The rosarians also miss the cheery presence of the Rev. E. N. Pochin, one of the best judges of the Rose that I ever knew, and at one time a very successful exhibitor.

Another personal friend whose loss I mourn, but who never was much of a public man (one of the heads of the great firm of Messrs. Sutton & Sons), Mr. Alfred Sutton, will be sorely missed, not only amongst horticulturists but by many a man whom he has helped forward by his loving words and generous aid. He was ever foremost in all religious and philanthropic work, especially in his native town of Reading, and was one of those of whom it can be truly said, "and his works do follow him."

Mr. Head, too, the able garden superintendent of the Crystal Palace, is gone, and so, also, is Mr. Robert Owen, who had been so successful a raiser and cultivator of Chrysanthemums, while to men in the North of England the name of Mr. E. J. Baillie, the managing director of the great firm of Dickson's, Chester, recalls one who was ever valued for his genial and happy disposition. He was cut off in the prime of life, for he was only forty-seven when he died; he was a man of varied talents, a musician and an artist. Then, also, the loss is mourned of such well known and long respected men as Mr. James Cocker, Aberdeen; Mr. Charles Sharpe, Sleaford; Mr. James Webber, a familiar name in Covent Garden; and Mr. James Brown of Abercairney, who, as will be found on another page, passed to his rest on December 22nd. So one generation goes and another comes, and the world goes on as it has ever done.

And so, my friends, the veteran, as some are pleased to call him, or the old fogey as others represent him to be, has once more had his say with regard to the past, and once more wants to give encouragement to his younger fellow workers in the same cause for the future. No matter what may be the department in Horticulture to which your fancy leads you, there is everything to help you on. We older ones can testify to the great pleasure which our loved pursuit has given to us, and although we are old we can still love and cherish our favourites. The sportsman has to give up his gun, as he cannot see the birds as he used to do; the follower of the chase cannot save himself as he was wont to do—"his bridle and saddle are laid on the shelf;" the entomologist can no longer pursue *his* small game, but the lover of flowers need not abandon that which has given such pleasure in the past. Believe, then, one who speaks with the experience of fourscore years that some of your happiest hours will be those that you spend in your garden. Ever around you are there many lessons to be learned; the means whereby your thoughts may be lifted from the perishable things of time and sense to the eternal verities of our Father's kingdom.—D., *Deal.*

NOTES ON VINE BORDERS.

THE season has again come round when the bulk of Vine borders in gardens throughout the country will receive their annual overhauling and top-dressing. Early and second early houses will, of course, have been dealt with during the autumn, but as late Grapes are not as a rule cleared till Christmas, the border dressing does not receive attention till January. Comparatively narrow Vine borders seem to be much more general now than they were twenty years ago, and to my mind it is decidedly a step in the right direction.

At various times I have had to deal with numbers of Vines growing in borders of very limited dimensions, and with many more having wide ones for the roots to ramble in, and the difference in regard to the number and character of the roots found in the two types of borders has usually been very marked. I do not remember ever having seen a wide Vine border really well permeated with roots. This fact alone should show us that great width is not required; indeed, it is a distinct drawback, because if Vine roots do not ramble through the whole of the soil at their disposal during the first few years such soil becomes sour, and roots avoid it, to seek the food given in the form of top-dressings. I am convinced that Vine borders from 6 to 8 feet in width and 2½ feet in depth are large enough for all purposes. I have frequently helped to reduce the size of borders—especially inside ones—and in each instance the results justified the procedure.

When preparing for top-dressing I remove loose surface soil, clear it out of the house, and then point the border over with a fork. If plenty of fibrous roots are found the fork is only allowed to penetrate the soil about an inch in depth, but if few are noticed another layer of soil is removed till roots are met with, as it is quite useless to add fresh soil, unless it is placed where active feeders will soon find their way to it. It is an excellent plan to dig a hole every year or two near the extremity of the border to find out whether or not the roots are working freely there. If few roots are found, a trench should be taken out along the whole length of the border from 2 to 3 feet in width, and any good roots that are met with be tied back and carefully preserved.

The old soil must, of course, be wheeled away to make room for fresh. An excellent compost for filling in such trenches is one made by mixing thoroughly with six barrowloads of good turfy loam one of horse droppings, one of lime rubble, a half-bushel of half-inch bones, and three shovelfuls of soot. Before this is placed in the trench, the drainage at the bottom should be cleared, and, if necessary, increased by adding another layer of clinkers or broken bricks, to be covered with straw, turf, or bracken. As the work of filling the trench proceeds, the preserved roots already referred to should be spread out evenly in the soil, have the points cut with a sharp knife, any long fibreless ones being "notched" as well to induce them to send out fibres.

It is important that as large a number of roots as possible should be brought up to within 9 inches of the surface of the border, for they will generally go down fast enough, although we may hold out many inducements to keep them near the surface. After the trench has been filled up, and the soil pressed moderately firm, the whole of the border will be ready for top-dressing. For this purpose a compost almost identical with the one already referred to will answer well, the only alteration needed being to substitute bonemeal for half-inch bones. I like to have the soil fairly loose upon the surface, as it usually gets pressed down when attending to the necessary work among the Vines.

Now let us turn to the consideration of Vines growing in narrow borders. I have grown excellent early Grapes from Vines in a border only 2½ feet in width. Very high feeding was of course given, and as the border was bounded by a brick wall, which stood several inches above the surface of the soil, it was always an easy matter to soak the soil thoroughly when water was given. The great point to attend to in connection with borders of this description is never to allow them to become really dry during the growing season, or the Vines quickly receive a severe check, and many roots are killed. Their advantages are, that the roots being under complete control, it is easy to know exactly how to treat them.

If after a few years the limited quantity of soil that was provided becomes exhausted renovation is an easy matter, because we get no long straggling roots, but a mass of fibres instead similar to those which pot Vines produce. All good cultivators know that Vines of this description can be lifted entirely out of the border, and after the old soil has been removed be replanted in fresh compost without receiving any great check. At the annual winter dressing the surface soil should be removed—it usually only requires to be scraped off—and a coating of very rich compost given. The plan I adopt is to sprinkle a coating of granulated bonemeal over the roots and then cover with a 6-inch top-dressing of the following compost:—Three parts loam, one part horse droppings or cow manure, half a part wood ashes with a little soot added. The whole surface is then covered with a sufficient thickness of leaves or rough manure to prevent frost from reaching the Vine roots, if the border is an outside one, if inside the latter covering is omitted.

Wide Vine borders have, I think, had their day, for although sometimes they prove successful, they are uncertain as a rule, and it has always been extremely difficult to know exactly where the bulk of the roots were in such a great body of soil. As a young man I remember helping to top-dress the borders in a long range of vineries for several years in succession, but very few roots were ever noticed. The Vines in one house were lifted the next season, when we found that nearly all the roots were at the bottom of the border, just over the drainage, and it was evident that the top-dressings could have done little, if any, good to roots so far from the surface. Narrow borders must be kept packed with roots if the Vines are to succeed, and when such conditions prevail, we know that every particle of soil and manure given are turned to good account by the Vines.—VITIS.

DEATH OF MR. JAMES BROWN OF ABERCAIRNEY.

IT is with deep regret that we record the death of Mr. James Brown, gardener for over forty years at Abercairney, Perthshire (the splendid domain of Captain Drummond Moray), on December 22nd. Mr. Brown was for many years a keen and most successful exhibitor of vegetables and hardy fruits. At Perth, Dundee, Edinburgh, and Glasgow his skill was strikingly exemplified by his superior products. His services as a judge were much sought after, and by his knowledge and care he commanded the esteem and confidence of exhibitors. Captain Moray highly appreciated the work of Mr. Brown, who, through a long course of active service showed much devotion to duty and his employer's interests. Abercairney was the home of the Mackintoshes of Dalkeith and Drumlanrig, and is one of the most beautiful seats in Scotland.—M. TEMPLE, *Carron*.

FIG. 90.—MR. JAMES BROWN.

[We reproduce a portrait of Mr. Brown, who was one of the best of British gardeners, and a most genial and excellent man.]

GRAPES AT TILEHURST.

HAVING been asked for the week's Journal containing my reference to this subject, commented upon by Mr. Bradley last week, I cannot refer to it, but I do not think I threw any discredit on Mr. Bradley's statements. So far from that I took them as they were, and made my own deductions. Now, we were told that the house is 151 feet long, that it had Vines planted at 5 feet apart, each Vine carrying two rods, which would of course be at 2½ feet apart only. It is not of the least importance that a portion of the roof is covered with supernumerary Vines, because we all know that if the rafters be 15 feet in length, and the rods, whether from permanent or temporary Vines, cover the roof, it is impossible to train them closer together than 2½ feet, as to do so would be reckless culture and cropping.

Anyone can see that on each side of the house there could not possibly be more than sixty rods, or 120 in all, each of the length of 15 feet at the least. Now if anyone will take the trouble to divide 4635 bunches by 120 rods, each 15 feet long, it will be seen that the average number of bunches per rod was, as I previously said, 38½, or at the rate of one bunch to at least every 5 inches. Then if these were so good relatively that there were at the rate of 1½ lb. to each bunch, the total weight per rod could not have been less than about 58 lbs. As I have before said, it is immaterial whether these 15 feet lengths of rod be produced by one or two Vines, there is the statement as to the quantity carried; and I think there are few readers but will agree that such a crop is not only excessive, but astonishing. No wonder I said that it could hardly be termed cultivation, but it certainly is production. The photo of the vinery has been sent to me. It is disfigured by three men in the foreground, which "dwarf" everything else in comparison; in other respects it appears to differ nothing from many photos of similar houses I have seen.—A. D.

ONCIDIUMS.

IT is doubtful if a more generally useful genus of Orchids could be named than Oncidiums, the flowers appearing all through the year, lasting well, and of the richest and most beautiful colours. To take the genus as a whole it will be found to contain a large percentage of yellow flowering species—a much larger than any other—but the yellows are so varied and, moreover, so delightfully blended in the blossoms with other rich tints, that no suspicion of sameness exists. To grow all under one mode of treatment, and in one house, is impossible; in fact few genera require such a varied treatment. To touch ever so lightly upon the culture of all the kinds would require a great deal of space, but a few remarks on those now flowering may prove of interest.

There are one or two of the crispum set in bloom, but these have recently been noticed. Of quite a different class is the charming little O. cucullatum, with which, for convenience, we may bracket O. nubigenum, O. Phalænopsis, and O. olivaceum, besides one or two other varieties more or less beautiful and popular. Descriptions of these are probably unnecessary, as most of them are well known to readers. Their culture is not difficult, and one and all are useful and beautiful plants, distinct in colour from the majority of Orchids, and fine subjects for the cool Orchid house.

None of them likes large pots; the roots seem to delight in growing close together, over one another, and round rough bits of charcoal and crocks rather than push far from the centre of growth. Coming as they do from high up on the mountains in New Grenada, light and air are among the chief necessities. In fact, all through the late autumn and winter months it is quite impossible to give the plants anything like as much light as they want, and the pale, sickly looking foliage and pseudo-bulbs of many cultivated plants tell only too plainly of the pining of each and all for light and air. Compost is a secondary matter. In a well aërated and divided medium the roots will thrive, be this peat moss or any other material.

Moisture at the roots is an important item, and without this good results are not to be looked for. Drainage then will be needed, for unless there is facility for the moisture to escape the compost soon gets into a bad, unhealthy state. Another charming, sweetly scented kind is O. cheirophorum, also a native of Alpine heights in New Grenada, and requiring similar treatment to that noted above. It pushes up its delicate spikes of flowers in late autumn, and is now in good condition in many collections. Although the individual flowers are but half an inch or so across, they are closely set and very brightly coloured, the yellow ground being among the brightest in the genus.

O. Cavendishianum is a grand species, and it is difficult to say why it is not more grown. There seems to be an idea among cultivators that all the bulbous kinds are difficult to grow; but however true this may be of some, it cannot be said of this one. The large fleshy leaves seem to hold nutriment in even a greater degree than the pseudo-bulbs of some kinds, and month after month will the plants carry the immense panicles of bloom. The spikes rise a yard in height, or thereabouts, and upon the upper portion produce a score or two of the most beautiful yellow blossoms, the ground colour being overlaid with very small crimson or brownish dots.

The best place to grow O. Cavendishianum is in the Cattleya house, though it is not fastidious, and if necessary can do with more heat. The roots are large and very freely produced, liking a rough, open description of compost over good drainage. During the time growth is active, and this is usually from March till the late autumn, plenty of water is required; but when the leaves are fully developed they are safer on the dry side. It blooms every season, and while the spikes are pushing up is apt to be attacked by green fly. If a damp sponge is passed lightly up the spike daily the insects will all be got rid of easily, or where many plants are grown a couple of light fumigations may be given.

O. Jonesianum is also in flower just now, this and its varieties having a fine effect arranged among some of the smaller Adiantums. Considerably more heat, a sunny position, and a very moist atmosphere are necessary for this plant. In habit it differs from the majority of Orchids, having Rush-like, almost terete leaves and very small pseudo-bulbs or stems. From eight to twelve flowers occur on a spike, and these are whitish, the sepals and petals being somewhat heavily marked with chestnut brown. The plants do best in rather small receptacles, and I have seen fine specimens on blocks of cork. If grown in baskets these may be nearly filled with crocks, a light surfacing of peat and sphagnum moss sufficing. It is a native of Paraguay, and was introduced in 1883.

There are several other kinds one often comes across at this time of year, such as the charming little O. ornithorhyncum, the Butterfly species, O. Kramerianum, and O. papilio, while O. tigrinum is hardly over yet, and O. splendidum just coming on. But one that calls for special note is the beautiful O. varicosum, a plant without which no collection is complete. It produces its grand spikes all through the winter, and if only reasonably treated is easy of cultivation. Keep the rooting medium sweet and open, give the plant plenty of moisture while growing, and a genial intermediate temperature, then all will be right. Such plants flower freely, and carry the blossoms well, but to let a half-starved and weak plant keep its flowers on too long is fatal. —H. R. R.

SCHEDULE MAKING.

I TRUST our good friend, Mr. Easter, is a better gardener than schedule maker. What trouble to exhibitor and judge would be behind that suggested class, "A collection of ripe dessert fruit, eight distinct kinds, two varieties of Grapes allowed, three black and three white.' If that is not a pretty mix of epithets then I am confused. Mark the requirement, "eight distinct kinds." Does Mr. Easter mean that as one of the kinds two varieties of Grapes may be shown? If so, that would make nine dishes. I do not suppose he means anything of the sort, but if he means "eight dishes of fruit, distinct kinds," then he cannot admit two dishes of Grapes, because Grapes are one kind only. Then he adds, "three black and three white." Three what—varieties or bunches, which is meant?

No doubt he meant bunches, but if he did then he should have said so. Now, this is a capital sample of schedule wording, such as is enough to drive any ordinary judge as well as exhibitor mad. If the class read, "A collection of eight dishes of fruit, distinct kinds, black and white Grapes (three bunches of each) being regarded as distinct kinds," no doubt or difficulty could arise. As to the question of flavour or appearance, it is evident that when flavour is specially desired all the fruits would have to be tasted, a serious trouble in the case of several collections, unless it were agreed to take flavour for granted, according to variety, when the decision after all would have to be determined by appearance. Collections of fruits of any sort, not to be absolutely tasted for flavour, must be judged by appearance only. After all, discussion of this nature does but show how difficult it is to frame classes that are absolutely unobjectionable, and how much trust must be placed on the common sense of judges.—D.

REST IN PLANT LIFE.

ALTHOUGH comments have been made by two correspondents on my recent observations on this subject, I fear we are not much nearer to a perfect definition of what is "rest" so called in relation to plant life. Is it assumed that, like animal life, there has been on the part of plants actual physical exhaustion, and that rest, which we call sleep, is absolutely essential to them? "H. R. R." proves in the case of his typical Peach tree that there is no such thing as actual rest, because he shows that even if the wood be leafless the roots are active. Now, what we want to know is, in such a case what are the roots doing during the period of defoliation, or "rest," and what changes are being, through their activity, effected in the sap formation or cellular tissue of the wood during this rest period? What I hold is that mere defoliation on the part of a Peach or any other tree or shrub does not necessarily imply that it is resting, but simply that whatsoever of active operations are proceeding in roots or wood is not visible to us, hence our deduction that the tree is resting, or in a comatose state.

Rest implies recuperation; that is to say there has been physical exhaustion that has to be made good through a season of rest or of non-productiveness. Well, is that so? I want to set up no empirical theories, all I wish is to learn. We can all draw our own inferences from what we see, but may all the same entirely fail to understand what are the operating causes, and why they operate. When I take exception to the use in ordinary phraseology of the term "rest" as applied to plants, I do so because I want it to be more exactly described, explained, elucidated. I fear, after all, our knowledge of plant physiology is too imperfect to enable this complete explanation to be furnished. The study of plant life is indeed a beautiful and attractive one. It is as much so as is animal physiology, but with the pleasing addition that there can be no painful and terribly cruel vivisection associated with it.—A. D.

PINE APPLES.—A prominent importer of Pine Apples stated a day or two ago that it was probably safe to say that upon an average there are 10,000 Pines imported into London every week throughout the year. They are coming now in enormous quantities from the Azores, which seem to have given up growing Oranges and have taken to this new cultivation, for which their soil and climate seem to be admirably adapted. Pines are still too dear to be a popular luxury. The average wholesale price is said to be 3s., and the retail buyer has to give 4s. 6d. or 5s. for a good Pine this Christmas. But the growing of these is rapidly extending, and there is every probability that the price will go down.

BASKERVILLE HOUSE.

SITUATED at Harborne, upwards of three miles to the west of the busy city of Birmingham, is the charming seat of Fred Ryland, Esq. The estate was purchased by its present owner ten years ago, and comprises about thirty-five acres of, in general, a good holding loamy pasture land, and is sufficiently furnished with old-established trees—chiefly Oak and Ash—to give it a park-like appearance. This feature has been accentuated by judicious planting. The principal entrance to the demesne is distant about a stone's throw from the mansion, the carriage drive being lined on each side by a row of Lime trees, planted probably about twenty-five years ago. It is being, however, supplanted by a new and more extended route commencing a short distance from the original entrance. The new approach has a serpentine form, and is in pleasing contrast to the straight-lined original, as well as affording greater privacy from the public road. A considerable portion of the new drive has been furnished on each side with fine Golden and Silver Variegated, and Green Hollies, removed from the grounds under the superintendence of Mr. Thos. Hirst, the experienced head gardener, whilst large masses of trees and shrubs in variety are introduced behind the avenue so as to harmonise with the shrubbery more contiguous to the mansion, which is in the Italian style of architecture. By virtue of its open and high altitude, about 600 feet above sea level, the mansion commands a splendid view of the famous range of the Lickey and Clent hills lying to the south-west, which, in conjunction with the intervening varied arboreal and pastoral landscape, affords a picture of no ordinary beauty.

Immediately after securing the property Mr. Ryland resolved to effect considerable improvements, and an extension of the ornamental grounds, for which latter purpose the services of Mr. H. E. Milner, the eminent landscape gardener, were requisitioned, and with the happiest results. Subsequently, however, several additional alterations have been conceived and effected by Mr. Ryland himself. The whole of the estate has an aspect gently trending towards the south-west, and the major portion of the more immediate surrounding scenery beyond the confines of the estate is such as to convey the impression that the latter is larger than is really the case.

In the elaboration of his designs Mr. Milner materially altered and extended lengthways the existing old terrace at the south front. The edge of the terrace—as seen in the illustration (fig. 91)—was furnished with a Yew hedge in substitution of a stone wall, a feature harmoniously blending with the climber-clad façade and the surrounding adjuncts. Between the hedge in question and the gravelled terrace walk is a narrow bordering of grass containing four stone vases, intervened with narrow oblong flower beds. The end of the terrace terminates in a kind of rampart, round the edge of which there is an extension of the clipped evergreen parapet wall.

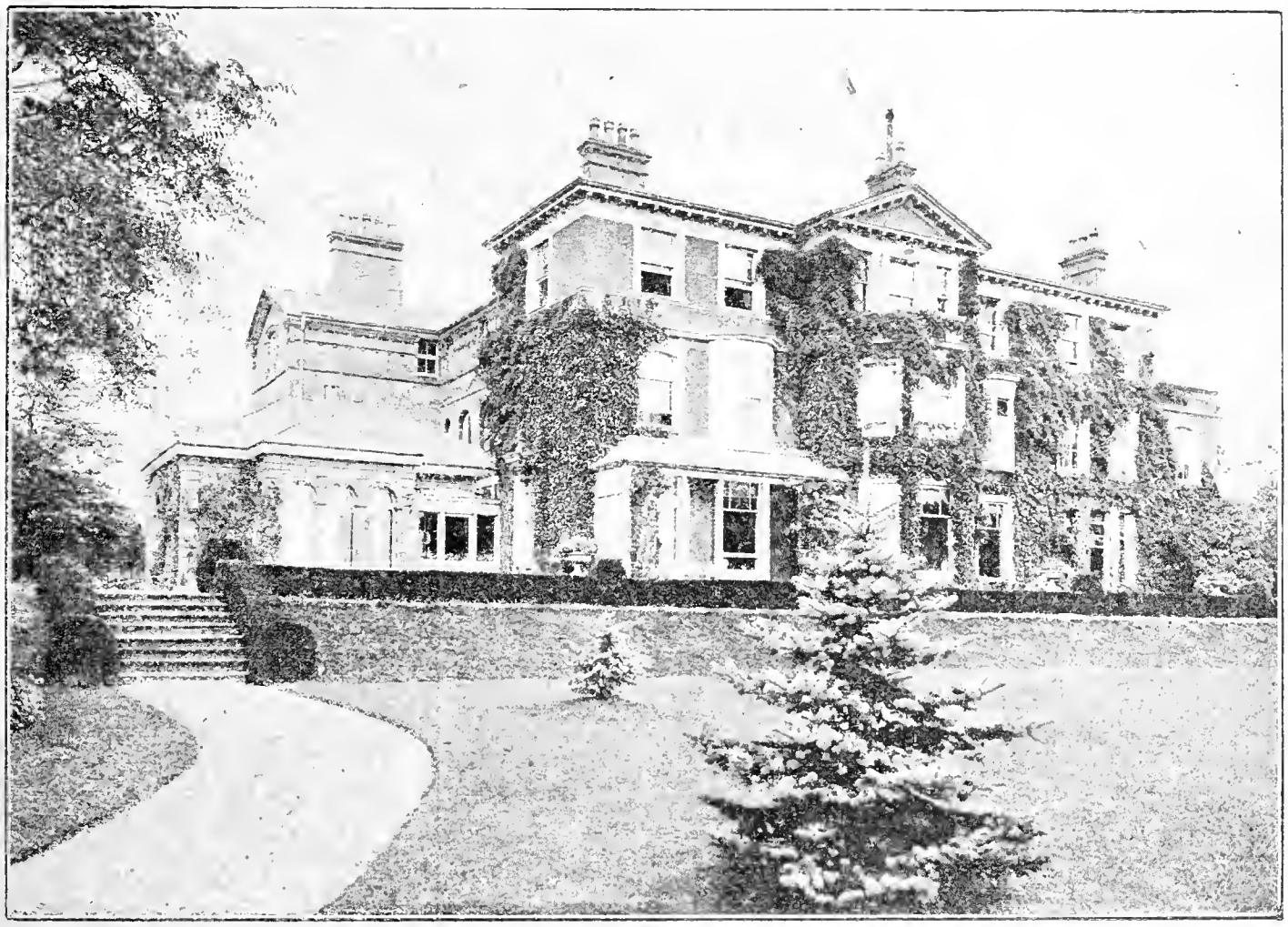

Photo by H. Stokes, Birmingham.

FIG. 91.—BASKERVILLE HOUSE.

From this coign of vantage, in a westerly direction, is obtained a view of the pretty semi-dell-like bit of scenery immediately below. The centre portion of this (as seen in fig. 92, page 622) consists of Yew hedge design, whilst the steep face of the terraced rampart is faced with a pretty natural stone rockery, embellished with a small but choice selection of alpine flowers, and through the centre of which winds a streamlet. The exterior portion of the dell is appropriately planted with groupings of shrubs and ornamental flowering trees, including Lord Penzance's Sweet Briars and flourishing specimens of the charming Cytisus Andreanus, novelties without which no collection of shrubs can be considered complete. Immediately below the terrace, at its south frontage, is a very considerable extension of the old lawn, bounded by shrubberies sufficiently disposed, whilst several ornamental beds distributed here and there, and variously filled with such dwarf shrubs as Pernettyas, the Irish or St. Dabeoc's Heath (Menziesia polifolia and alba), Andromeda floribunda, Daphne cneorum, Ericas, and Rhododendron ovatum, which impart a pleasing effect to the scene. To break the flat surface of those portions of the ground on the exterior of the lawn mounds and undulations were formed, and now present a nature-like effect.

Extending away to the left or eastern side of the grounds is a continuation of shrubberies and lawns, and in which Rhododendrons and specimen Hollies in variety form a conspicuous feature, whilst beyond, in a secluded spot, is a rosery. Situated between the latter and the eastern end of the terrace what was formerly a somewhat formal oblong pond, not remarkable for pictorial effect, has been changed to a pleasing dell (fig. 93, page 623), well embosomed by banks of trees and shrubs (Rhododendrons chiefly), diversified with beds of Ghent Azaleas and other appropriate shrubs. Extending beyond that portion of the grounds already described is an open and expansive acreage of park-like pasture.

Proceeding from the west side of the mansion the visitor comes to what was formerly the old kitchen garden, now converted into a reserve garden for the cultivation chiefly of Roses, Carnations, Liliums, and herbaceous flowers, and which are under the special charge of Mr. W. Charlton. It may here be remarked that both Mr. and Mrs. Ryland—like the latter's illustrious brother, Mr. Joseph Chamberlain, the Colonial Secretary—have a strong penchant both for hardy herbaceous flowers and ornamental shrubs. At the far end of this garden are the houses, solely for the production of plants and cut flowers, excepting an old vinery. The garden is enclosed by a Thorn hedge. Leading in a southerly direction downwards, bordering the west side of the pasture already mentioned, is a belting of trees and shrubbery, faced with a bordering of herbaceous and other plants, including annuals, to the grounds below and the ornamental lake (fig. 94, page 625), all of which afford a striking and most effective feature, whether viewed from the mansion or in closer proximity. The formation of the lake and its contiguous surroundings of shrubberies and hardy herbaceous flowers entailed a considerable expenditure both in money and labour, owing principally to the steep incline of the natural surface of the ground. In juxtaposition at the head of the lake there is a secluded nook, which has recently been converted into a bog garden, a happy conception of Mr. Ryland's own, successfully carried out by Mr. Hirst. It is furnished with a variety of suitable plants. The supply of water is derived from the ground above, and the overflow trickles through a rocky channel into the lake close by. Altogether this combined portion of the grounds affords a charming retreat, and is rendered further attractive when the comparatively young plantation of Apple and Pear trees is in bloom.

The foregoing brief and inadequate notes must close with a slight reference to the new vegetable garden, lying out of sight of the house, and the well kept grounds to the right hand of the lake and its surroundings, likewise of the considerable extent of plantations and beltings of trees and shrubs dispersed over other parts of the estate.—W. G.

Notes & Gleanings

WEATHER IN LONDON.—Christmas has come and gone since our last issue went to the machines, and we have had a touch of seasonable weather. Throughout Thursday, Friday, and the morning of Christmas Day London was enveloped in a dense fog, the last two days, with Sunday, being cold, owing to the prevalence of sharp white frosts. On Monday it was much warmer, with rain in the evening and night, as well as on Tuesday morning. Later in the day it cleared, and the stars shone brightly at night. Wednesday morning was very wet.

—— JOURNAL OF THE ROYAL HORTICULTURAL SOCIETY.—The last number (vol. xxi., part 2) of this publication is now before us. Besides other matters of interest, it comprises papers on "Mutual Accommodations,' by the Rev. G. Henslow; "What Can We Do at Chiswick?' by Dr. Maxwell T. Masters; "Garden Insects," by Mr. W. D. Drury; "Insects and Fungi in U.S.A.," by Mr. S. C. Lamb; "Crossing Florists' Flowers," by Mr. Jas. Douglas; "The Plum," by Mr. Alfred H. Pearson; "Nepenthes," by Mr. Harry J. Veitch; and "Persian Cyclamen," by Mr. W. Iggulden. The price (to non-Fellows) is, as usual, 5s.

—— BIRMINGHAM GARDENERS' ASSOCIATION.—A comprehensive and practical paper, contributed by Mr. H. Dunkin, on "Strawberry Culture," was read in the absence of the essayist, by Mr. J. Hughes, the Secretary, at the fortnightly meeting, held on the 20th inst. at the Athletic Institute, before a moderate assembly of the members. In addition to the several systems of culture which have been practised in this country, reference was made to the enormous crops of Strawberries grown in Kent, and that as many as seventy-five tons had been despatched from Swanley station in one day. A list of several of the best known old and new varieties was given. The reading of the essay led to an instructive and pertinent discussion, more particularly in regard to the varieties tried in the Birmingham district. A hearty vote of thanks was directed to be sent to Mr. Dunkin for his interesting paper.

—— READING HORTICULTURAL SOCIETY.—The last fortnightly meeting for the season 1897 of the above Association was held recently in the Abbey Hall, and was presided over by Mr. C. B. Stevens. A large number of members attended to hear a paper entitled, "A Chat about Chrysanthemums," by Mr. H. J. Jones of Lewisham, the well known exhibitor and grower. The paper was given in a very interesting and "racy" manner, and was full of practical hints and illustrations, and was greatly appreciated. Messrs. Sutton & Sons sent some beautifnl specimens of Cyclamen; Mr. Townsend, Sandhurst Lodge Gardens, grand plants of Primula obconica; Mr. Bright dwarf plants of Chrysanthemum W. H. Lincoln, showing the decorative value of plants grown in 3-inch pots; Mr. Bradley, Tilehurst Nurseries, cut blooms of Chrysanthemums and a basket of Mushrooms; and Mr. Woolford, The Gardens, East Thorpe, Begonia Gloire de Lorraine.

—— OUTDOOR TOMATOES.—That this popular vegetable can be grown successfully under the shelter of walls is abundantly testified in the illustration on page 579. I have had a similar crop grown in the same position, with the exception that in Mr. Empson's case the frontage is of glass, whereas mine is 4 feet of brick wall before the glass (roof) is reached. On that being attained I allow the plants to continue their course up the glass. I find this does no harm to the inmates of the house, but, on the contrary, if the foliage of the Tomatoes is reduced it acts as a medium shade from the midday sun. Does Mr. Empson mean in his last paragraph that he does not renew his soil in the confined space at all when he says "it is the sixth year he has grown them on the same ground?" This year is the second that I have done so, and with periodical dressings of artificial manure the crop has been satisfactory in every way. The plants must be got out as early as possible. In my case they were sheltered by frame lights laid lengthwise, these being again needed as temporary coverings as autumn approaches to complete the ripening. I grew Sutton's Perfection, Best of All, and Eclipse; the last named was the best of the trio. I see Mr. Empson's plants, like my own, have the inevitable curl of the leaf. I attribute this to occasional dryness at the root rather than to any other cause. They are not affected until about a third of the season is over; or can it be the terrible eelworm in disguise?—GEO. DYKE, *Stubton Gardens, Newark.*

—— GARDENING APPOINTMENTS.—Mr. H. Baldwin, for the last three years foreman at Galloway House, Garliestown, N.B., is appointed gardener to Captain Gower, Castle Malgwyn, Cardigan. Mr. G. Fulford, late gardener at West Park, Damerham, Salisbury, has been appointed gardener and bailiff to A. G. Sandeman, Esq., Presdales, Ware, Herts.

—— THE LAST ROSE OF SUMMER.—Mr. J. Croal, Stone House Gardens, Haslingden, writes:—"I have to-day (December 24th) cut a Général Jacqueminot Rose from the open ground after two nights, on each of which 8° of frost were registered. This is certainly the highest town, if not the highest garden in Lancashire, and surely one is justified in calling this the 'last Rose of summer.'"

—— A ROTHESAY GATHERING.—On the evening of Thursday, December 23rd, Messrs. Dobbie & Co, Rothesay, held their annual social gathering. The New Public Hall was requisitioned for the purpose, and the proceedings took the form of a tea, to be followed by dancing. The company numbered 200, and comprised besides the employés all the members of this enterprising firm. One or two seasonable speeches were made, but these were not made a great feature of, as the desire of the firm was wholly for a social evening. There were songs and instrumental music, with dancing, and a most enjoyable evening was passed.

—— HESSLE GARDENERS' SOCIETY.—A meeting of the above Society was held on Tuesday, December 21st, Mr. Geo. Picker in the chair. Mr. J. Hardy, gardener to Lieut.-Col. Sir Gerard Smith, gave a brief but practical essay on the "Cultivation of Vegetables." The essayist did not go very deeply, but mentioned a few of the leading varieties, and gave a short cultural account of each. The long and animated discussion which followed amply repaid for the shortness of the essay. The Chairman showed a splendid collection of Apples, which obtained the Society's maximum number of points. There was only a moderate attendance. A hearty vote of thanks to the essayist and Chairman terminated a very enjoyable evening.—G. W. G.

—— CACTUS DAHLIAS.—I enclose a copy of the National Dahlia Society's list of Cactus Dahlias for 1898, which I think will be of interest if you can find space for it:—Alfred Vasey, Annie Jones, Annie Turner, Arachne, Beatrice, Bertha Mawley, Britannia, Capstan, Chas. Woodbridge, Cinderella, Countess of Gosford, Cycle, Daffodil, Delicata, Earl of Pembroke, E. J. Deal, Fantasy, Fusilier, Gloriosa, Harmony, Harry Stredwick, Iona, Island Queen, J. E. Frewer, Juarezi, Keynes' White, Lady Penzance, Mary Hillier, Mary Service, Matchless, May Pictor, Miss A. Nightingale, Mrs. A. Beck, Mrs. A. Peart, Mrs. Barnes, Mrs. Gordon Sloane, Mrs. H. Cannell, Mrs. John Goddard, Mrs. Leopold Seymour, Mrs. Montefiore, Mrs. Wilson Noble, Night, Regulus, Robert Cannell, Starfish, Tillie, and. Violet Morgan.—J. F. HUDSON, *Hon. Secretary, The Gardens, Gunnersbury House, Acton, W.*

—— EYNSFORD COTTAGE GARDENERS.—On Thursday, Dec. 16th, the last lecture of a series of six was delivered for the Technical Education Committee of the Kent County Council by Mr. W. P. Wright. The meeting was a very large one, the number reaching 110, which is a record for the village. The leading plants were dealt with briefly, the lecture being compressed to permit of several prizes being distributed to allotment holders by Mr. Henry Cannell, who had been unanimously voted to the chair. The excellent Secretary, Mr. E. D. Till, in the course of some very interesting remarks, said the event of the evening was the presentation to Mr. W. Howard of Mr. H. M. Pollett's silver cup, given to commemorate Mr. W. Howard's sixty years' tenure of his Eynsford allotment. All were deeply indebted to Sir Percival Hart Dyke, Bart., the grandfather of the present M.P., for initiating the allotment system in Eynsford. They were also indebted to the public spirit of Mr. Pollett for bestowing the silver cup; but, after all, it was the enterprise and industry of William Howard which attracted hearts that evening. Although the cup records the jubilee period of sixty years, it was nevertheless sixty-six years since Howard trenched his allotment. He planted a Winter Queening Apple sixty years ago, and a sieve of fruit shown at the meeting was a small sample of this year's crop. Mr. Till said he could not do better than quote Howard's own words, which quaintly connected cause with effect, in reference to the Winter Queenings, "If I hadn t' a' planted that ere tree I shouldn't a' had all this here fruit." Mr. Cannell accompanied the presentation with a few happily chosen words, and the recipient then said how thankful he felt to the donor, and to those present, for the honour they had done him. He spoke of his endeavour to treat his allotment well, and how he had regularly removed the earth round his tree, and treated it to a good dressing of manure. There was a splendid display of vegetables from the allotments and from Messrs. H. Cannell & Sons. Votes of thanks to the Chairman, Secretary, and the lecturer brought this successful meeting to a close.

—— Weather in the North.—From the 14th to the 21st inst., with an occasional touch of frost, and the 18th a good bright day, dull and changeable weather prevailed. Then followed (21st to 24th) three days of keen frost averaging about 12°, accompanied by unusually dense rime. On Christmas Eve the frost gave way ; Christmas Day was raw and cold, and since then rather high winds have occurred and a good deal of rain has fallen. This continued on Tuesday morning which was windy and wet.—B. D., *S. Perthshire.*

—— A Multum in Parvo Diary.—Messrs. Lever Brothers, of "Sunlight" fame, send us what they call the "Waistcoat Pocket Diary" for 1898. It fits easily into that familiar receptacle, is 3 inches long, 2 inches wide, and ¼ inch thick, gilt-edged, contains tables on money, mensuration, and sundry other things, space for entries of various kinds for every day in the year, with blank pages for addresses and memoranda ; it is clear, good, and a model in condensation, meriting the name which we have ventured to give it—a veritable sound English lever that ought to keep us up to time during the coming year.

—— Some Rare and Expensive Drugs.—A writer in the January number of "Chambers' Journal" throws some interesting light on rare and peculiar drugs. Saffron, he points out, would strike an ordinary observer as decidedly expensive at 56s. a pound, until told that it is composed of the central small portions only of the flowers of a Crocus, 70,000 of which it takes to yield the material for one pound. Otto of Roses sells at £28 odd per pound, and it takes 10,000 pounds—or nearly five tons—of Roses to obtain one pound of the oil. Aconitine, extracted from the root of Monkshood, is said to be the very strongest poison extant, the dose being 1-600th of a grain. It is sold at the rate of £27 per ounce !

—— Professor Huxley and his Flowers.—The "Westminster Gazette" says some interesting glimpses of the late Professor Huxley's home life are given by his son, Mr. Leonard Huxley, in the "Century" Magazine. In his later years especially the Professor took great interest in his garden. "I begin to think with Candide,' he writes in 1881, "that *cultivons notre jardin* comprises the whole duty of man." From this time his letters contained many references to the garden. His son writes :—"After his long battlings for his early loves of science and liberty of thought his later love of the tranquil garden seemed in harmony with the dignified rest from struggle. To those who thought of the past and the present there was something touching in the sight of the old man whose unquenched fires now lent a gentler glow to the peaceful retirement he had at length won for himself. His latter days were fruitful and happy in their unflagging intellectual interests set off by the new delights of the *succidiam alteram*, that second resource of hale old age for many a century." All through his last and prolonged illness he longed to hear how the garden was getting on, and would ask after certain flowers. These children of his old age helped to cheer him to the last.

—— An Eminent Lady Horticulturist.—The Duchess of Sutherland, like her sister the Countess of Warwick, is an earnest horticulturist. At Trentham a great speciality is made of Orchids, especially Cypripediums and Odontoglossums, also of the finest Malmaison Carnations, which are splendidly grown by Mr. Blair. At Littleshall in Shropshire there is an extensive Rose garden, which she carefully superintends ; while at Dunrobin Castle there are millions of Snowdrops, her head gardener, Mr. Melville, taking a deep interest in their welfare. There is also at Trentham a unique collection of Oriental and American Lilies, many of which, however, as the soil is not entirely favourable for their cultivation—notably L. giganteum and L. longiflorum Harrisi—are grown under glass, and much used for the decoration of Stafford House. The Duchess of Sutherland, who is a daughter of the late Earl of Rosslyn, inherits her distinguished father's literary gifts, and especially his intense love of Nature, which, as her recent article on Sicily in "The Lady's Realm," sufficiently indicates, is her predominating theme. The Duchess has also proved in this and other contributions to periodical literature that she can write very gracefully upon the subject of horticulture. Some years ago she gave to the world an interesting book entitled, "How I Spent my Twentieth Year," which has passed through several editions. —David R. Williamson.

NOTES ON PEARS.

The contribution by "J. H. W." (page 572) will be accepted as a corresponding experience with that of many of the Journal readers, and the last paragraph is particularly applicable to my case when he says, "All are ripening a month earlier than usual, and, what is worse, remaining a much shorter time in prime condition." Such a disappointing trait in the Pear supply leads to many difficulties, and explanations in numerous cases have been oft repeated between gardeners and employers when a poor supply only is forthcoming and the usual demand a heavy one. Where there is provision made for a fruit supply in gardens—and it is a poor garden indeed that has not a collection of fruit trees—owners, as a rule, do not care for the alternative of procuring their supply, probably of foreign growth, from the fruiterer.

The unfortunate part of a fruit failure with many employers uninitiated in its growth is their inability to grasp what influence frost has on the tender flowers in the spring, or a mild autumn and early winter in the keeping of the fruit when there is a crop, light or heavy, as the case may be. It is true there are other contributory causes for the failure of trees to bear fruit beside the action of frost on the tender blossoms, none of which is more certain than when trees are left alone at the roots, and closely pruned about their heads. This unequal balance between branch and root is sure to bring about an unfruitful disposition on the part of most trees, but particularly in Apples and Pears. The closer and severer the pruning, the stronger is the resultant lateral growth, and the hope for fruit buds become less each year, until a balance has been effected by a proportionate shortening of the thong-like roots, which are the actual offenders. In gardens having a clayey subsoil trees seem more prone to go deeply than on gravelly stations. There would seem a peculiar attraction in sandy clay for the roots of trees, but whether it be of a light or heavy nature, it results in the same strong unfruitful growth once roots penetrate deeply into it. Canker, too, comes from the same cause, especially in ground not well drained.

To prevent this deep root growth some growers employ large stone or slate slabs immediately beneath the trees, while others will put in a bed of concrete, either of which prevent tap roots from descending immediately beneath the trunk or stem. It is these centrally situated roots that give so much trouble in the course of root-pruning, especially in a large tree, and there is sure to be disappointment if only one strong root remain unsevered.

I well remember removing some fairly large Pear trees a few years since that had never given any trouble at their roots, and always produced a wealth of blossom in the spring. These satisfactory conditions were brought about by a layer of lime refuse, perhaps 8 inches in thickness, about 1½ foot from the surface. Not a root ventured to penetrate this mass of dry lime, and the object of the planter completely obtained. It is quite true that material of this kind in quantity is seldom to hand at planting time, but certainly where deeply rooting and barren trees are troublesome it would be well worth the labour in carrying out a similar provision in the planting of additional or replacing worthless ones with young trees from the nursery.

Commenting on the shortness of the crop of Williams' Bon Chrêtien to a large fruiterer in the late summer, he remarked, "Well, I am very glad," and on my inquiring his reason, he said, "I lose more on that variety than on any other during the season, simply because there are invariably such heavy crops." This bears out what "J. H. W." says in his notes of the reliable cropping of the Bon Chrêtien. Doyenné du Comice with me is unsatisfactory as a pyramid, and what fruits there are wasps, hornets, and tomtits show such a great partiality for that few sound ones remain at gathering time. On an east wall they do not attract this notice from our winged enemies. Emile d'Heyst with us ranks next to Williams' for regular cropping, makes a good pyramid, and its quality is first-rate, and it seemed particularly so this year. It ripened early, however, and did not remain in use a long time, and the same may be said of Winter Nelis and Joséphine de Malines. Easter Beurré does ripen here, but some months before the festival from which it takes its name, and its quality is far below that of the two kinds previously mentioned. Nec plus Meuris and Marie Louise d'Uccle are others that always crop freely with us, and although both are useful, they are not particularly high in quality.

There are many October and November Pears, but few reliable ones of good quality for December and onwards. A short list of sorts that could be depended on for that part of the winter season would form a useful and valued contribution from any grower. In this case, presumably, the co-operation of southern and northern growers would be desirable, for sorts that might prove useful in December in the latter case would be in conflict with other November Pears in the milder counties. At the present time I have a few Beurré d'Aremberg, which are small, and of no particular quality ; Easter Beurré, most of them ripe ; Nec plus Meuris, a few have ripened, but the bulk will last for some time. This is not of very high quality, but is nevertheless useful on account of its lateness and regular bearing. In each case they are borne by old trees, which to some extent account for their being unsatisfactory in size and richness. Glou Morçeau is, according to my judgment, an over-rated Pear ; its appearance bespeaks better quality than it actually possesses. No doubt the fruit room has a lot of influence for good or otherwise, but of this most gardeners are without any choice. I have never seen a thatched building in a private garden, such as may be seen in Messrs. Bunyard's nursery at Maidstone, and which is said to be so eminently suited to the purpose in question.

Pear and all other trees at the present time are full of promise for another year, and it only requires a freedom from frosts and insect interference to make the coming season a contrast to the one just complete. It is to be hoped, at any rate, that our anticipations may be realised, and that if we do not get a heavy, we may be favoured with a more uniform, crop than in 1897.—W. S., *Wilts.*

[Mr. J. Lyne, the well-known gardener at Foxbury, Chislehurst, has a thatched fruit room in which Pears and Apples keep splendidly.]

VEGETABLES FOR HOME AND EXHIBITION.

(*Continued from page* 521.)

French Beans.

This is one of the vegetables that occupy the attention of gardeners over a long period—first, in a forced state; and secondly, in its natural season outdoors; therefore, let us commence by dealing briefly with the former phase of culture. The forcing of this vegetable is not a difficult matter with the aid of one or more low span-roofed houses with good heating arrangements. Sowing may be commenced in November or December, and the plants grown in beds, provided these are close to the glass. A pit, in which bottom heat is provided by one or two rows of pipes underneath the bed, is the best, and over these should be placed a layer of leaves or other loose material. The bed need not be more than a foot or 18 inches deep, and may be composed of soil previously used for Cucumber or Melon. Stout, strong growth is conducive to good cropping, and though this is somewhat difficult to obtain when the weather is severe, and strong fire heat is necessary, every care should be taken to admit air on favourable occasions, and to allow the plants ample room.

An average heat of from 55° to 60°, increasing with the growth of the plants to 75° and 80°, will generally be found suitable. Watering is another important matter, and forced Beans should never be allowed to suffer by the want of it. Walls, floor, and surroundings must be regularly damped with the syringe to keep red spider in check, as this pest frequently plays havoc with forced Beans. Care, however, should be taken not to wet the plants when in flower during the dullest part of the winter, and at this period the supply should be lessened. When the pods are swelling, an occasional watering with weak liquid manure will assist the plants, and the beans should be gathered directly they are large enough.

Where the facilities for forcing Dwarf Beans are only such as are provided by vineries and warm plant houses, late in December or early in the new year is soon enough to begin. Pots or propagating boxes are used as is most convenient. If the former are employed three or four plants in an 8-inch pot will be ample, and if the latter a double row may be grown. The boxes can be placed on the water pipes to afford bottom heat till the plants appear. They should then be supported by short Birch twigs, and moved close to the light, or the growth will be weak, and what flowers appear will fail to set. A second sowing should be made when the plants from the first are removed from the pipes.

One of the greatest drawbacks to forcing French Beans in a vinery is the susceptibility of the plants to attacks of red spider, and unless close attention is paid the pest will soon spread to the Vines. Beans in pots may be forced by the same rules in Cucumber and Melon pits. Among the varieties most suitable for this phase of culture are Earliest of All, Osborn's Forcing, and Ne Plus Ultra.

Turning our attention now to outdoor culture, the aim of most growers is to obtain a dish as early as possible, and in attempting to do this a very important point is frequently lost sight of—namely, succession. While raising no argument against the orthodox rules of sowing and gathering as early as possible, one is surprised that more attention is not paid to late cropping. By making a sowing of a good early variety in July, a late crop of excellent Beans can frequently be obtained which proves very acceptable in the kitchen. It is necessary to bear in mind two points in order to be successful with French Beans—the first, deep cultivation: the second, growing thinly to fully allow for branching. The former may be obtained by deeply digging the soil and working in the bottom of the trench some good farmyard manure, and the latter by bearing in mind what the plant will be like when fully developed and dispersing the seeds accordingly.

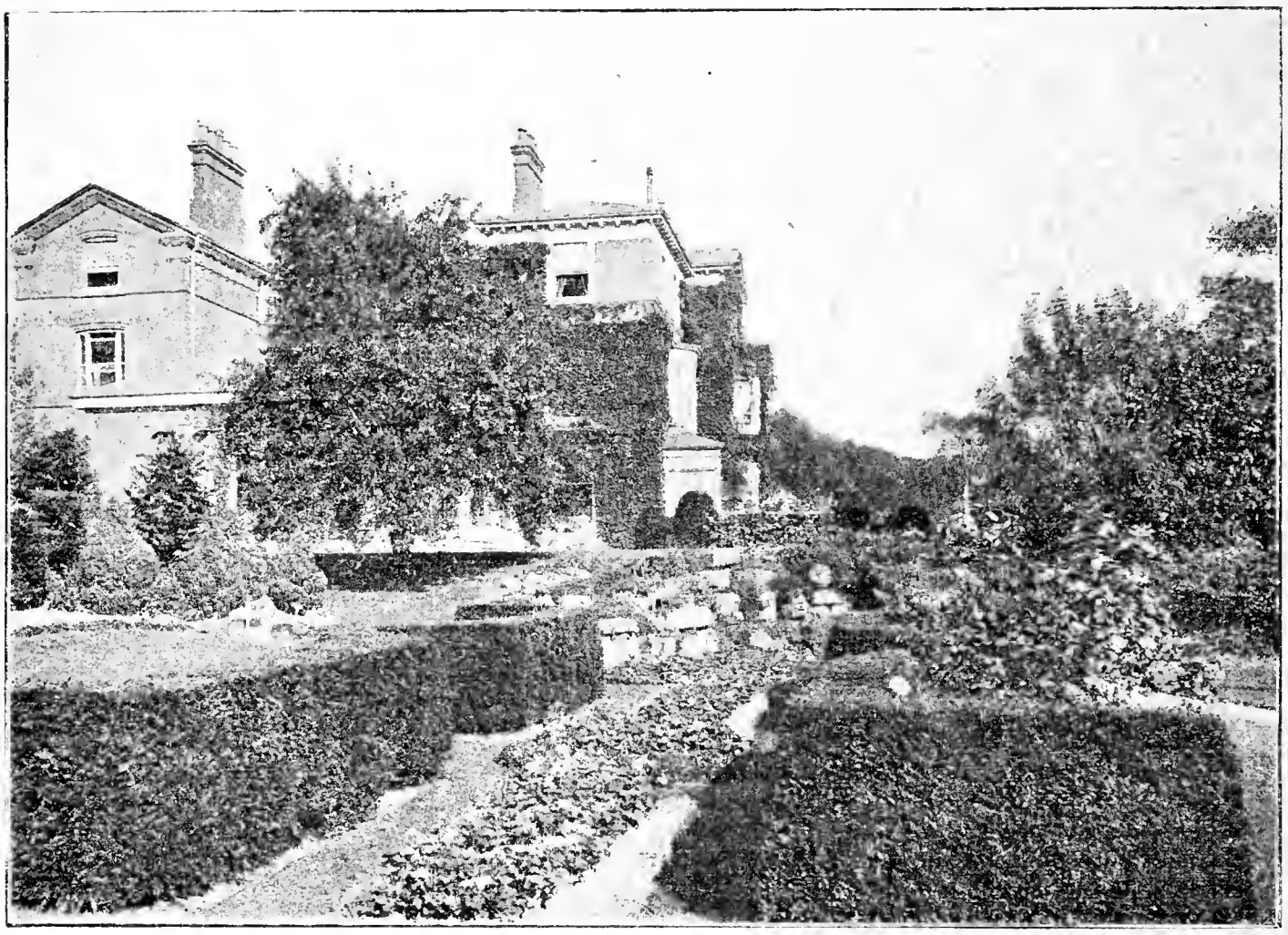

Photo by H Stokes, Birmingham.

Fig. 92.—Dutch Garden, Baskerville House.

It is good practice to make a sowing in April where the young plants can be protected, and transfer them to the permanent rows during showery weather in May. Under this treatment, however, a little leaf mould should be mixed with the soil, so that the plants can be lifted with balls of earth adhering to them. Main crops should be sown in succession from the end of April to June, and a late sowing of an early variety be made as suggested in July. Gathering is best done by rule, and all pods removed as they mature, whether wanted for immediate use or not, as by leaving them on a check is caused to the continual bearing that is desirable. High standard varieties like those previously mentioned will meet the requirements of growers either for home or exhibition.

Just a word respecting the latest addition to the family—the Climbing French Bean. Doubtless it is an acquisition, and is now so well known that little comment is necessary. Here we have a combination of the climbing habit of the Runner and the refined tender pod of the Dwarf Bean. Two varieties are recognised—viz., Sutton's Tender and True and Veitch's Climbing French Bean. Both are robust in habit and constitution, producing heavy crops over a long period. Many growers of Climbing French Beans were disappointed at the outset, owing to the fact that they sowed and grew the plants too thickly. Being robust in habit, if this mistake is made a thicket of growth is the result, which prohibits the admission of sunlight in order to set the blossoms. Given a fairly deep fertile soil and the plants thinly disposed, the culture of Climbing French Beans is otherwise simple, and the results generally satisfactory.

There is little that is really new to tell in dealing with a subject like this; it is the old and useful story—close attention to apparently small matters of detail, coupled with a careful selection of the best varieties, and with conditions of soil and season favourable, success will invariably follow.—Grower and Judge.

THE ART OF TABLE DECORATION.

The importance of table decoration at the present time cannot be over-estimated, and gardeners who are unable to make effective combinations either in fruit, flowers, or foliage, or all combined, are not able to obtain first-class appointments, however skilful they may be in other branches of their profession; while men who are only of average abilities as gardeners, but accomplished in the art of table decoration, command

first-class appointments. After the coloured silk style, which was in vogue some time back, came the light, elegant, and really artistic style practised at the present time, and the style lends itself to such variety of changes, and gives such scope to anyone possessed of artistic abilities, that it is not likely to be superseded by any other for a long time to come. The variety in flowers and foliage that can be used with excellent effect is almost endless.

In dealing with practical table decoration it was assumed a table was being decorated for twenty diners, which would be about 25 feet in length. He would suppose that there was a massive centrepiece of silver, with provision for arranging flowers in the top or centre of it. We arranged in this as lightly as possible a number of spikes of Calanthe Veitchi, intermixed with Fern or Asparagus, and on the cloth, say, ten or twelve plants in 3-inch pots of Begonia Gloire de Lorraine. The pots were concealed with Selaginella, the flowers of the Begonia drooping over the moss. Between the centrepiece and the ends of the table were two ice pails or wine coolers of silver, containing two plants of Croton Warreni. Disposed about the white cloth were a number of long trailing growths of Smilax, and placed on the top of the Smilax thinly single flowers of Calanthe Veitchi, the centrepiece having long streamers of Smilax depending to the cloth, the table being lighted by massive candelabra down the centre and by single candles at the ends or corners and perhaps at the sides; ten or twelve dishes of dessert, either on stands or in dishes without stands, being arranged among or intermediate with Begonias.

On a succeeding night it is necessary to give change and variety, and we used two, four, or six Chards' arcadian arches, made of galvanised wire, each of the larger arches being about 2 feet across the arch and 15 to 18 inches to the rise of the arch, and holding twelve trumpet-shaped glasses in which to place the flowers. These might consist of Begonia Madame Sharratt, a bright coral red, of graceful drooping habit, with Fern or Asparagus for greenery. These arches, when lightly dressed, give quite a charming effect, especially when arranged with such light and graceful flowers as Sweet Peas, Calanthes, Lily of the Valley, and Dielytra spectabilis intermixed. Tea Roses, in their many charming shades of colour, are also very beautiful for this purpose, as also are Carnations, arranged either along with their own grass or with Fern or Asparagus. Then again, a very charming effect can be had by festooning the table from candelabra to candelabra or candlesticks with such flowers as Rhodochiton volubile, pieces of the same being laid on the white cloth, intermixed or dotted about being a few deep yellow Chrysanthemums, which contrast very beautifully with the deep purple Rhodochiton and made a striking effect. Another grand plant for festooning purposes is Asparagus deflexus, and hanging lightly amongst single flowers of Calanthes or Oncidiums, the latter giving the effect of butterflies settling on the streamers. Yet another festooning plant is Lygodium scandens, or another, Russellia juncea.

A third change could be made by making up six, eight, ten or a dozen balls of soft clay, about the size of a cricket ball, covering these with Selaginella and pricking them full of any kind of flowers that are of the desired shade of colour, the stems, of course, to be of varying length, so that when made up there is nothing stiff or formal about the arrangement. When made up they may be disposed about the table in the most desirable positions for effect, taking care to place under each ball of clay several thicknesses of paper to prevent the cloth being marked. If these are arranged in an artistic manner, one or two plants being used in vases down the centre according to the size of the table, the effect is very beautiful. The arrangement on the cloth could be made to suit the taste of the decorator, whose object at all times should be either a harmonious blending of colours or a distinct and telling contrast.

A novelty in table decoration, which he once used, was much commended. Going through the woods he one day spied a brilliant patch of colour, which turned out to be a fungus. The upper surface of the fungus was a brilliant scarlet, and the under surface of a rich golden yellow. It was growing on rather long dead branches of Beech. He gathered a goodly number of branches with the fungus growing upon them, and arranged them on the dinner table at night among a bed of green moss, and the effect was most striking. His employer was entertaining a number of distinguished members of the British Archæological Association, and several of these gentlemen said they had never before seen such a beautiful table.—[*Abridged from a paper read by* MR. B. ASHTON, *The Gardens, Latham House, at a meeting of the Preston and Fulwood Horticultural Society.*]

NOTES ON APPLES.

I AM charmed with the very effectual methods of the writer of the article on "Fruit Notes" on page 567 of the Journal, and nothing would produce a more beneficial effect on British fruit growing than to have similar reports from other counties favoured for the production of Apples, for where these will grow well, other fruits cannot fail by intelligent treatment. Readers cannot do better than act on the advice given on the page cited. It would be useful to know the best varieties as most generally so acknowledged, and such as are favoured by special localities, which might with advantage be indicated.

The double-close planting is excellent advice from more points of view than one. Transplanting a young tree is the most effective root-pruning when properly done, and often the real making of the tree, especially if allowed to grow two or three years in its first quarters. It is only in these circumstances trees lifted at home that the full advantage of the system is obtainable, and it is grievous to see dried out roots on unpacking nurserymen's parcels, the result of trees being left exposed to drying winds while other batches are being lifted.

Unless the natural soil be very light indeed, I have much faith in planting each tree, if not on the level, yet so little below it that when the roots are covered a slight mound is formed, the slope corresponding with the natural slope of the roots of the tree. A gentle hill and dale formation is the result, which is beneficial for natural drainage as well as for the action of the sun's rays; these, being more nearly at right angles on the slope, favour the conditions of maturity and the saccharine of crops. Timely mulching in dry weather with stable manure, especially if the trees are well cropped, would be more essential than regular manuring. Trees thus raised above any unfavourable subsoil would relieve partly from the necessity of deeply interfering with it, meaning considerably diminished labour, an important item for market growing. Certainly on clay soil trees should be planted on the level absolutely in a moderate layer of lighter soil. I should certainly also prefer the bush form of training, the better fruit being produced from that style, not to speak of diminished risk from high winds.

The varieties of early dessert Apples referred to in the article in question can hardly be improved upon, and I was pleased to see such

Photo by H. Stokes, Birmingham

FIG. 93.—BOG GARDEN, BASKERVILLE PLEASURE GARDENS.

modern favourites of mine come to the front, including even September Beauty, rarely seen, and which keeps very well. Of course, the list might be extended with quite equal merit if Transparent (or Grand Sultan), the earliest of all, be included, which I have known for the last fifteen years through Sawbridgeworth, together with Benoni, a beautiful and tasty little American Apple, also early. Gravenstein is a variety deserving extreme praise. It is ready to eat from the tree in September, of large size for a dessert variety, and keeps better as to flavour than does Cox's Orange Pippin, nor does it lose its high aroma. I tasted it from several sources last week, and found the slightly acid ingredient in the early stages turned into a very pleasant mellow flavour. Thousands of barrels of its beautiful fruit arrive in England from America in October, but without the rich aroma and flavour in fruit which are grown here and in Germany; indeed, I think the American sun is too much for it, as its colour becomes deep cherry red instead of clear yellow with lovely stripes, as here produced. It ought to be grown by acres, as it is also an excellent cooking Apple. Of course, we must not omit our well-known old first-rate favourites, Quarrenden and Kerry Pippin, without which the list would have serious gaps. Not to be out of Apples of our own, and better than Australian when the latter arrive, from April we ought to plant D'Arcy Spice, also known as Baddow Pippin, although its development is slow. It is perhaps more of a garden Apple for affording a private supply of fruit than a market variety for field planting; its quality is, all the same, excellent.—H. H. R., *Forest Hill.*

SELECT NEW CHRYSANTHEMUMS.—Incurved Varieties.

These do not number more than seven that deserve a prominent place in the present list. Unfortunately there is a tendency nowadays to disseminate all that approach the typical form desirable. Especially is this the case now that incurved varieties are almost as easily obtained from seed as other sections. As experience is gained in intercrossing varieties for a definite purpose, no doubt raisers will be able to control somewhat the progeny. At present it is simply a question of chance in the raising of seedlings as it always has been in regard to sports. It is the addition of varieties with brighter and more decided colours that are required, such, for instance, as Refulgence. If incurved Chrysanthemums are to maintain their popularity, it can only be by the addition of new and improved varieties in colour and form. The latter requires careful attention, there being at the present time far too much favour shown to varieties possessing coarseness and irregularity of petal. The future welfare of this section, too, might be much improved if the granting of certificates were a little less free than at present. Really deserving varieties, of course, demand due recognition; but where some exist that are neither incurved nor Japanese, it would be in the interest of the incurved section that much stringency should be observed.

Another point needs emphasising, I mean that of sending varieties out before they have been properly tested as to which section they really belong. Sometimes a variety is sent out and described as a Japanese incurved, whereas the second year's test proves it to be distinctly belonging to the incurved race. Take, for instance, Mdlle. Lucie Faure, sent out in the past spring as an incurving Japanese. As exhibited by Mr. Godfrey at one of the floral meetings of the N.C.S. it is undoubtedly the best of the present year's introductions. The following are the best that I have grown or seen staged during the current year.

Mdlle. Lucie Faure.—As previously noted, this demands a prominent place. Properly developed blooms measure fully 5 inches in diameter and as many deep. The florets are pointed, incurve regularly, and are pure white. It is undoubtedly one of the finest novelties seen for some time.

Madame Ferlat.—This is a true Chinese incurved. The florets are narrow, pointed, and faintly tipped with yellow as the flower unfolds. This colour, however, passes away, and sometimes is replaced with a faint pink flush. As in all other varieties in this section the date of bud formation controls the colour to a certain extent.

Mrs. N. Molyneux.—Obtained by Mr. N. Molyneux by crossing James Agate with C. B. Whitnall. This variety differs from others in producing its best blooms from fairly early crown buds. Full sized blooms are 6 inches wide, an inch less in depth, of globular form, and ivory white in colour. The habit of growth is most desirable—4 feet to 5 feet high.

Mrs. W. C. Egan.—This reminds one strongly of R. Petfield, except in colour, which is much lighter.

Lady Isobel.—Mr. Silsbury raised this variety, and it may be described as the most massive in the incurved section. The florets are extra broad and "fleshy," giving a huge appearance to the flower. The colour is pleasing—a silvery pink, deepening in later blooms. In general form and compactness this variety possesses all the attributes of a good bloom.

Austin Cannell.—An excellent incurved, the blooms being full and thoroughly well "built." In colour it reminds us of Lord Derby—a rich purple—except that the new variety has silver lines running through the reverse of the petals.

Ernest Cannell.—A distinct and pleasing variety, of which the colour is somewhat difficult to describe. Some catalogues give it as "a pretty shade of deep fawn, margined soft red, reverse of petals creamy fawn, tinted deeper." I, however, prefer to call it blush-pink at the base, with a yellow suffusion.

Madame Edmond Roger.—Those who care for novelties in Chrysanthemums should cultivate this variety, which may be briefly described as a pale green Princess of Wales on a trifle larger scale. No doubt it will become a favourite with some.

Miss Phyllis Fowler.—This is a really good late-flowering variety. The lower petals are a little loose, but the remainder incurve regularly. The colour, canary yellow, is pleasing.

In other sections there is little to quote of what is new or an improvement upon existing kinds. Single flowered varieties have received a few additions of merit. Framfield Beauty, with exceptionally bright red florets, which droop a trifle at the point, is worth noting, as are Evan Cameron, white flushed pink; Miss May Braithwaite, an exceptionally high coloured and shapely variety; Mrs. F. P. Trevors, not large, but the circular formed flowers are bright red in colour; Lady Dunn, cream yellow flushed pink; Earlswood Beauty, creamy white, with the points of the florets slightly twisted; Duchess Elizabeth, with broad stiff florets, buff suffused with bronze and red; Alice Felgate, white flushed pink; Captain Felgate, rose pink; and Mr. F. W. Travers, dark red.—Edwin Molyneux.

Sixty Japanese Chrysanthemums.

On page 582 "W. Bowman" asks for the best sixty Japanese for exhibition. I send you my special list and hope it may prove of assistance. But I would like Mr. E. Molyneux to send one as well, then we could see how they tally together. Mine does not include this season's English novelties. No doubt Mr. Molyneux sees a few varieties in better condition in the North than I have seen, so that his list will be more practical for a wider range. I have made the dates for stopping so as to be about right for the shows in the South of England, but these would also be right for the northern shows as they are a week or fortnight later. In my list I have not included Stanstead White, but when I was in Scotland three years ago it was one of their best varieties, but in England it is not seen good except in wet seasons.

Madame Carnot, root in January, stop middle of April, second crown.
G. J. Warren, ditto.
Mrs. J. Lewis, natural growth, second crown.
Georgina Pitcher, stop first week in May, first crown.
Julia Scaramanga, ditto.
Mons. Chenon de Leché, natural, second crown.
Phœbus, for early flowers secure first crowns, but for November shows run one shoot to second break, and secure second crowns.
Simplicity, stop end of April, second crown.
Edwin Molyneux, run one shoot to second break, and secure second crowns.
Viviand Morel, second or third crown, do not retain bud until last week in August.
Charles Davis, ditto.
Lady Hanham, ditto.
Australian Gold, root in January, natural growth, second crown.
Edith Tabor, root in January for first crown, or stop first week in March, run one shoot to next break, and secure second crown.
Mutual Friend, stop first of March, second crown.
Pride of Madford, root in January, first crown.
Mons. Panckoucke (adopt the advice given for Edith Tabor).
Mrs. H. Weeks, root end of February, grow in 7-inch pots, and secure the first bud which shows.
Australie (adopt the advice given for Edith Tabor).
Thomas Wilkins, natural, second crowns.
Mons. Hoste, ditto.
Mdlle. Laurence Zede, first crown for early flowers, or stop early April for second crowns.
Madame G. Bruant, run one shoot only to second break, then secure second crown, natural growth.
Madame Louis Remy, second or third crown, secure bud last week in August.
Mrs. G. W. Palmer, (adopt the advice given for Madame Louis Remy).
Surpasse Amiral, second crown, natural growth.
Lady Ridgway, good on first crown, but for November stop in March and secure second crown.
Modesto, second crown, natural.
Oceana (adopt the advice given for Edith Tabor).
Eva Knowles (adopt the advice given for Edith Tabor).
Mdlle. Therese Rey, ditto.
Mons. Chs. Molin (adopt the advice given for Mdlle. Thérèse Rey).
Pride of Exmouth (adopt the advice given for Edith Tabor).
Madame Gustave Henry, natural growth, second crown.
N.C.S. Jubilee, stop first of April, second crown.
Lady Byron, run one shoot to second break, and secure second crown, natural.
Emily Silsbury, natural growth, second crown.
George Seward, stop end of March, second crown.
Graphic, ditto.
Louise, ditto.
Madame Ad. Chatin, ditto, or root in January for first crown.
Col. W. B. Smith, stop first of March, second crown.
Madame Laillant, stop end of March, second crown.
Madame Phillip Rivoire, stop early in March, second crown.
Mrs. F. A. Bevan, run one shoot to second break, and secure second crown.
Royal Standard (adopt the advice given for Edith Tabor).
President Nonin, natural growth, second crown.
Swanley Giant, natural growth, second crown.
Western King (adopt the advice given for Edith Tabor).
Ella Curtis, ditto.
Madame M. Ricoud, stop early in April, secure second crown.
C. A. Owen, stop first of May, first crown.
Mrs. C. H. Payne (adopt the advice given for Madame Louis Remy).
C. W. Richardson, stop end of March, second crown.
International (adopt the advice given for Edith Tabor).
Rose Wynne, ditto.
Amiral Avellan, natural growth, second crown.
Mrs. H. Kloss, stop first of May and secure first crown.
Mrs. Chas. Blick, stop early in March, second crown.
Miss Elsie Tiechmann, stop early in March, second crown.

Supposing an amateur wishes to make a selection he should take the first dozen, and so on.

Papa Viellard, which "A. D." recommends, is a lovely colour, and I have no doubt he must have taken a fancy to it while at Earlswood, but I only had one plant, and that had but two blooms, so that I should not recommend it on that test. It is of Viviand Morel shape, and must come to the front.—W. WELLS.

THE N.C.S.—WHY NOT THE AGRICULTURAL HALL OR EARL'S COURT?

FROM the controversy that has been and is being carried on in the columns of the *Journal of Horticulture* respecting the present home of the National Chrysanthemum Society, it is apparent that a change is desired. To know that our strongest floricultural society is without a suitable place in which to hold its shows is by no means creditable to the country, which is as much a nation of gardeners as it is a nation of shopkeepers, as our French neighbours dub us. By no stretch of imagination can the Royal Aquarium be considered a really suitable place for an exhibition of flowers. It is better than no place at all, and that is as much as one can say. No one could find a worse, and equally, no one as yet has come forward to sing the praises of a better.

Our kith and kin "down under," and friends on the Continent, as well as those in America, with their advantages of horticultural halls and similar institutions, must look down on poor England, which has nothing of the same kind. Foreign and colonial visitors who come to London in the Chrysanthemum season go away convinced that though we can grow magnificent flowers we have no place in our vast metropolis where we can show them. What do they think of the Royal Aquarium for a flower show? Personally, I should be sorry to ask them, for I know the answer would be strongly condemnatory. At the conclusion of the big November show I asked an opinion of it and its surroundings of one of the truest flower lovers in the country. His reply was to the effect that no doubt it was a magnificent show if it could be seen, but that it was sacrilege to take a flower within the doors of the Royal Aquarium. Emphatic, is it not? and some will say, "perfectly true."

However, one and all must recognise the necessity of utilising the Royal Aquarium for the time being—until, in fact, a change can be made. There can be no doubt that some of the officials of the N.C.S. are decidedly averse to a move in any direction, and it is impossible to see why this is so. Figures, it is true, have been given as to the cost to the Aquarium Company of the shows by the Secretary of the N.C.S., but it was observed that these were merely estimates based on supposition, and therefore valueless. Possibly the items are too insignificant to appear in detail in the financial statement of the Aquarium Company. If they are stated, then Mr. Dean as the Company's one and only champion should give them, if only to annihilate Mr. Moorman, who has, by keeping to authorised figures, certainly got the whip-hand of the Secretary, who was first adroitly "drawn" and then so effectively used as evidence against his own claim for the "independence" of the N.C.S.

But let us leave the controversial aspect of the question for a moment, and see if another place can be found for the show season. So far it can be said we have had two suggestions. The first emanated from Mr. Alex. Dean, who names the Agricultural Hall, and the second from Messrs. H. Cannell and "H. H. R., *Forest Hill*," each of whom advocates "A Home or Hall of Horticulture." For the latter it seems almost futile to hope. Some few years ago the energy of Baron Schröder placed us within measurable distance of this consummation, but now we seem a very long way from it. The scheme is feasible if worked by business men, but the longer the question is shelved the more difficult of solution becomes the problem.

With regard to the first proposal—that of adjourning to the Agricultural Hall—I am of the opinion that many practical men will support it. The building is admirably adapted to such an exhibition as that of the N.C.S. But is it sufficiently accessible? Though there is no railway station near the Hall, I think there are five main line stations from which the cab fare to it is only a shilling. Can more be said for the Aquarium? For visitors little objection can be found, as the tram and omnibus services to the Hall are excellent. As showing the accessibility of the great building, I see it recorded that 68,000 persons passed the turnstiles on Bank Holiday this week. Did anything like half so many visitors find their way to the Aquarium? or did the Aquarium numbers equal the attendance at the Crystal Palace, 26,217?

Looking over the existing buildings in the metropolis two others appear suitable, and these are Earl's Court and Olympia. Of these the former seems to be preferable. It is spacious, easily accessible, and no possible objection can be taken to it. As has been repeatedly proved in bygone days, excellent shows can be got there simply because the railway accommodation is excellent. There are three stations practically in contact with the building, these being Earl's Court, West Brompton, and West Kensington, and to the former one can readily get from all of the great termini. In this respect it is preferable to the Royal Aquarium, to which the nearest station is St. James', which is not so well served as Earl's Court. It may be said that many who go to the Aquarium would not go to Earl's Court, and this may be true. On the other hand hundreds, possibly thousands, who would not endure the crush, smoke, and noise of the Aquarium, would go with pleasure to Earl's Court.

The building contains ample space for the effective arrangement of a show of the National Chrysanthemum Society, and for convenient inspection by far more persons than jostle against each other at the Aquarium on a November show day. I should be glad to see the opinions of others on the suggestions made, and if favourably received, no doubt the N.C.S. Committee will consider the whole matter on its merits.

Photo by H. Stokes, Birmingham.

FIG. 94.—THE LAKE, BASKERVILLE PLEASURE GARDENS.

If I remember rightly Mr. R. Dean has been the manager of large shows at Earl's Court; but whether that is so or not, after what he has said he would not be likely to sever himself from the Aquarium Company if it should establish shows in opposition to the N.C.S. at Earl's Court or elsewhere. On that point it need only be said that if the prosperity of any society is dependant on any one man, however able, it cannot possess permanent strength.

I could understand Mr. Dean's reluctance to leave the Aquarium if, as he seems to feel, he would be responsible for a share of any possible loss that might by chance be incurred through a change. He has an undoubted right to protect himself from any such contingency. But would he incur any risk whatever? I have been told that members of committees are alone responsible in that direction, and that secretaries who are, and very properly, paid for their services, are quite free from financial liability. Will someone who knows kindly say if this is so?—AN EXHIBITOR.

THE N.C.S. AND ITS DUNGEON.

SEEING the pointed manner in which that class of visitors is referred to in the recent correspondence, as conspicuous by their absence from

the Aquarium shows, I must emphasise my opinion that this absent class is pre-eminently possessed of the true love of flowers without incumbrances such as render the home (?) of the N.C.S. shows utterly unsuitable for a horticultural display. That place of amusement is not an abode for the beauties of plant life to be seen to advantage, but rather its dungeon.

On the Tuesday of the N.C.S. show I visited the Drill Hall to see the usual fortnightly, and, on that particular day, very moderate display, without bands and gymnastics, but in peaceful repose and ethical fitness, and was told the diminutive character of the display was owing to the claims that day of the Aquarium show. I left the former pleased with the good things, though few, and passed the very doors of the Aquarium without a thought other than of pity that the show should be held there. I did not feel in the least attracted to enter. I am the truest lover of plant life in all its manifold forms, and should find a pleasure in proceeding to a poor man's little garden on the mere chance of finding some original conception in horticulture. I trust members of the Committee of the N.C.S. will pause before giving themselves away by following their leader who dares to be bold in the knowledge of the bondage of the rest.

The way out of the deadlock for this Society may be a fresh election of the Committee, when doubtless in its composition the voice of true horticulture will make itself heard, and that body strive in good earnest for the realisation of a central hall of horticulture, where all the existing forces would act in unison. I can only recommend the Secretary of the N.C.S. to join frankly in the movement with head, heart, and hand, so that "splendid isolation' should not be regretted when too late.—H. H. R., *Forest Hill.*

YOUNG GARDENERS' DOMAIN.

Stoking.

Now that winter has at last arrived more care and attention will be required of young gardeners to wage war with frost and cold winds, and to keep houses at the requisite temperature. It is a "thorn in the side" of many of us probationers, especially where there is a large amount of glass, but with care and intelligence the work may be made easier, and a pleasure to perform. Several kinds of fuel are used—coal and coke chiefly—but whatever it is the stoker should first study the heating properties of the kind he has to use, and also the boiler, so that he can guard against overheating or the reverse. It is an anxious time for all concerned, and often irretrievable damage is done through too high temperatures.

A tidy stokehole, free from ashes and clinkers, and clean flues round the boiler, should be the first consideration. When extra heat is required begin with a small fire clear of ashes and clinkers, and rake it into the middle of the bars. This should be fed by a few shovelfuls as often as it burns through—on no account piling on a lot of fuel at once, as this prevents the heat having proper play on the boiler—until the requisite degree is obtained. A little slack or damp ashes may then be put on, at the same time reducing the draught. The weather should always be observed, and sun heat taken advantage of in place of fire heat. The pipes must never be overheated on sunny days, or weak growth will be the result. If it gives promise of a sunny day, so that enough can be husbanded to keep the temperatures at the proper height, the fire should be damped down as advised above, and started again as the sun loses power. The fire ought always to be well under the boiler, heat at the dead plate being almost useless, but some stokers place fuel on it to become charred and pushed into the fire at the next stoking.

When banking-in for the night, the fire should be raked about to free it from ashes, and all clinkers taken out, then pushed well back and enough fuel put on to insure a regular temperature during the night. In the case of saddle boilers a space must be left between the top of the fuel and boiler, and a few shovelfuls of ashes or coal slack well damped placed over the front part of the fuel and made firm with the back of the shovel. In attending the fire the next morning, if it be a moderate one, rake it to the front and clear it of ashes and clinkers, then push back to the middle of the bars, place on a little fuel as previously advised, and give all the draught possible for a time. If it should be low, rake it up together, put on a little good fuel, and let it burn through; it can then be cleaned. If this were attempted at first it would probably be put out altogether.

It is a credit to every young gardener to be a good stoker as well as a good fruit and plant grower, for do not the majority depend on proper temperatures to bring them to perfection? When a man can stoke to the satisfaction of his chief, and can be relied on in this respect, he saves him much anxiety caused by his work being badly performed, either through want of thought or knowledge. The subject of these few notes deserves more attention from those who have it to do than it often gets, and although unpleasant to some it can be made both interesting and instructive.—Nil Desperandum.

—— Gardening Scholarship.—We learn that Lord Amherst of Hackney has expressed his intention of giving, through the Gardeners' Company, a scholarship of the value of £25 in the years 1899 and 1900. This scholarship is, as in the case of the Burrows and Sherwood scholarships for 1897–98 and 1898–99, to be awarded by examination held by the Royal Horticultural Society. The Master, Mr. N. N. Sherwood, has also promised a prize of 10 guineas annually, to be known as the Master of the Gardeners' prize.

HARDY FRUIT GARDEN.

Pruning Gooseberries.—*Bushes.*—Gooseberries in bush form are best when grown with a fair number of main branches disposed thinly and in a regular manner so far as is possible. From these, young shoots may be allowed to spring, but not so rankly as to crowd the trees with growths. The main object of winter pruning must be to thin out the crowded annual shoots, leaving the best placed and most promising at their full length as they produce the best fruit. The shoots which it is necessary to prune back so as to avoid crowding need not in all cases be cut out entirely, but to within an inch of the main branch to form spurs. Some treat all the annual shoots alike, spurring them back closely, but this is not desirable, a combination of both methods being better. Worn-out branches may be replaced, selecting suitable growths at the base of the bushes for extending. Shoots or branches that destroy the symmetry of the bushes or growing too near the soil remove entirely. Bushes are best on clear stems 6 or 9 inches above the soil, especially the drooping varieties.

Cordons.—When growing on walls or espalier fences the branches are treated as cordons, and trained upright about 9 inches apart. The winter pruning consists in shortening the side growths to within an inch of the base. During the time the branches are in course of formation 6 to 9 inches of the leading growth should be left to each branch annually. When they have reached their full extent shorten in closely. New cordon branches may be formed when necessary by originating a shoot at the base of the old branch which must be cut out.

Pruning Red and White Currants.—Bushes are formed with a definite number of main branches. The side and spur shoots developed during the summer duly prune back to within half an inch of their base. While the branches are in the course of formation shorten the weakest leaders to 6 and the strongest to 9 inches, eventually, when extension is not further required, pruning closely, the same as the side shoots. When desirable to replace a worn-out or exhausted branch select a suitable growth at the base. Whether grown as bushes in the open, or as cordons on walls and espalier fences, the same course of pruning is necessary.

Pruning Black Currants.—Black Currants are only profitably grown as bushes. They require to be annually regulated, selecting the best and stronger young growths for retaining, and cutting out entirely the weaker and older. Endeavour not to leave the bushes too crowded. Treat similarly to Gooseberries with the exception that no shoots are shortened back to form spurs, but cut out entirely when not required. All shoots retained leave at full length.

Protecting Buds from Birds.—Gooseberries and Currants are liable to loss of buds by the attacks of birds in winter. There are various remedies adopted to prevent these depredations. Stringing black cotton over the bushes is one effective method; tying the branches together in a mass for the winter is another. Dustings of soot or quicklime applied when the bushes are wet prevent attacks to some extent, but require renewal when washed off by rain. A mixture of quicklime, sulphur, and softsoap, with water to make it thin enough to pass through a syringe, will readily adhere and prove a good preventive.

Cleansing Fruit Trees.—This is the best season for attacking pests that infest fruit trees. Red spider, scale insects, and the eggs of numerous insects may be dislodged or destroyed by the application of effective insecticides.

Lichens and Moss.—The growth of these on fruit trees is always detrimental to their health, and a means of harbouring insects and fungi which do further harm. After pruning, thinning, and the cutting out of dead and diseased wood, the stems and branches infested with lichenous and mossy growths ought to be well scraped with hoop iron as a preliminary. Follow this by applying a dressing of freshly slacked lime. The better plan, perhaps, is to dust the smaller branches and twigs with the powdered lime, and to dress the thicker branches and stems with limewash by means of a brush. Sulphate of copper is also a good remedy, using 1 lb. to 25 gallons of water. This should be sprayed on the trees while dormant. It is also an excellent plan to apply the now well known American remedy recommended by Mr. L. Coates of California. This consists of making a strong caustic solution as follows:—Half a pound of caustic soda (Greenbank's 98 per cent.), half a pound of crude commercial potash, 5 gallons of water, applying hot at 130°, using a force pump with brass cylinder and spray nozzle attachment. For Peaches, Nectarines, and Apricots use double the quantity of water. This is a good general wash for any trees. It cleanses the bark, lichenous and mossy growths fall off, insects and their eggs are destroyed.

American Blight.—Washing infested trees with an insecticide is the best remedy for winter application. The most common solutions are softsoap, a quarter of a pound to one gallon of water, or Gishurst compound, half a pound to the same quantity of water. Dissolve thoroughly, and heat to a temperature of 90°. Apply to the infested parts of trees by brushing it well into all crevices and wounds; afterwards spray the trees with the potash and soda solution.

Winter Culture among Fruit Trees and Bushes.—After pruning and cleansing trees fork over soil so as to bury weeds and give a finished appearance. In doing this roots near the surface must not be injured. When the latter are very numerous in the surface soil it is best to dispense with the forking, but remove any large weeds, and apply a mulch of decayed manure or decomposed compost.

FRUIT FORCING.

Vines.—*Earliest Forced.*—The Vines started early in November will now have the root action excited by the development of the foliage, and great care is necessary to prevent a chill. The temperature about the pots of the earliest forced Vines should be kept steady at 70° to 75°, pressing down the fermenting materials, and adding fresh as required. Disbud and tie down before the shoots touch the glass, not being in too great a hurry in stopping. When two leaves are made beyond the bunch the laterals of Vines in pots should have their points pinched off when the leaf at the joint is the size of a halfpenny. Those planted in borders may be stopped three or four joints beyond the fruit, and then extend the growths so as to secure well-developed foliage all over the trellis. Remove superfluous bunches as soon as choice can be made of the best, under, rather than over, cropping the Vines. Maintain the night temperature at 60° to 65°, and 70° to 75° by day, with an advance to 80°, 85°, or 90° from sun heat. When the flowers open keep the heat regularly at 70° to 75°, and maintain a rather dry atmosphere; and when the fruit is well set return to the temperatures previously named. Artificial fertilisation should not be neglected, operating about midday. Afford liquid manure when the soil is moderately dry to Vines in pots, even when in flower, or always after they have developed the first leaves. Maintain a moist genial atmosphere by damping the paths two or three times a day, and occasionally with weak liquid manure. Houses having fermenting beds will not require any aërial ammonia.

Houses to Afford Ripe Grapes in June.—These are the first in a majority of establishments. Of black varieties Black Hamburgh, Mill Hill Hamburgh, Madresfield Court; and of white Buckland Sweetwater hold front rank; Foster's Seedling is also excellent, and keeps some time. The Frontignans have gone back in estimation from the smallness of berry, otherwise the value of White Frontignan for early forcing is unrivalled for cropping and quality. The Vines should be planted inside the house, and be confined to the inside border until this is occupied with roots, when they may be allowed to pass into the outside border. This must be covered with about 3 inches thickness of dry leaves, with a little long stable litter to prevent their blowing about, as under no circumstances should the soil be allowed to become frozen. If the roots are entirely in an outside border, it ought to have about 6 inches depth of leaves and enough stable litter to prevent their displacement by wind, and reduce this covering late in April or early in May to an ordinary mulch. Where fermenting materials are at command and the supply adequate they may be used in the proportion of two parts leaves to one part stable litter, turning and adding to as the heat declines. The house should be started at the new year, watering the inside border thoroughly with tepid water, or, better, liquid manure. Damp the house and Vines two or three times a day in bright weather, but when dull once, or at most twice, will be sufficient. Maintain a temperature of 50° to 55° at night and on dull days, advancing to 65° from sun heat and a free circulation of air, closing at this degree.

Early Houses of Muscats.—To have the Grapes ripe in June the Vines must be started without delay. Vines that have been forced before will respond at once, but those utilised for the first time will require starting a fortnight or three weeks earlier, or bringing forward by an increased temperature of at least 5°. There are not any equal to Muscat of Alexandria, and for early forcing the roots should be entirely in an inside border. The border will need to be made evenly moist, but not wet. Start with a minimum temperature of 55°, and 65° to 75° by day from sun heat.

Houses from which the Grapes have been Cut.—Prune the Vines, cutting to a round bud as near the main stem as possible; shorten or cut away elongated spurs where there are others nearer the stem to supply fruit, or train up young canes to displace any worn-out rods after these have produced fruit. Remove the loose bark carefully, and thoroughly cleanse the house, washing the Vines with some approved solution. Remove the loose surface soil, especially near the collar of the stems, and supply fresh loam with about one-third of earth-closet manure mixed with it, decayed stable, preferably farmyard, manure, or artificial manure. The house should be kept cool, but frost is best excluded. If used for plants the temperature ought not to exceed 40° to 45° by artificial means, and those plants only that require safety from frost should be placed in vineries when the Vines are at rest. If the house has a minimum temperature of 50° for any length of time the buds will be excited, and that prejudices the after growth.

Late Houses.—The tender-skinned Grapes, such as Muscat of Alexandria and Canon Hall Muscat, do not keep well on the Vines after this period owing to the fluctuation of temperature. If kept on the Vines they weigh heavier, hence some growers cover the roof-lights with straw or similar material, keeping the house freely ventilated in mild weather, close in cold, with little more heat than is necessary to exclude frost. For general purposes Grapes are best cut and kept in a cool dry room in an equable temperature after the new year. The more wood the Grapes are cut with the better. Use rain water in the bottles, and incline in such position that the Grapes hang clear. Any dry room is suitable for keeping bottled Grapes, provided the temperature is kept as near as may be at 40° to 45°. The Vines being cleared of the Grapes are set free for pruning and the house for cleansing. The most popular late Grape, Gros Colman, with Alicante and Lady Downe's, succeeds under the close-pruning system, spurring the laterals to one or two buds, as the bearing shoots are usually stout and short-jointed. Gros Guillaume does best on the long-pruning plan, the shoots being shortened to plump buds on well-ripened wood, as the basal buds are often too small for pushing reliable fruitful shoots. Mrs. Pince, with Muscat of Alexandria and Canon Hall, also succeed best on the semi-long rod system, but sturdy, short-jointed, well-ripened, and not overcropped shoots of these varieties generally show enough fruit when pruned to two buds. When these are small and the growth weak, it is wise to shorten the current year's wood to the first plump bud from its base, never relying on any but those on well-ripened wood. Keep the houses as cool as possible after pruning and cleaning, so as to give as complete rest as possible.

THE BEE-KEEPER.

Removing Stocks.

The shortest day is now past; the sun, too, is also at its lowest ebb. It is, therefore, worthy of consideration at this dull season whether advantage should not be taken under these favourable circumstances of removing any stocks of bees that may be improved thereby to a more favourable situation.

The majority of bee-keepers, I am glad to say, study their bees' requirements, and when this is the case their first consideration is to find a suitable position in which to place the hive. There are, however, many different ideas as to which is the most favoured spot. A south aspect is preferred by many bee-keepers, and if a sheltered position is chosen it would probably be difficult to make an improvement; but under those circumstances it will be necessary to pay close attention to shading and ventilation, otherwise the bees will incline more to swarming than to storing a surplus, and when bees are thus left to take their chance they invariably do quite as well in a less favoured spot.

Owing to a variety of causes many bee-keepers are unable to obtain as favourable a situation as they would wish, but if they will provide shelter and protection from the heavy rains, and the necessary attention when required, it is of little consequence whether the hives face north, east, west, or south.

As a proof of this statement, I may be allowed to state the fact that, out of upwards of forty hives in my apiary, only four of them have a south aspect. If the difference were so marked that the bees in the hives facing in one particular direction always did the best, I should have no hesitation in recommending that aspect in preference to all others. In theory this may be so, but in practice it is quite the opposite. Looking back over a series of years, I cannot call to mind two successive years in which the bees stored a larger surplus from one aspect than from another.

During the busy season, owing to stress of other work, a newly hived swarm may be placed for manipulating and other purposes in a very inconvenient spot. When it has remained there for twenty-four hours, it would be unwise to remove it any distance, as many bees would fly to the old spot and would die.

When to Remove Stocks.

When re-arranging the apiary, and the stocks have only to be removed a few yards, any time during the day is suitable for the operation; and if dull so much the better, as the hives should not be interfered with at this season, when the bees are on the wing.

If they are to be removed a mile or more, a day when a low temperature prevails should be chosen for the purpose. The entrance must be temporarily closed with perforated zinc, so that the bees cannot escape if they are disturbed. In removing stocks, more particularly at this season, it is highly necessary that they are not roughly handled, or much mischief may be done. If carefully done the bees will not be disturbed in the least. They should always be carried by hand; a handbarrow answers admirably for the purpose, or two stakes with a couple of cross-pieces to keep them the proper distance apart will make a good substitute.

If bees are to be removed several miles by road or rail, spring is preferred to midwinter, as at that season the bees are active and will soon get over the excitement of the jolting they will get on the way, whereas during the dark days of winter many bees may succumb from cold, as they may be shaken from the cluster, and, being in a state of stupor, be unable to return.

Bees in straw skeps may be removed with impunity at almost any season if cross-sticks are used, as the combs being fastened to the sides of skep will prevent any breakdown.

Beginners should always remember that it is unwise to remove stocks from their original position after the bees are flying freely in the spring, hence the necessity of making any alterations required at this season.

Dry Floor Boards.

Now that the weather has become somewhat settled after the heavy rain and thick fogs that have prevailed for several weeks past, advantage should be taken of the first fine day to examine the floor boards of all the hives.

It is in this simple operation that the great benefit is observed of using loose floor boards in preference to those that are fastened to the body of the hive. With the former all that is necessary is to have a few spare floor boards which are dry and ready for use, place one of these by the side of the hive, which may be lifted and at once placed on the dry board. The damp board is then removed and cleaned of any débris, and may be used again when dry. It does not take many minutes to treat several hives in this manner.

With the fixed floor board it is quite impossible to renew them without removing the bees into another hive, which would be very unwise at this season. All that can be done is to remove all spare frames from the ends and wipe the floor as dry as possible without disturbing the bees. But that is unsatisfactory when compared with the other method.—An English Bee-keeper.

TO CORRESPONDENTS

All correspondence relating to editorial matters should, until further notice, be directed to "The Editor," **8, Rose Hill Road, Wandsworth, London, S.W.**, and **NOT** to Fleet Street. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense, and departmental writers are not expected to answer any letters they may receive on Gardening and Bee subjects through the post. If information be desired on any particular subject from any particular authority who may be named, endeavour will be made to obtain it by the Editor.

Correspondents should not mix up on the same sheet questions relating to Gardening and those on Bee subjects, and should never send more than two or three questions at once. All articles intended for insertion should be written on one side of the paper only; and the name and address of each writer must be known by the Editor, though not necessarily for insertion. We cannot, as a rule, reply to questions through the post, and we do not undertake to return communications which, for any reason, cannot be inserted.

Labour Required for Garden (*Anxious*).—For keeping everything in thoroughly good order, the 2 acres of kitchen garden, 1 acre within the walls, will require two men; flower garden and pleasure grounds of 4 acres, two men; three vineries, one man; three Orchid houses, one man; stove, Cucumber and Rose house, one man; Peach houses and conservatory, one man; Melon pits, frames, Mushroom house, and Chrysanthemums, one man; with a couple of strong youths as general helpers. The whole must work together, not in sections as given above, as certain of them would have far too much to do at some times, and at other periods next to nothing. The head gardener would need to be a hand worker in any department; the foreman energetic and competent; the others brisk in their movements, and taking interest in their duties.

Wintering Coleuses (*Amateur*).—We do not think you will succeed in keeping Coleuses in your cold house. If you heated the house you might keep them by having a box made in which to place the plants, with a hand-light or a large square or two of glass over it. By some means you must give a rather dry temperature of from 45° to 50°. We think you may keep them in your living room more easily than in an orchard house. An amateur kept some last season according to our directions. The plants were small, struck in August, and potted in 3-inch pots; others were rooted about the end of September, four or five round the sides of a 4-inch pot, and were left in the cutting pots all the winter. He had for these and similar things two rough boxes, made 18 inches deep and 2 feet square, a bottom of zinc was placed 5 inches from the bottom of the box, the place beneath had putty placed all round the sides at the joints, and then the whole below the zinc was well tarred, and done in time to dry well before being used. A simple plug-hole was left at the top and bottom for pouring in hot water, and letting it off when cold. Little bits of wood for placing the pots on were set inside, and the top of the box was covered by two squares of glass laid on. In severe weather the glass could be covered. When more severe still a little hot water from a tea-kettle would heat the enclosed space through the zinc, and the bits of board free of the zinc prevented the pots being overheated. Something of the same contrivance would do in the cold house, but, of course, it would be more easily looked after in a dwelling house.

Senecio pulcher in Pots (*R. J. M.*).—Certainly this plant can be successfully grown in pots, and there ought to be no difficulty in getting good flowering plants in 5-inch or 6-inch pots. The compost should consist of good yellow loam, leaf soil, and well-decayed cow manure, with some wood ashes and sand, or in lieu of the ashes nodules of charcoal; the latter is of decided advantage in growing the plant. Perfect drainage is also essential, and an abundance of moisture during the growing season; and it would be advisable to plunge the pots in some material, such as spent hops or ashes, which would greatly assist to keep the roots cool and moist.

Culture of Oxalis (*Amateur*).—These plants are very easy to grow, and we see no reason why you should not succeed with them. Place them on shelves near the glass, potting when they are beginning to grow in a mixture of three parts light fibrous loam, one part leaf soil, and two parts sandy peat, with a part of silver sand, watering moderately until in free growth, increasing the supply with the growth, and after flowering, or the growth is complete, diminish the supply, ceasing watering when the leaves become yellow, and keeping dry until the plants again start into growth. They do well in a light airy position in a greenhouse. Their great bane is too much water and shade.

Forcing Lily of the Valley (*T. E. J.*).—You should pot and plunge them in a bottom heat of 75°, and not exceeding 90°, and cover with inverted flower pots, taking care that the soil does not become dry. Every crown will grow, and when the spikes are about 5 or 6 inches high then withdraw the pots from the hotbed and place them in a house with a temperature of 65° by day and 55° at night, in which they will expand the flowers and develop the foliage. In the new year they will succeed admirably in a vinery started at that time; but the plants must be brought on gradually with the Vines or they will remain dormant or go "blind," which is obviated by bottom heat or a rising temperature, commencing from a low one.

Winter Ericas (*S. R. M.*).—The plants of the varieties you name should, after they are past their best, be cut close back if they are intended to be utilised for the same purpose another autumn. If they have been in structures where heat has been maintained, they should not be placed direct into the cold greenhouse or they will be seriously checked. They should be gradually hardened to greenhouse treatment, so that they will start into growth slowly but naturally. Plants that have long been in rooms for decoration are useless for growing another year. All plants employed for such purposes are better conveyed to the rubbish heap as soon as they are removed, for they are not worth the trouble necessary to restore them to health. Young plants in small pots that are intended for flowering another year must be kept in a light position and as cool as possible, so that they will not be excited into growth. Any plants that did not show flowers and are dwarf and bushy should be subjected to the same treatment. These plants should be watered carefully, taking care never to allow them to suffer by an insufficient supply.

Names of Fruits.—*Notice.*—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruit, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. *In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing.* The names and addresses of senders of fruits or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. *They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state.* (*C. F. H.*).—Your specimens reached us in the form of a mass of pulp, in which condition it was obviously impossible for us to name them. (*D. E. A.*).—1, Court Pendû Plat; 2, Cox's Orange Pippin; 3, Dr. Harvey; 4, Blenheim Pippin. (*G. P. A.*).—1, New Hawthornden; 2, Alfriston; 3, closely resembles Golden Winter Pearmain; 4, Cellini; 5, Calville Rouge d'Hiver; 6, Scarlet Leadington. (*A. C. F.*).—Scarle. Pearmain. (*P. R. S.*).—1, Winter Nelis; 2, Easter Beurré; 3, unknown.

Names of Plants.—We only undertake to name *species* of plants, not varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in firm boxes. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool the worst. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*Fern Lover*).—1, Adiantum tenerum; 2, A. formosum; 3, Asplenium bulbiferum. (*S. R.*).—1, Curculigo recurvata; 2, Sparmannia africana; 3, Erica hyemalis; 4, Cuphea platycentra; 5, Streptosolon (Browallia) Jamesoni. (*H. Rose*).—1, Begonia manicata; 2, B. Gloire de Sceaux; 3, B. Ingrami; 4, Cyperus alternifolius. (*Youngster*).—1, Asparagus decumbens; 2, A. deflexus; 3, Daphne indica.

EDITORIAL NOTICE.—It is particularly desired that all communications, parcels, catalogues, and newspapers intended for the Editor, be sent direct to 8, Rose Hill Road, Wandsworth, S.W.

TRADE CATALOGUES RECEIVED.

J. Carter & Co., High Holborn.—*Seeds.*
Dobbie & Co., Rothesay.—*Catalogue and Competitors' Guide.*
Little & Ballantyne, Carlisle.—*Seeds.*
E. Webb & Sons, Wordsley.—*Seeds.*
W. Wells, Earlswood.—*Chrysanthemums.*

COVENT GARDEN MARKET.—Dec. 29th.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples, ½ sieve	1 6	to 4 0	Grapes, lb....	0 8	to 2 0
Cobs	22 6	24 0	Lemons, case	11 0	14 0
Filberts, 100 lbs.	0 0	0 0	St. Michael's Pines, each	2 6	5 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Asparagus, per 100	0 0	to 0 0	Mustard and Cress, punnet	0 2	to 0 4
Beans, ½ sieve	0 0	0 0	Onions, bushel	3 6	4 0
Beet, Red, doz.	1 0	0 0	Parsley, doz. bnchs.... ...	2 0	3 0
Carrots, bunch	0 3	0 4	Parsnips, doz.	1 0	0 0
Cauliflowers, doz.	2 0	3 0	Potatoes, cwt.	2 0	4 0
Celery, bundle	1 0	0 0	Salsafy, bundle...	1 0	0 0
Coleworts, doz. bnchs. ...	2 0	4 0	Seakale, basket	1 6	1 9
Cucumbers	0 4	0 8	Scorzonera, bundle	1 6	0 0
Endive, doz.	1 3	1 6	Shallots, lb.	0 3	0 4
Herbs, bunch	0 3	0 0	Spinach, pad	0 0	0 0
Leeks, bunch	0 2	0 0	Sprouts, ½ sieve...	1 6	1 9
Lettuce, doz.	1 3	0 0	Tomatoes, lb.	0 4	0 0
Mushrooms, lb.	0 6	0 8	Turnips, bunch	0 3	0 0

PLANTS IN POTS.

	s. d.	s. d.		s. d.	s. d.
Arbor Vitæ, var., doz. ...	6 0	to 36 0	Evergreeens, var., doz. ...	4 0	to 18 0
Aspidistra, doz.	18 0	36 0	Ferns, var., doz.	4 0	18 0
Aspidistra, specimen ...	5 0	10 6	Ferns, small, 100	4 0	8 0
Azalea, per doz.	30 0	42 0	Ficus elastica, each... ...	1 0	7 0
Chrysanthemums, doz. ...	4 0	9 0	Foliage plants, var., each	1 0	5 0
,, ,, single plants	1 6	2 0	Lilium Harrisi, doz.... ...	12 0	18 0
Cineraria, per doz. ...	9 0	15 0	Lycopodiums, doz.	3 0	4 0
Cyclamen, per dozen ...	12 0	18 0	Marguerite Daisy, doz. ...	4 0	9 0
Dracæna, var., doz.... ...	12 0	30 0	Myrtles, doz.	6 0	9 0
Dracæna viridis, doz. ...	9 0	18 0	Palms, in var., each... ...	1 0	15 0
Erica hyemalis, per doz.	9 0	15 0	,, specimens	21 0	63 0
,, gracilis, per doz. ...	6 0	9 0	Pelargoniums, scarlet, doz.	4 0	6 0
,, various, per doz. ...	8 0	12 0	Tulips, various, doz. bulbs	0 9	1 6
Euonymus, var., doz. ...	6 0	18 0			

AVERAGE WHOLESALE PRICES.—CUT FLOWERS.—Orchids in variety.

	s. d.	s. d.		s d.	s. d.
Arum Lilies, 12 blooms ...	4 0	to 6 0	Mignonette, doz. bnchs. ...	2 0	to 4 0
Asparagus Fern, bunch ...	1 0	2 6	Mimosa or Acacia, bunch (French)	0 9	1 0
Bouvardias, bunch	0 6	0 8	Narciss, white (French) dozen bunches	1 0	2 6
Carnations, 12 blooms ...	1 0	3 0	Orchids, var., doz. blooms	1 6	12 0
Chrysanthemums, 12 bnchs.	2 0	6 0	Pelargoniums, doz. bnchs.	4 0	6 0
,, ,, 12 blooms	1 0	4 0	Roses (indoor), doz.... ...	0 6	1 0
Eucharis, doz.	4 0	6 0	,, Tea, white, doz. ...	1 0	2 0
Gardenias, doz.	3 0	6 0	,, Yellow, doz. (Perles)	1 6	4 0
Geranium, scarlet, doz. bnchs.	6 0	9 0	,, Safrano (English) doz.	1 0	2 0
Hyacinths (Roman) dozen bunches	0 9	1 0	,, ,, (French) per doz.	0 6	1 0
Lilac (French), bunch ...	3 0	5 0	,, ,, ,, per 100...	5 0	7 0
Lilium longiflorum, 12 blooms	4 0	6 0	,, Pink, doz.	1 0	2 6
Lily of the Valley, 12 sprays	1 0	2 0	Smilax, bunch	1 6	2 6
Marguerites, doz. bnchs....	2 0	3 0	Tuberoses, 12 blooms ...	0 3	0 4
Maidenhair Fern, doz. bnchs.	4 0	8 0	Tulips, doz. blooms	1 0	1 6
			Violets, doz. bnchs.	1 6	2 0
			,, Parme (French), bunch...	3 0	4 0

BEYOND RECALL—1897.

Shakespeare, who knew more than any other living man of the thoughts and feelings of the human race, is for ever summing up our virtues and our weaknesses in a few short words or phrases that go straight to the goal as ever did arrow of Robin Hood.

How true to all eternity are those words of his relative to the flight of time as experienced by various individuals. The slow pace of time to the maid who wearies her wedding day; the lazy pace of time for the unlettered priest and rich man, and the galloping of time for the poor criminal who awaits execution ("As You Like It," act iii., s. ii.). As we get older time appears to fly—the seasons come and go so quickly that we hardly mark the changes. Certain it is we never get the half done we intended; whether it is that we plan out for ourselves more than is possible of execution, or whether it is that our powers are failing us, is an open question—probably both causes are at work.

The cry is ever of unfinished work, uncompleted task, and the end of the year finds us lamenting over lost opportunities and chances gone for ever. We shall never again see such a year as this wonderful 1897. And it is doubtful if our children's children can ever show one so full of incident. It has pleased the Almighty to make us a power among the nations. We have lived for sixty years under the beneficent rule of a justly loved Sovereign. Peace and plenty crown our board, and prosperity would be the motto of our trade, if only the evil spirit of discontent would spread his wings and leave us. Happily it is only in one branch of our industry that distress prevails, and we are hoping daily that affairs will be adjusted, and that masters and men may be on better terms and understand one another better than they have done for years.

We think we may say without hesitation that for the agriculturist the year, on the whole, has been better than for several past. The winter was mild and open—indeed, almost too open. The autumn of 1896 was exceedingly wet, and the wetness of the season affected the growth of the Wheat crop; the verdict generally was, "Gone away thin." A good spell of frost is always beneficial to the land. There is nothing like frost for producing a fine mould, in which the young rootlets so delight.

The spring and early summer generally were dry, and the south and south-east suffered much from lack of moisture. This applies particularly to pasture lands. Happily, a warm genial, and we may say general, rain fell in June and put us all in heart again.

There was much complaint in parts about the failure of early Turnips, and fears were entertained for the safety of the Swede crop. Potatoes need moisture in July, and, alas! many fields had to go without. Harvest came—fine, brilliant weather in the earlier part, so that south country farmers and "forrard" northerners got their crops housed in grand condition; not heavy crops, but the colour and quality made amends. Then the weather broke.

Roots were much benefited; but what suited the Turnip and Mangold fields, although improving the quantity of the Potato, badly spoilt the quality; in fact, some of the Potatoes were too far gone, haulms dry and withered, "second growth" was all the story, and from land that, as a rule, sends only Potatoes to Covent Garden, the sample is very poor. We have heard of some fortunate speculators who went in for "Up to Dates," and we are glad to think they are recovering a little of that Potato money lost last season.

The end of September the weather took up, and the autumn has been one of the most beautiful we ever remember—a perfect boon to all concerned in agriculture. There was one touch of frost in October, but since then up to the date of writing, St. Thomas' Day, there has been nothing material. The pastures are a most beautiful green, and little or no inroad has been made on the store of winter provisions.

Grazing beasts have not done well except in favoured places. The early drought told on their pastures, and it also told on the dairy cows. Lambs, taking the country throughout, have done well. We all know the old expression as to how lambs prefer roast to boiled food. There have been local outbreaks of disease, but in many cases these outbreaks were the result of overcrowding. A farm gets "sheep sick," and is no longer a healthy habitat, and yet the farmer, despite of warning, will go against Nature and keep a huge flock, hence a heavy bill of mortality. Mr. Thornton reports some capital averages at Shorthorn sales, and Messrs. Sexton & Grimwade have made grand prices of shire horses. Many of the best and purest Lincoln rams have gone abroad, and the breeders look with satisfaction on the handsome cheque left by the "furriner."

Now for a comparison of prices. Nothing beats figures, they

are more convincing than columns of words. We take Wheat first. Last Christmas Wheat was worth 30s. per quarter, this Christmas it fetches 38s. Barley ranged last year from 16s. to 36s., this year from 25s. to 40s. Oats were 12s. to 21s., as against 17s. to 22s. Potatoes per ton last year, 20s. to 35s. (a few really good made a little more); this Christmas the prices are 65s. to 90s. Maize is 18s., as against 14s. 6d.

With regard to Barley and Potatoes we believe we have by no means seen the highest price yet. With offal Barley and pig Potatoes dear and scarce, we need not wonder that pork has gone up 1s. 6d. per stone. Those who have pork pigs will get a nice little draw, for we fancy any lean pigs there may be will, at any rate for the present, remain lean. Mutton makes about last year's price, but the wool trade has been disappointing, very. We had hoped better things; but, alas! for the present there seems little to cheer in that direction.

We, as farmers, have often been accused of inordinate grumbling. Things do go very contrary with us as they did with Martha Gummidge; but, indeed, it takes only a few gleams of sunshine to cheer us up, and we live much in the future on hope. Little pieces of good fortune turn up when least expected, and we go on toiling and rejoicing, trying modestly to leave our own little corner of this world a better place than we found it.

May we all be spared to see 1898 out as well as in.

WORK ON THE HOME FARM.

Farm work during the year just drawing to a close has, generally speaking, been accomplished under more favourable conditions than those prevailing during 1896. The chief drawback of 1897 was the absence of winter frost, and consequently a rough cloddiness in the Turnip stubbles, which took much hard work to reduce to anything approaching a suitable tilth for spring corn sowing.

Little difficulty was experienced in getting Turnips well sown. That the seed did not germinate, or, having germinated, the plants did not grow well in the early stages, was not the fault of the farmer, but rather his misfortune.

Hay-making time was a heyday time (no pun); never was hay better got or easier to get; we have known very dry seasons when it was as easy, but alas! there was not the fair, almost average, crop of the present season.

For many districts the ingathering of the grain crops was equally satisfactory. They did not bulk up to so much straw as might have been wished, but this helped to lighten the work of carting. As to the reaping, the self-binder now fairly holds the field, and few farmers who require a new machine think for a moment of purchasing one of the old type. This is the result of two or three dryish seasons with an absence of laid crops; but should we have another season like 1892, when Barleys were laid almost before they shot, we fear the new inventions might not stand the severe tests to which they would be subjected. The farm labourer would chuckle heartily at this, for much as the reaper has benefited him in relieving him of laborious work, he is nothing but a thorough Tory at heart, whatever his political colours may be.

BRITISH EGG PRODUCTION.

As you are connected with the agricultural industry and interested in its welfare, I write to ask you if you will take an active part in a National Poultry Test, which I am striving to put on foot on the 1st of March next.

The object of the test is to set at rest the vexed and oft debated question of profit or loss involved by the keeping of fowls, more particularly as egg producers. The British public (townspeople in particular) are for ever asking our farming community why they do not produce the 1,300,000,000 of eggs we annually import. The only answer they get to this query is, Because we cannot produce them at a profit. The rejoinder which follows upon this reply is, So you say, but you have never tested the matter; it pays other nations, why can't you make it a profit? Now, it may be a bold assertion to make, but it is nevertheless a fact, that this question of profit or loss has never yet been subjected to actual test. What I assert is, that no farmer has ever yet kept, say, forty or fifty head of laying hens for twelve months confined and wired in upon an acreage of grass land, and can tell you the exact sum they have cost for food, rent, labour, interest on capital, as against their yield of eggs and price obtained for them. It has hitherto been all guess work.

Now, to carry conviction to the minds of the public, and more particularly of our farmers, it is essential that any such test shall be above suspicion and not open to cavil, and also that it shall not be a mere local test, but one distributed over a wide area with diversity of soil and climate. Let England, Scotland, Wales, and Ireland be represented, or better still, let every county send in a return for at least one flock of fowl. We shall then, and not till then, be in a position to say whether it is our British farmers' fault, or their misfortune and beyond their control, that we import instead of produce the eggs we consume.

No amount of mere argument is sufficient to convince the British farmer that egg production can be made to pay, but I venture to assert that he can be convinced by ocular demonstration, or by the publication of a number of balance-sheets, showing what has actually been done experimentally by men of his own class and similarly circumstanced as himself.

To carry out this test, a strictly uniform system of management must be adopted by all who take part in it.

1st, Each flock subjected to the test shall number forty head.

2nd, Each flock of forty shall be wired in, and confined upon an acre of grass run.

3rd, Each and every flock to receive the same description of food and to be fed twice daily. During the six spring and summer months upon grain only, Maize, Wheat, Barley, and Oats. During the six autumn and winter months, the morning food to be boiled roots mixed with meal, with whole grain at night.

4th, All food to be purchased in the local market, carefully weighed, and stored in a locked shed. The eggs to be counted daily and sold weekly in the best open market obtainable. No fancy price realised to be taken account of.

5th, A strict account to be kept of the number of hours per week devoted to the necessary care of the stock.

6th, A statement of capital involved at the start by the purchase of stock, cost of fowl houses and other appliances, also estimated depreciation of live and dead stock at the close of the year's operations.

The above generally represents the lines upon which the test must be conducted, but there are other minor details, particulars of which will be forwarded to all who are willing to assist in the solution of this question. I may mention that any breed of fowl may be utilised for the purpose of the test, but in most cases it will be manifestly advisable to keep some sitting breed, the production of eggs being the object sought. It is also a matter of importance that the fowls should be located at no great distance from the farmstead, and that the suitability of the spot chosen and the question of shelter should receive due consideration.

Now what does the test involve financially to those who are willing to undertake it? Simply this. It involves their being out of pocket for a few months by the purchase price of their live stock, the necessary appliances and food. The sale of eggs, however, will rapidly reduce this outlay week by week, and without attempting to count the proverbial chicken before it is hatched, it is not unreasonable to say that long ere the twelve months have expired the owner of the stock will have far more than recouped himself for his outlay, after making full allowances for all costs, depreciation of stock, and interest on capital. The risk therefore is *nil*.

Without wishing in any way to depreciate the good which has been done by our farmers' clubs, agricultural colleges, County Council lectures, and even by our poultry shows, yet I believe that a practical test such as I have suggested will do more to impress upon the attention of our farmers the importance of the egg question than anything before attempted. It is the one and only way to satisfy the public mind and enable our farmers to decide for themselves as to whether they are or are not to blame in leaving so long neglected this particular branch of their calling.

If we are ever to make an appreciable impression upon our hitherto insufficient egg supply, it is to our farmers we must look, and why? Because they are in possession of our soil, which is an essential element in the successful keeping of poultry in any quantity.

That Leicestershire shall not be a defaulter in the taking up of this scheme, I intend myself to establish three or four flocks of different breeds which shall be tested under my own supervision, and I do not think it too much to hope that at least a hundred other individuals interested in agriculture will do likewise. This matter should commend itself to the attention of landowners, and especially our educational agricultural colleges and dairy schools, which are, more or less, supported out of public funds.

It may seem to be a matter of small moment to our farmers as to whether fifty head of fowls realise a profit of £5 or £10, or even £15' the sum in either case being insignificant. This, however, is a very narrow view to take of the question. If satisfactory results can be shown from a single flock we have something to warrant an increased number being kept, four flocks upon four acres, or eight upon eight acres, each flock enjoying equal advantages with the first. The return from this increased quantity may prove as substantial a sum as the other was deemed insignificant.

These tests will not only set at rest the question of profit or loss in the keeping of fowls as egg producers, but it will also conclusively show which particular breed of fowl are the most prolific layers and best suited to our climate.

It is intended that the results which are realised by the several trials shall at the close of the year be published in detail in all the leading agricultural papers, as well as, if possible, widely distributed in pamphlet form through the aid of our County Councils and other societies in touch with the agricultural industry.

My thirty years' experience in poultry keeping leads me to believe that results will be forthcoming from these tests calculated to both astonish and impress. It is not, however, possible to carry this scheme to a successful issue unless a sufficient number of agriculturists express their willingness to take part in it. I shall therefore be pleased to hear from anyone interested in this question, or who may desire further information. —K. B. Baghot-De La Bere, *Burbage Hall, Leicestershire.*